DLINE JOURNALS

Journal of Science & Technology Metrics

ISSN: 2582 – 6956

JSTM 2025: 6 (3)
https://doi.org/10.6025/jstm/2025/6/3/103-115

Scientometric mapping of Bengali Culture via Scholarly benchmarks: An Examination of Meaning Metrics

[1]Sharmila V. Gadge
Librarian, DDSP Arts, Commerce and Science College, Erandol
Jalgaon, 425109. India
sharmilagadge@gmail.com

[2]Anil Nanaji Chikate
(Ex.) Head, Department of Library and Information Science
KBC North Maharashtra University, Jalgaon (MS). India
anilchikate@gmail.com

[3]Bidhan Dolai
Scholar, Department of Library and Information Science
SGBAU, Amravati (MS). India
bidhandolai93@gmail.com

ABSTRACT

To understand the dynamics of research production in Bengali culture between 2020 and 2023, this study employs a range of analytical techniques.

Data for this study were gathered using the Scopus database. A thorough and trustworthy database of scholarly publications and citations was made available. This enabled a comprehensive bibliometric analysis, ensuring the precision and applicability of the results.

Some of the primary goals include investigating publication patterns, using a linear regression model for future number prediction, analysing temporal correlations, and illustrating worldwide collaboration through reciprocity scores. According to the publishing pattern in the dataset, there is a variation peaking at 44 articles in 2022 and decreasing to 39 in 2023. A forecast of 44.00 and 46.20 articles for the years 2024 and 2025, as predicted by a linear regression model, demonstrates forecasting potential.

Correlation analysis reveals a positive relationship between the variables "Year" and "Articles"; however, this relationship is not statistically significant (p-value = 0.324). Oscillations of Average Total Citations per Article show that the terrain is constantly changing. The top ten countries, on the other hand, in terms of collaboration patterns, reflect substantial international cooperation by demonstrating bidirectional partnership positions. As a result, it also points out salient partnerships and possible impact on research standardisation, among others.

Keywords: Research Influences, Bengali Culture, Global Collaboration

Received: 18 May 2025, Revised 19 July 2025, Accepted 27 July 2025

1. Introduction

The repercussions of this research were that Bengali civilisation was vivid and vibrant. The tapestry of this culture, stemming from the old civilisations and interacting with other cultures on a dynamic path, is a rare ble nd of modernity and tradition. Bengal's influence in the world literary scene lives through the artistic geni us of Rabindranath Tagore or the film making brilliance of Satyajit Ray.(Marchioro et al., 2023).

It has been an undying spirit as well as creative force amongst the Bengalis from West Bengal, India, Bangladesh, that transcends geographical boundaries, forming a global diaspora which contributes towards enriching diversity within various cultures globally. (Ahadi et al., 2022). As such, it denotes familiar songs associated with Bengali music by its presence at festivals like Durga Puja, signalling how widespread and essential Bengali heritage is, among other ways that humans communicate.

1.1 Literature Review:

A literature review is essential as it summarises current studies, identifies gaps, and informs new studies, ensuring relevance and contribution to the instructional field.

Bobby Hajjaj's (2023) study, which focuses on populism and Bangladesh's independence struggle, examines identity construction using Ernesto Laclau's post structuralist discourse theory. It draws attention to the vital role played by Bangabandhu Sheikh Mujibur Rahman's charismatic leadership in bringing together disparate strands of equivalency during the populist movement for independence in 1971. It also acknowledges the significance of Rahman's transformative leadership for the development of East Bengal's identity in the late 1960s. This study offers a nuanced perspective on Bangladesh's path to independence by illuminating the complex processes of identity formation, populism, and leadership through the lens of Laclau's theory.

In their scientific review, Carollo et al. (2023) fill a research gap by systematically examining a century of scholarly work on form and reality. CiteSpace software is used to convey five thematic categories, including "perceptions of the counselling profession" and "the process and reality of sociocultural development." Review identifies influential literature, summarizes intellectual movements, and discusses ideas and implications for individuals. and how it illustrates connections between facts and contributes to a nuanced understanding.

Barui and Mazumder (2023) conducted a complete scientometric evaluation of global Citizen Science (CS) research, revealing an incredible 40 sixty eight percentage annual average growth rate in scientific output between 2012 and 2021. Utilising records from 1679 articles, they diagnosed PLoS One as the number one journal, Callaghan, C.T., because it was the foremost creator, and the United States as the leading country in the U.S.A. In CS research. The National Science Foundation emerged as the largest funder. The collaboration network evaluation highlighted strong connections among the USA, UK, Australia, and Germany. The review underscores the flexibility of CS methods in numerous research domains, including "birds distribution," "biodiversity," "species classification," "natural resource control," and "public engagement," presenting valuable insights for policymakers, researchers, and funding organisations.

2. Objectives

2.1 Interpreting Publication Dynamics:

Explore the elements influencing the trends in research output and learn the story behind the varying number of publications from 2020 to 2023.

2.2 Crystal Ball Projection:

Analyse the ability of a linear regression model to predict article numbers for 2024 and 2025 to make future predictions.

2.3 Correlation Matrix application:

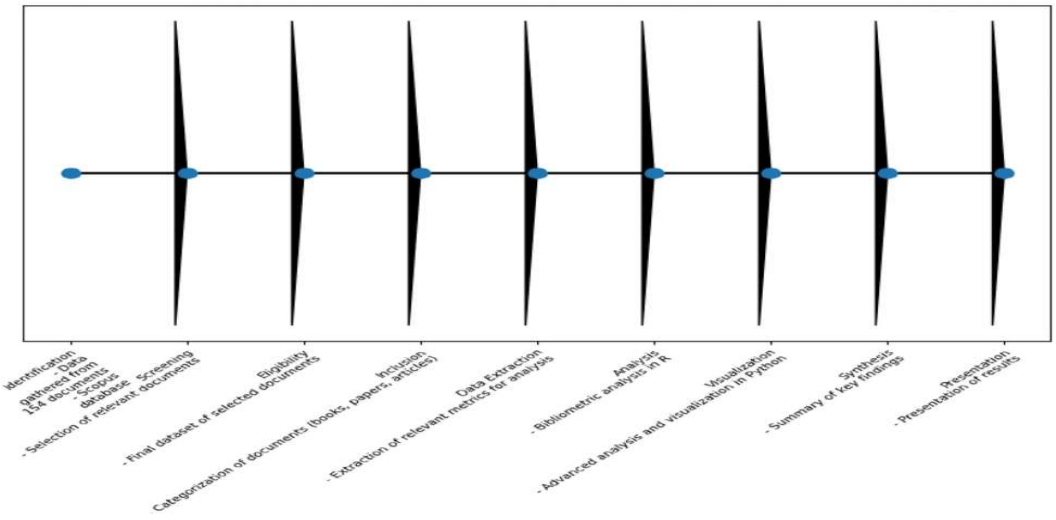
Explore the domain of correlation to comprehend the relationship between time and article creation and interpret the meaning of their dance.

2.4 Global Collaboration Snapshot:

Use reciprocity scores to distil the essence of international collaboration and reveal insights and patterns within the collaborative symphony between nations.

3. Methodology

There are several key elements in the approach to conducting a scientometric study on Bengali culture using the Scopus database. First, data are gathered from 154 documents of various categories (books, conference papers, articles) within a specific timeframe (2020–2023) and from the Scopus database. A methodical approach is created, integrating suitable keyword combinations and search parameters to guarantee a thorough exploration of Bengali cultural literature. (Marchioro et al., 2023).



3.1 Methodology of Scientometric Study on Bengali Culture

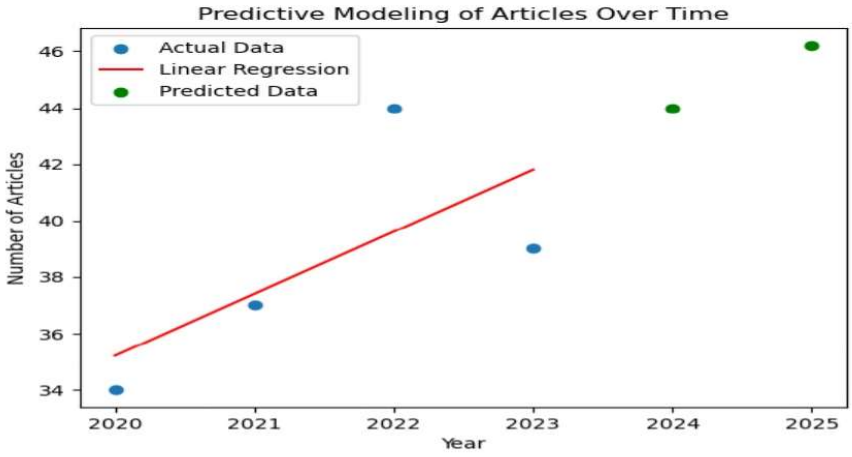
The technique utilises Python programming for data acquisition, preparation, analysis, and visualisation, in conjunction with R-based bibliometric analysis.(Marginson, 2022). The bibliometric analysis is conducted using R, while the advanced analysis and visualisation are performed with Python. This enables a thorough investigation of the Bengali cultural literature data from Scopus.

4. Data Analysis and Interpretations

The number of articles published each year between 2020 and 2023 is captured in the provided dataset. Table 1 illustrates variations in the number of articles published, which increased from 34 in 2020 to 44 in 2022, and then declined to 39 in 2023. This temporal trend may indicate potential changes in the output of research over time.

Year	Articles
2020	34
2021	37
2022	44
2023	39

Table 1: Year-wise scholarly publications



Graph 1: Model of literature production
Predicted number of articles in 2024: 44.00
Predicted number of articles in 2025: 46.20

Statistical methods have been used in the use of a linear regression model to investigate the relationship between the number of articles and the years.(Al-Khoury et al., 2022). Understanding the model's structure is aided by the slope, which represents the average change in articles per unit shift in the year, and the intercept, which means the expected number of articles when the year is zero. The degree to which the variance in the number of articles is explained by the year is revealed by the R2 value, which provides insight into the goodness of fit. Likewise, by evaluating the average squared differences between actual and predicted values, the mean squared error provides a quantitative assessment of the model's predictive performance.(Basumatary et al., 2023).

All of these factors contribute to a comprehensive evaluation of the linear regression model's performance. With projected numbers of 44.00 and 46.20 articles for 2024 and 2025, respectively, the resulting projections

demonstrate the model's potential usefulness in projecting future patterns in article publication.(Pessin et al., 2022).

Correlations			
		Year	**Articles**
Year	Pearson Correlation	1	.676
	Sig. (2-tailed)		.324
	N	4	4
Articles	Pearson Correlation	.676	1
	Sig. (2-tailed)		.324
	N	4	4

Table 2. Correlation matrix

A Pearson correlation coefficient of 0.676 is seen in the correlation table between the variables "Year" and "Articles." The modest positive linear relationship between the two variables, as suggested by this positive correlation coefficient, implies a tendency for the number of articles to increase over time. However, it is essential to consider the corresponding p-value, which is 0.324 (two-tailed). This p-value indicates that the association is not statistically significant, as it exceeds the traditional significance level of 0.05.

4.1 Annual Scientific Production

Year	Mean TCperArt	N	Mean TCper Year	Citable Years
2020	2.59	34.00	0.52	5
2021	2.76	37.00	0.69	4
2022	1.14	44.00	0.38	3
2023	0.41	39.00	0.20	2

Table 3. Mean Citations Per Year

In Table 3, a temporal analysis of Mean Total Citations per Article (Mean TC per Art) during four years (2020–2023) is presented in the supplied data. Interestingly, *MeanTCperArt* exhibits a history of oscillation, peaking at 2.76 in 2021 and declining significantly to 0.41 in 2023. Additionally, the number of articles (N) ranges

from 34 to 44 every year. A similar pattern can be observed in Mean Total Citations per Year (Mean TC per Year), which peaks in 2021 at 0.69 and then declines in the subsequent years. The metric Citable Years indicates the number of years for which articles are considered citable, showing a decreasing trend from 5 to 2(Ninkov et al., 2022).

From	To	Frequency
India	Bangladesh	4
India	Usa	4
Usa	United Kingdom	4
Bangladesh	Australia	2
Bangladesh	Canada	2
Bangladesh	Chile	2
Bangladesh	Pakistan	2
Bangladesh	United Kingdom	2
Bangladesh	Usa	2
Canada	Germany	2

Table 4. Top Ten Collaborative Countries

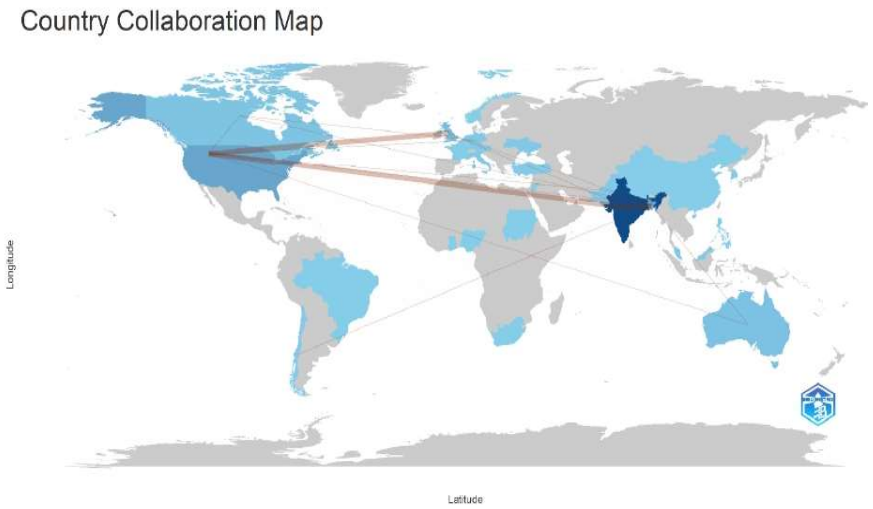


Figure 4. Visualisation of Collaborative Countries

4.2 Reciprocity Score Matrix

Table 5, presented below, provides information on the frequency and reciprocity of international exchanges between multiple countries. India is noteworthy for its four reciprocal encounters with the USA and Bangladesh. Additionally, the United States and the United Kingdom exchange four times(Pessin et al., 2022). Bangladesh, meanwhile, maintains reciprocal relations with Australia, Canada, Chile, Pakistan, the United Kingdom, and the USA, each at a frequency of two. Furthermore, Germany and Canada exchange interactions twice.

From	To	Frequency	Reciprocity
India	Bangladesh	4	1
India	Usa	4	1
Usa	United Kingdom	4	1
Bangladesh	Australia	2	1
Bangladesh	Canada	2	1
Bangladesh	Chile	2	1
Bangladesh	Pakistan	2	1
Bangladesh	United Kingdom	2	1
Bangladesh	Usa	2	1
Canada	Germany	2	1

Table 5. Top Ten Collaborative Countries with the Reciprocity matrix (Score)

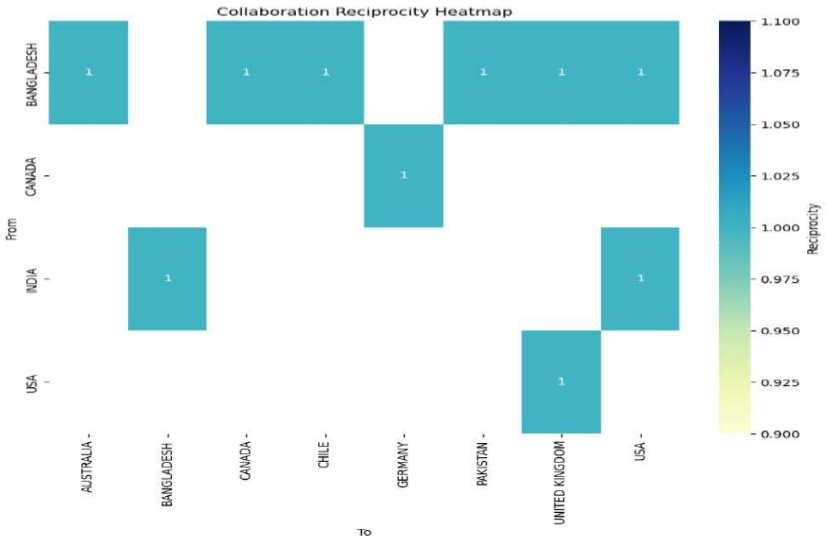


Figure 5. Visualisation heat map, Reciprocity matrix (Score)

Collaboration reciprocity is a valuable indicator for assessing the mutual benefits of partnerships between two nations. The dataset is analysed to see whether collaborations exist in both directions, from country A to B and from B to A, to calculate the reciprocity score for each pair. The ratio of bidirectional partnerships to the total number of collaborations for that particular pair is then used to compute the reciprocity score.(Santos & Caetano, 2023).

Perfect reciprocity, or partnerships that are consistently bidirectional, is indicated by a score of 1, whereas no reciprocity, or unidirectional collaborations, is indicated by a score of 0. The inclusive measure of the total reciprocity in the dataset is the aggregate reciprocity score, which is derived by summing scores across all couples.

4.3 Noteworthy Verdicts

4.3.1 Temporal Trends in Article Publication:

The dataset reveals a variable trend in the quantity of articles produced between 2020 and 2023. There is a subsequent decrease to 39 articles in 2023 following an initial increase from 34 to 44 articles in 2022. This trend indicates possible changes in scholarly activities and research output.

4.3.2 Linear Regression Model Performance:

The estimated numbers of publications for 2024 and 2025, as determined by a linear regression model, are 44.00 and 46.20, respectively. The model's slope and intercept, as well as other statistical measures such as mean squared error and R-squared value, suggest that it may be helpful in predicting future publication patterns. (Li et al., 2023).

4.3.3 Correlation Insights:

The variables "Year" and "Articles" exhibit a positive linear association, with a Pearson correlation coefficient of 0.676, indicating a trend for the number of articles to increase over time. The link does not approach statistical significance, as indicated by the non-significant p-value (0.324), which highlights the need for cautious interpretation.

4.3.4 Scientific Production and Citations:

A temporal analysis of Mean Total Citations per Article (*MeanTCperArt*) reveals oscillations, with a peak at 2.76 in 2021 and a decline to 0.41 in 2023. Mean Total Citations per Year (*MeanTCperYear*) mirrors this pattern, peaking at 0.69 in 2021. The decrease in Citable Years from 5 to 2 suggests a changing perception of article citability (Tan, 2022).

4.3.5 Collaboration Reciprocity Patterns:

Perfect bidirectional partnerships (reciprocity score of 1) are highlighted in the top ten collaborative countries by the Collaboration Reciprocity Study. This indicates strong international cooperation, providing valuable insights into the workings of international scientific alliances.

4.3.6 Notable Collaborative Relationships:

The United States and the United Kingdom, as well as India and Bangladesh, and India and the USA, are noteworthy examples of cooperative relationships characterised by perfect reciprocity and a high frequency of cooperation. These results underscore the importance of further investigating specific collaborations.

4.3.7 Potential Influences on Research Output:

The comprehensive analysis suggests several potential explanations for the observed changes in research output, including academic trends, external influences, and underlying causes. To gain a thorough understanding of the processes that influence article development over the years, further research is recommended. (Sharma & Kumari, 2023).

5. Conclusion

A scientometric study of Bengali culture from 2020 to 2023 reveals research trends and collaborative efforts. Differences in publication numbers imply dynamic research pursuits. Even though correlation analysis suggests a statistically non-significant positive relationship between time and article output, predictive modelling indicates future directions. Collaboration patterns and citations per piece help to determine the quality and significance of research works. Significant partnerships demonstrate the importance of global alliances. Considering all factors, this study contributes to our understanding of the academic milieu surrounding Bengali culture, while encouraging further research on the worldwide impact of such cultures through various means.

6. Limitation

This study has limitations, despite providing insightful information. Firstly, the analysis may have overlooked long-term patterns or seasonal variations in research output because it was based on a small dataset that only covered a brief period. (Deb et al., 2023). Furthermore, if quantitative measurements are used exclusively, qualitative components of research like the breadth of analysis or the originality of ideas may be overlooked. Furthermore, the linear regression model's capacity to forecast the future may be constrained by presumptions about the stability of past patterns and future trends. The predictive validity of the model may be called in to question by external variables that affect future publishing numbers, such as changes in funding or shifts in academic priorities. (Marginson, 2022).

The dynamics of international research networks and partnerships with non academic stakeholders, such as businesses or community organisations, may be overlooked by the study due to its focus on collaboration patterns. Further more, by over simplifying the intricacies of international research partnerships, the reciprocity score which is used to evaluate patterns of collaboration may fail to recognise imbalances in the intensity of collaboration or power dynamics. (Salinas Ríos, 2022).

Lastly, although correlation analysis sheds light on how variables relate to one another, it does not necessarily indicate causality. To investigate the underlying causes of the changes in research production and patterns of collaboration within Bengali culture, a more qualitative study is required.

References

[1] Ahadi, A., Singh, A., Bower, M., Garrett, M. (2022). Text Mining *In:* Education A Bibliometrics-based Systematic Review. *In Education Sciences. 12(3), Mdpi.com*. https://Www.mdpi.com/2227-7102/12/3/210.

[2] Al-khoury, A., Hussein, S. A., Abdulwhab, M., Aljuboori, Z. M., Haddad, H., Ali. M. A., Abed, I. A., Flayyih, H.H. (2022). Intellectual Capital History And Trends: A Bibliometric Analysis Using Scopus Database. *Sustainability. 14(18)*. https://Doi.org/10.3390/Su141811615.

[3] Al-raeei, M., Al-jabban, M. O., Azmeh, C., Al-raeei, A. (2023). Bibliometrics Study of The Cancer Research In The Faculties of Medicine And Dentistry During Syrian Crisis. *In:* Oral Oncology Reports. *Elsevier*. https://Www.sciencedirect.com/Science/Article/Pii/S277290602300095x.

[4] Anantharaja, K., Krishnan, P. (2024). Global Trends of Biofloc Research *In:* The Aquaculture Sector: *A Metadata Scientometric Analysis*. https://Meridian.allenpress.com/Jcr/Article/40/1/167/497282.

[5] Ariza-colpas, P. P., Vicario, E., Oviedo-carrascal, A. I., Butt Aziz, S., Piñeres-melo, M. A., Quintero-linero, A., Patara, F. (2022). Human Activity Recognition Data Analysis: History, Evolutions, and New Trends. *Sensors*. *22(9)*. https://Doi.org/10.3390/S22093401.

[6] Attri, R. K., Upadhyay, A. K., (2018). Annals Of Library And Information Studies (Alis) From 2018–2022: A Scientometric Analysis. In: Researchgate.net. https://Www.researchgate.net/Profile/Rajeev-attri-2/Publication/374535040_Annals_Of_Library_And_Information_Studies_Alis_From_2018-2022_A_Scientometric_Analysis/Links/653f267dff8d8f507cd705e9/Annals-of-library-and-information-studies-alis-from-2018-2022-a-scientometric-analysis.pdf.

[7] Barui, T., Mazumder, S. (2023). Mapping Global Scientific Output on Citizen Science From 2012 To 2021: A Scientometric Analysis. *Journal Of Data Science*, *Informetrics*, https://Www.jcitation.org/Index.php/Jdscics/Article/View/28.

[8] Basumatary, B., Maurya, P. K., Verma, M. K. (2023). Mapping The Landscape of Indian Genomics Research: A Scientometric Analysis. *Rejuvenation Research*. https://Doi.org/10.1089/Rej.2023.0003.

[9] Bhowmick, A., Chakrabarty, B., (2023). Global Visualization of Research Out burst Up-to 2nd Wave of Covid-19 On Wos Literature: A Scientometric Preview. *International Journal of Information* https://Ijism.isc.ac/Article_703220.html.

[10] Chiu, D. K. W., Ho, K. K. W. (2022). Special Selection On Bibliometrics And Literature Review. *Library Hi Tech*. https://Doi.org/10.1108/Lht-06-2022-510.

[11] Concari, A., Kok, G., Martens, P. (2022). Recycling Behaviour: Mapping Knowledge Domain Through Bibliometrics and Text Mining. *In Journal of Environmental Management*. *Elsevier*. https://Www.sciencedirect.com/Science/Article/Pii/S0301479721022222.

[12] Deb, D., De, A., Gillet, P. (2023). Examining The Association Between Corporate Social Responsibility and Corporate Financial Performance: *A Scientometric Analysis*. https://Doi.org/10.1504/Ijebr.2023.134860.

[13] Dominkoviæ, D. F., Weinand, J. M., Scheller, F. (2022). https://Www.sciencedirect.com/Science/Article/Pii/S1364032121010200.

[14] Feng, X., Wang, X., Su , Y . (2022). An Analysis of The Current Status of Metaverse Research Based on Bibliometrics. *Library Hi Tech*. https://Doi.org/10.1108/Lht-10-2022-0467.

[15] Garg, R., Garg, A. (2023). The Research Trends and Scientometric Assessment of Rheumatoid Arthritis *In:* India During 2016-2021. *Current Rheumatology Reviews*. https://Www.ingentaconnect.com/Content/Ben/Crr/2023/00000019/00000001/Art00005.

[16] Giri, R., Das, A. K. (2023). The Journal of Scientometric Research: A Statistical Outlook of The First Eleven Volumes of The Journal. *In Journal of Scientometric Research. Jscires.org*. https://Jscires.org/Article/6734.

[17] Hosamani, S. C., Krishnamurthy, C. (2023). Authorship Patterns In Endocrinology Literature: A Scientometric Study. *Journal of Indian Library Association*. https://Www.ilaindia.net/Jila/Index.php/Jila/Article/View/1714.

[18] Huang, F., Fu, Q., Tang, L., Zhao, M. Trends In Photodynamic Therapy For Dermatology *In:* Recent 20 Years: *A Scientometric Review Based On Citespace*. https://Doi.org/10.1111/Jocd.16033.

[19] Huang, J., Feng, Y., Xie, H., Wu, P., Wang, M., Wang, B., Zhang, Q., Zhang, S., Liu, Z. (2023). A Bibliographic Study Reviewing The Last Decade of Hydrochar In Environmental Application: History, Status Quo, and Trending Research Paths. *Biochar. 5(1)*. https://Doi.org/10.1007/S42773-023-00210-4.

[20] Kanchi, B., Krishnan, P., Agarwal, S. Scientometric Profiling of Reservoir Fisheries Research In India During 1998–2019, *In Comparison To The Global Scenario*. https://Epubs.icar.org.in/Index.php/Ijf/Article/Download/127648/50643/367367.

[21] Konur, O. (2023). First Generation Starch Feedstock based Bioethanol Fuels: Scientometric Study. *Feedstock-based Bioethanol Fuels. I. a*. https://Doi.org/10.1201/9781003226451-57.

[22] Konur, O. (2023). Lignocellulosic Biomass based Bioethanol Fuels: Scientometric Study. Feedstock-based *Bioethanol Fuels. Ii. b*. https://Doi.org/10.1201/9781003226550-23 Koseoglu M A, Yick M Y Y, King B, Arici.

[23] Koseoglu, M. A., Yick, M. Y. Y., King, B., Arici, H. E. (2022). Relational Bibliometrics For Hospitality And Tourism Research: A Best Practice Guide. https://Www.sciencedirect.com/Science/Article/Pii/S1447677022001243.

[24] Krishnan, P., Hemalatha, M., Agarwal, S. (2023). Mapping The Research Publication Trends Among Icar-animal Sciences Research Institutes *In: India: Web of Science based Scientometric Study*. https://Epubs.icar.org.in/Index.php/Ijans/Article/Download/115679/52020/379782.

[25] Li, P., Zhao, Y., Sufian, M., Deifalla, A. F. (2023). Scientometric Analysis of Flood Forecasting For Asia Region and Discussion On Machine Learning Methods. *In: Open Geosciences. Degruyter com*. https://Doi.org/10.1515/Geo-2022-0475.

[26] Luo, F., Li, R. Y. M., Crabbe, M. J. C., Pu, R. (2022). Economic Development And Construction Safety Research: A Bibliometrics Approach. *Safety Science*. https://Www.sciencedirect.com/Science/Article/Pii/S0925753521003623.

[27] Marchioro, V. S., Benin, G., Meira, D., Meier, C. (2023). A Scientometric View Of Wheat Blast: The New Catastrophic Threat To Wheat Worldwide. *Journal of Plant* https://Doi.org/10.1007/S42161-022-01222-y.

[28] Marginson, S. (2022). Global Science and National Comparisons: Beyond Bibliometrics and Scientometrics. *Comparative Education*. https://Doi.org/10.1080/03050068.2021.1981725.

[29] Nayak, B. B., Iburahim, S. A. (2023). Towards A Successful River Dolphin Conservation Plan In India: *A Scientometric Mapping of Past Research and Current Needs*. https://Scholarlypublishingcollective.org/Msup/Aehm/Article/26/1/57/380748.

[30] Ninkov, A., Frank, J. R., Maggio, L. A. (2022). Bibliometrics: Methods For Studying Academic Publishing. In Perspectives On Medical Education. *Springer*. https://Doi.org/10.1007/S40037-021-00695-4.

[31] Pan, L., Xu, Z., Skare, M. (2023). Sustainable Business Model Innovation Literature: A Bibliometrics Analysis. In Review Of Managerial Science. *Springer*. https://Doi.org/10.1007/S11846-022-00548-2.

[32] Pessin, V. Z., Yamane, L. H., Siman, R. R. (2022). Smart Bibliometrics: An Integrated Method of Science Mapping And Bibliometric Analysis. *Scientometrics*. https://Doi.org/10.1007/S11192-022-04406-6.

[33] Qin, Y., Ghalambaz, M., Sheremet, M., Fteiti, M. (2023). A Bibliometrics Study of Phase Change Materials (Pcms). https://Www.sciencedirect.com/Science/Article/Pii/S2352152x2302385x.

[34] Rahaman, J., Batcha, M. S. (2023). How Is Industry 4.0 Changing Food Technology? A Scientometric Profile. *Journal of Data Science, Informetrics, and* https://Jcitation.org/Index.php/Jdscics/Article/View/25.

[35] Raman, R., Nair, V. K., Prakash, V., Patwardhan, A., (2022). Green-hydrogen Research: What Have We Achieved, And Where Are We Going? Bibliometrics Analysis. In: Energy Reports. *Elsevier*. https://Www.sciencedirect.com/Science/Article/Pii/S235248472201321x.

[36] Salinas-ríos, K., (2022). Bibliometrics, A Useful Tool Within The Field of Research. https://Repository.uaeh.edu.mx/Revistas/Index.php/Jbapr/Article/View/6829.

[37] Santos, B. H. V., Caetano, J. M. (2023). Gladiolus Production As A Function of Growing Environment Conditions: *A Scientometric Analysis*. *Icts.unb.br*. http://Icts.unb.br/Jspui/Handle/10482/47614.

[38] Sharma, R., Kumari, L. (2023). Mapping of Heavy Metal Pollution In River System: A Scientometric Approach. *In Journal of Scientometric Research. Jscires.org*. https://Jscires.org/Wp-content/Uploads/2023/09/Jscientometres-12-2-332.pdf.

[39] Sheng, S., Song, W., Lian, H., Ning, L. (2022). Review of Urban Land Management Based on Bibliometrics. *Land*. https://Www.mdpi.com/2073-445x/11/11/1968.

[40] Tan, L. P. (2022). Bibliometrics of Social Entrepreneurship Research: Cocitation and Bibliographic Coupling Analyses. *Cogent Business Management*. https://Doi.org/10.1080/23311975.2022.2124594.

[41] Walsh, I., Rowe, F. (2023). Bibgt: Combining Bibliometrics And Grounded Theory To Conduct A Literature Review. *European Journal Of Information Systems*. https://Doi.org/10.1080/0960085x.2022.2039563.

[42] Wang, T., Lund, B., Dow, M. (2022). A Bibliometrics Study of Library And Information Science Doctoral Dissertations In China From 2011 To 2020. *Education for Information*. https://Content.iospress.com/Articles/Education-for-information/Efi211545.

[43] Zheng, Q., Xu, J., Gao, Y, Liu, M., Cheng, L., Xiong, L. (2022). Past, Present And Future of Living Systematic Review: A Bibliometrics Analysis. *In Bmj Global*. https://Gh.bmj.com/Content/7/10/E009378.