SCIENTOMETRICS STUDY IN "ARTIFICIAL INTELLIGENCE" LITERATURE: AN ANALYSIS OF THE SCOPUS DATABASE

Ms. Shital Ramdasrao Nasne
Research Student, Deptt .of LIS, SGBAU, Amravati
shitalnasne@gmail.com

Dr.Vaishali P.Gudadhe
Professor and Head, Deptt .of LIS, SGBAU, Amravati
vgudadhe020@gmail.com

Abstract
The present study provides a Scientometrics analysis of research on Artificial Intelligence (AI) within the field of Social Sciences as indexed in the Scopus database. The study focuses on publications from 2021 to 2025, during which 4,803 documents were retrieved, revealing a significant increase in research productivity, particularly in 2024 (37%). Data were collected using a structured search strategy restricted to the Social Sciences subject area with at least one Indian affiliation.
Keywords: - *Artificial Intelligence, Scientometric, Research, Literature, SCOPUS*

Introduction

Scientometric is the Study of measuring and analyzing science, technology and innovation. Major research issues include the measurement of impact, reference sets of articles to investigate the impact of journals and institutes, understanding of scientific citations, mapping scientific fields and the production of indicators for use in policy and management contexts. In practice there is a significant overlap between scientometrics and other scientific fields such as Bibliometric, information systems, information science policy.

Artificial Intelligence is the ability of a computer program to learn and think. John McCarthy coined the term 'Artificial Intelligence' in the 1950s. He said, 'Every aspect of learning or any other feature of intelligence can in principle be so precisely described that a machine can be made to simulate it. An attempt will be made to find how to make machines use language, form abstractions, and concepts, solve kinds of problems now reserved for humans, and improve themselves.'

It enables multi-tasking and eases the workload for existing resources. AI enables the execution of previously complicated activities without incurring significant costs. AI operates continuously and has no downtime. AI helps people with varied capacities.

SCOPUS

Scopus, developed by Elsevier and officially launched in 2004, is a multidisciplinary bibliographic and citation database designed to support global research and academic evaluation. It covers an extensive range of subject areas, including life sciences, health sciences, physical sciences, social sciences, engineering, computer science, and the arts and humanities, providing comprehensive visibility of scholarly communication across disciplines. Scopus indexes peer-reviewed journals, conference proceedings, trade publications, and book series, making it both an abstracting and citation database.

Definition

Literature

Virginia Woolf: Virginia defined literature in a perfect way. "Literature is strewn with the wreckage of those who have minded beyond reason the opinion of others."

Ezra Pound: "Great literature is simply language charged with meaning to the utmost possible degree."

Artificial Intelligence

Oxford Dictionary of Computer Science (2020):
"Artificial Intelligence is the theory and development of computer systems able to perform tasks normally requiring human intelligence, such as visual perception, speech recognition, decision-making, and translation between languages."

Merriam-Webster Dictionary (2022):
"A branch of computer science dealing with the simulation of intelligent behavior in computers."

Scientometrics

According to Tague-Sutcliffe (1992) defines Scientometrics as "the study of the quantitative aspects of science as a discipline or economic activity. It is part of the sociology of science and has application to science policy-making. It involves quantitative studies of scientific activities, including, among others, publication, and so overlaps bibliometric to some extent".

Review of Past Study

A few relevant reviews are as follow:

Gupta and Singh (2023) examined the quantitative growth of Artificial Intelligence (AI) research using Bradford's Law and the Leimkuhler model. Drawing data from the Web of Science covering 2011–2020, they analyzed publication patterns,

journal productivity, and thematic expansion. The study revealed a rapid increase in AI-related publications and diversification of research outlets, indicating that AI has evolved into a multidimensional and cross-disciplinary research field.

Adam et al. (2025) conducted a scientometric analysis of AI applications in precision medicine. Using bibliometric mapping, the study identified publication trends, citation patterns, and collaboration networks among leading countries and institutions. Results show that AI-driven healthcare research has accelerated sharply, particularly in diagnostic and treatment optimization areas, positioning precision medicine as a rapidly emerging frontier of AI research.

Objective of the study

The allied objective of the research was as following:

- To determine the year -wise publication on Artificial Intelligence.
- To study authorship productivity.
- To determine Cumulative Growth Rate
- To study Subject area distribution and affiliations.

Scope

The present study is confined to research works published in the field of social sciences that are indexed in the Scopus database and contain the keyword "Artificial Intelligence." However, particular emphasis has been placed on the period between 2021 to 2025, during which a significant rise in publication output was observed. A total of 4,803 research documents were retrieved from Scopus for this period, reflecting the rapid growth of scholarly interest and interdisciplinary collaborations in AI-related social science research across India.

Methodology

The data for this study were sourced from the Scopus database, a leading platform for bibliometric and scientometric research. A structured search strategy was applied to retrieve publications containing the term "Artificial Intelligence" in the title, abstract, or keywords, limited to the Social Sciences subject area with at least one Indian affiliation. The dataset was refined to exclude duplicates and irrelevant records, and the final data were analyzed to assess publication growth trends, authorship patterns, funding organizations, and subject-wise contributions.

Table No.1 Year -Wise Publication

Sr. No.	YEAR	No. of Publication	Percentage
1	2025	1677	35%
2	2024	1796	37%
3	2023	683	14%
4	2022	401	8%
5	2021	246	5%
Total		**4803**	**100%**

The publication trend shows a consistent rise in research output from 2021 to 2025, with the highest productivity in 2024 (37%). The rapid growth reflects the increasing relevance of AI applications in the social sciences, particularly after 2020, likely influenced by digital transformation and AI policy initiatives in India. The lowest output was recorded in 2021 (5%), marking the beginning of the upward trajectory.

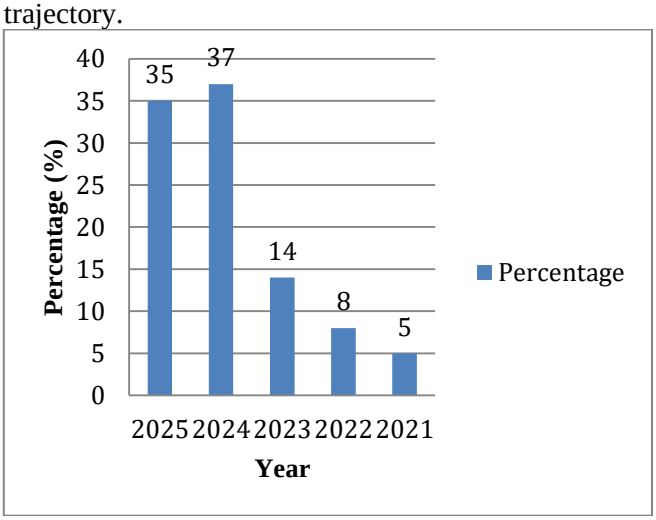

Figure No. 1: Year-Wise Publication

The year-wise analysis shows a steady increase in AI-related publications from 2021 to 2025, peaking in 2024 with 37% of the total output. The cumulative growth rate and H-index rose consistently, indicating higher research productivity and impact. A minor decline in 2025 suggests stabilization after rapid growth, reflecting the maturity and sustained interest in AI research within the Social Sciences domain.

Table No.2 Year-wise Cumulative Growth Rate

Year	Publications	Percentage	Cumulative Publications	Cumulative Growth Rate (%)
2021	246	5%	246	—
2022	401	8%	647	63
2023	683	14%	1330	105.5
2024	1796	37%	3126	135
2025	1677	35%	4803	53.6

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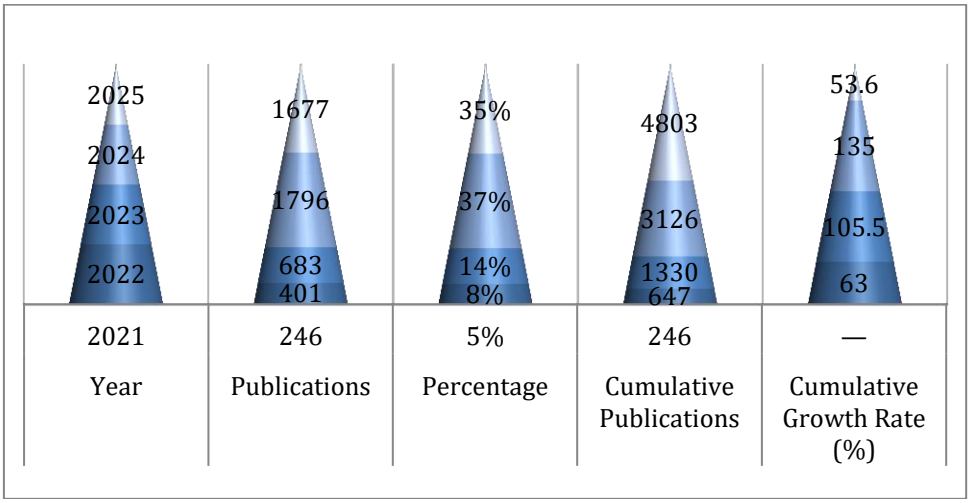

Figure No. 2: Year-wise Cumulative Growth Rate

Table No.3 Researcher Profiles and Citation Count

Sr. No.	Researcher Profiles	Researcher Profiles and Citation Count	Percentage
1.	Singh, B.	43	23%
2.	Singh, R.	21	11%
3.	Gehlot, A.	19	10%
4.	Jain, V.	18	10%
5.	Kaunert, C.	18	10%
6.	Dwivedi,Y.K.	16	8%
7.	Raghav, A.	15	8%
8.	Tanwar, S.	15	8%
9.	Lal, S.	12	6%
10.	Whig, P.	12	6%
Total		**189**	**100%**

The authorship analysis identifies the top ten contributors to Artificial Intelligence (AI) research within the Social Sciences domain in India, comprising a total of 189 publications. Among them, Singh, B. is the most productive author with 43 publications (23%), followed by Singh, R. (11%), Gehlot, A. (10%), Jain, V. (10%), and Kaunert, C. (10%), each demonstrating a strong research presence. Other active contributors include Dwivedi, Y.K. (8%), Raghav, A. (8%), Tanwar, S. (8%), Lal, S. (6%), and Whig, P. (6%), who collectively reflect growing collaboration and diversification in AI-related social science research.

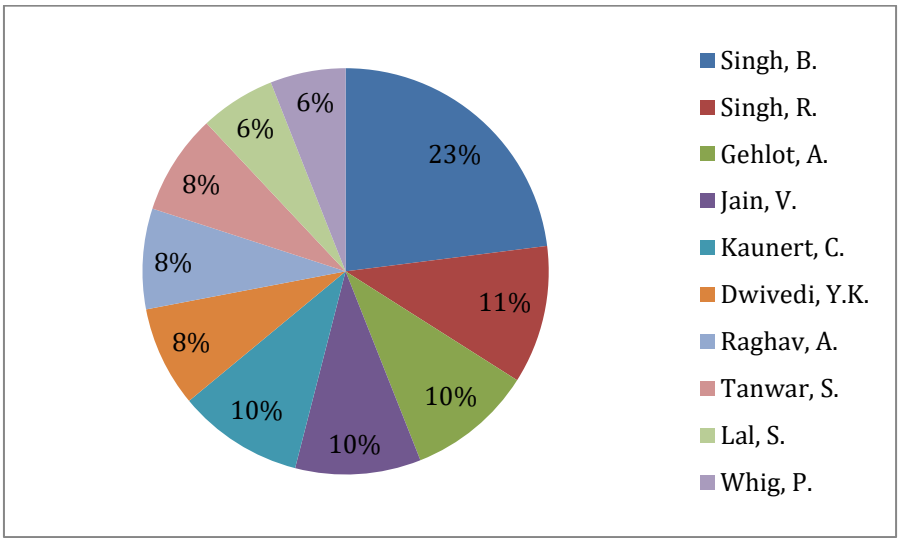

Figure No.3: Researcher Profiles and Citation Count

Table No.4 Subject Area

Sr. No.	Subject Area	No. of Subject	Percentage
1.	Social Sciences	4803	31.60%
2.	Computer Science	2919	19.20%
3.	Engineering	1378	9.07%
4.	Decision Sciences	904	5.95%
5.	Business, Management and Accounting	873	5.74%
6.	Medicine	817	5.38%
7.	Environmental Science	616	4.05%
8.	Economics, Econometrics and Finance	557	3.66%
9.	Energy	554	3.64%
10.	Mathematics	490	3.22%
11.	Arts and Humanities	392	2.58%
12.	Biochemistry, Genetics and Molecular Biology	173	1.14%
13.	Agricultural and Biological Sciences	164	1.08%
Total		**14640**	**100.00%**

The subject analysis shows that social sciences lead with 31.6% of publications, confirming the study's main focus. Other major areas like computer science (19.2%), engineering (9.07%), and decision sciences (5.95%) highlight strong interdisciplinary collaboration. Fields such as business, medicine, and environmental science also contribute notably, reflecting AI's growing applications in social and policy research.

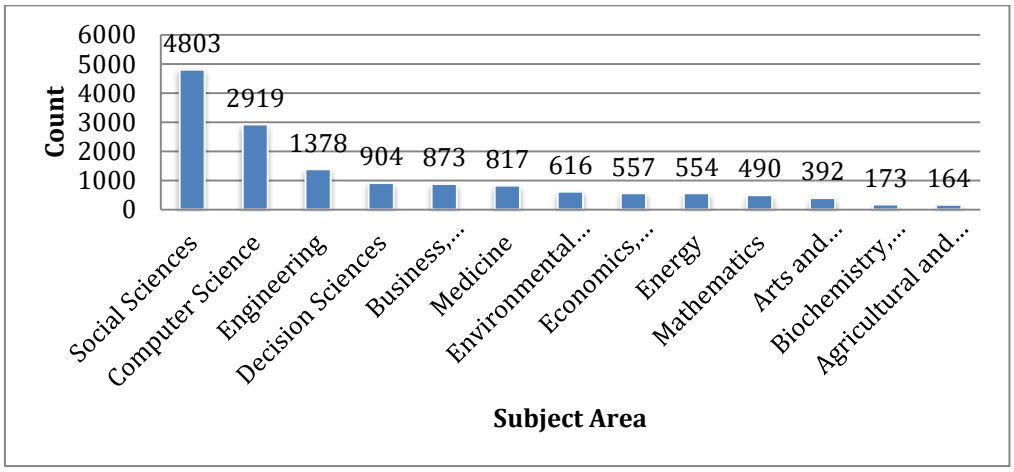

Figure No.4: Subject Area Distribution

Table No.5 Affiliations Count

Sr. No.	Affiliations	Affiliations Count	Percentage
1.	Department of Science and Technology, Ministry of Science and Technology, India	24	18.2%
2.	National Natural Science Foundation of China	20	15.2%
3.	UK Research and Innovation	17	12.9%
4.	University Grants Commission	15	11.4%
5.	National Science Foundation	12	9.1%
6.	Deanship of Scientific Research, King Saud University	9	6.8%
7.	European Commission	9	6.8%
8.	Ministry of Electronics and Information technology	9	6.8%
9.	Science and Engineering Research Board	9	6.8%
10.	Indian Council of Social Science Research	8	6.1%
Total		**132**	**100.0%**

The analysis of funding affiliations shows that the Department of Science and Technology, Ministry of Science and Technology, India, is the leading contributor with 18.2% of the total support, followed by the National Natural Science Foundation of China (15.2%) and UK Research and Innovation (12.9%). Indian agencies such as the UGC, SERB, and ICSSR also play significant roles, reflecting strong national support for AI research. The presence of international organizations like the European Commission and King Saud University highlights global collaboration and diversified funding sources in AI-related social science research.

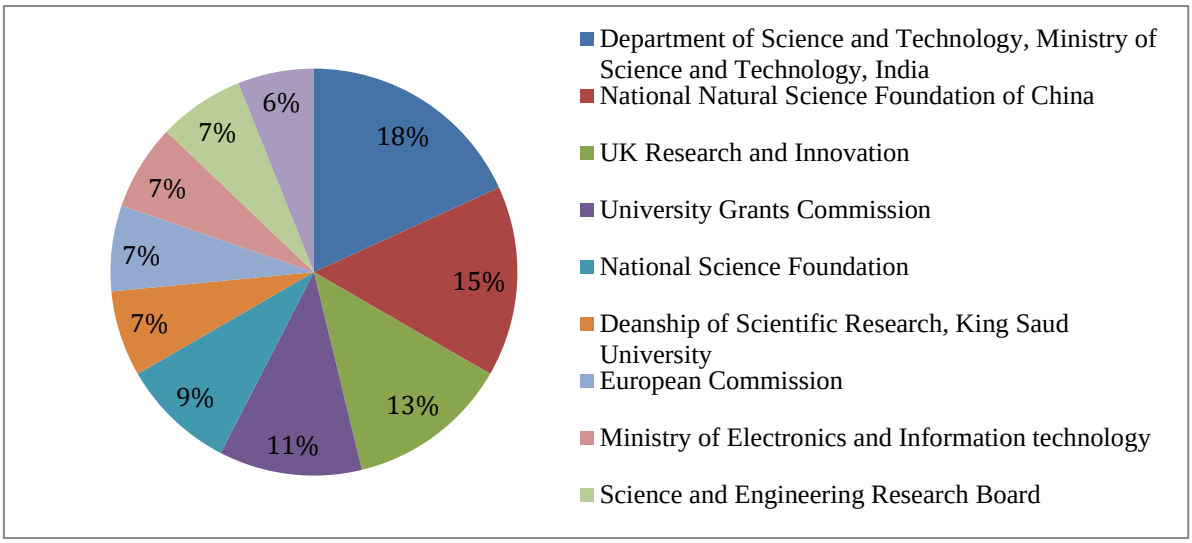

Figure No.5: Funding Affiliations

The analysis of top ten country-wise contributions reveals that India dominates the research output on Artificial Intelligence within the refined dataset, accounting for 82% (4,803 publications) of the total records retrieved from the Scopus database. This overwhelming share is primarily due to the study's refinement to Indian publications, reflecting the country's growing emphasis on AI research and development across academic and industrial sectors. In comparison, contributions from other nations are considerably lower, with the United States (5%), United Kingdom (3%), Saudi Arabia (2%), and Malaysia (2%) following as minor yet notable participants.

Conclusion

The findings indicate that India dominates the research output with 82% of publications, demonstrating its leading role in AI-driven social science research. Authorship analysis identified Singh, B. as the most prolific contributor, followed by Singh, R. and Gehlot, A., reflecting an active and collaborative research environment. Subject-wise distribution highlights strong interdisciplinary linkages, with contributions from computer science,

engineering, and decision sciences, alongside social sciences. The study concludes that AI-related social science research in India has experienced rapid growth, emphasizing increasing scholarly interest, cross-disciplinary integration, and the nation's emerging prominence in global AI research.

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