Artificial Intelligence Research Visibility as Reflected in the Web of Science: a Scientometric Approach

B. Kumara[1*], B.T. Sampath Kumar[2] and S.N. Rajashekara[3]

[1] Deputy Librarian, Tumkur University, University Library, B.H. Road, Tumakuru, India

[2] Senior Professor, Tumkur University, B.H. Road, Tumakuru, India

[3] Librarian, Jyothy Institute of Commerce and Management, Bangalore, India

**kumarapb@gmail.com*

This paper examines the research visibility of "Artificial Intelligence" in the Web of Science over a span of 20 years, from January 2005 to December 2024. The study is confined only to full-text articles included in the Web of Science database. The data were collected from the Web of Science database using the keyword "artificial intelligence." To identify the research productivity of "artificial intelligence," a total of 44,313 records were downloaded and recorded in the MS Excel spread sheets for further analysis. Furthermore, this study used VOS viewer software tools to create data visualization. Findings depicted a positive correlation between the number of articles and the year they were reflected in the Web of Science database; the correlation was significant (r=.796**, p=.000). The study found that most articles were published in 2005 (122, or 0.3%), while the highest number of articles were identified in 2024 (11,869, or 26.8%). It was noticed that 21,002 articles were identified as being related to artificial intelligence. The study found that Attia, ZachiItzhak, had the most publications (151) and ranked first among the top 20 researchers. Noteworthy findings included that Harvard University ranked first among the top 20 institutions, with 1,086 publications. It was found that the article entitled "Explainable Artificial Intelligence (XAI): Concepts, taxonomies, opportunities and challenges toward responsible AI", by Arrieta and others published in 2020 received 4,313 citations. In addition, USA led the global rankings with 11,306 (23.8%) published articles, securing the top position among the 20 leading countries. Further, results exhibited that overall, 9,031 articles were recorded in computer science subjects secured in rank one. The study provides insights into, the growth rate of research publications on "artificial intelligence" in terms of publications, citations, types of publications, author productivity, productive countries, and authorship patterns etc. The study recommends that the researcher needs to publish quality research articles in reputable journals in order to have more visibility. The study highlights that there are significant trends in publication patterns and citation impacts in recent years.

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