Special Issue of JILA on "Bibliometric & Scientometric Research from India"

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INTRODUCTION

Bibliometric, informetrics and scientometrics are research evaluation tools well known for their major potential to assess the influence of scientific works in a reliable, objective, and transparent way in all domains of knowledge. These three metrics only differ in subject background but are same in their theories, methods, technologies, and applications. Bibliometric/scientometric studies map science to discover how inter-disciplinary knowledge flows in research, monitor research performance at global, national, institutional, and individual scientist level, recommend guidelines for science policy and management, rank universities and research institutes, undertake research project evaluation, and analyze body of scientific information to create new models of research growth and distribution, etc. Data sources used in undertaking bibliometric research evaluation studies include multidisciplinary databases such as SCOPUS, WoS. Google scholar, and PubMed. Bibliomertics/scientomerics approach data analysis for research evaluation on metrics and indicators of quantity (output), quality (performance), and relational indicators (bibliographic coupling count, co-citation count, co-word count, and co-author count). Relational indicators in particular measure relationships between research networks, teams, institutions, and countries. Software tools frequently used in science mapping and visualization include VOS viewer, Gephi, IN-SPIRE, Cit Net Explorer, etc. The stakeholders providing impetus to bibliometric/scientometric studies include scientists, academicians, library professionals, S&T managers from research institutes, universities, S&T departments, science funding organizations etc.

India has witnessed growth in the application of bibliomertic/scientometric measurements to systematic evaluation of research systems and allocation of funds, making decision making processes in S&T management more objective and transparent. Universities, research institutes/ organizations, and science funding agencies routinely use bibliometric measurements to finalize job appointments, promotions of teachers/researchers, allocation of research grants, travel grants, and research awards, etc. In addition, librarians and information professionals utilize bibliometric tools for improving and strengthening in-house library operations, library collections, and revising/formulating weeding out policy guidelines and in designing, developing, improving their information retrieval services and databases, etc.

The special issue of this journal is devoted to scientometric and bibliometric studies pursued by Indian scholars. This issue presents eight research articles describing bibliometric- based research evaluation studies in select areas of topical interest.

Thin films research being a multidisciplinary research field involves research inputs from several different disciplines such as materials science, surface science and applied physics, needed for building thin film applications. The first paper is on the theme "Thin Films Research: A Scientometric Assessment of Indian Publications during 2009-18" by S.M. Dhawan et al. It makes a modest attempt to assess research performance of India on thin films in global context. The study uses metrics and indicators for evaluation of thin film research on a series of measures such as national and global research output, annual and cumulative growth and share of international collaboration based papers in the total national output in the subject. In addition, the paper presents the distribution of India's publications output by broad subject areas, sub-areas, and by thin films applications. Besides, the paper profiles top ranking organizations, top authors and top source journals and in addition it features bibliometric characteristics of highly-cited papers.

E-commerce has since evolved as a major transformational tool for markets across India and abroad enabling buying and selling of goods and services or transmitting funds or data, over electronic networks, online on the internet or mobile networks. The second paper is entitled "E-Commerce in India: A Bibliometric Analysis of Indian Research Publications Output during 2003-18" by B.M. Gupta et al. It provides a comprehensive assessment of e-commerce research in India in global context. The study profiles top 15 global research organizations, top 15 global authors in the field, top subject areas intersecting e-commerce research, and top channels in research communications. Besides,

the paper features bibliometriccharacteristics of highly-cited papers.

Reinforcement learning is a type of machine learning that enables the creation of intelligent systems, like robots, well known for their role to respond and perform intended actions mostly in a constantly changing and dynamic environment. The third paper is on "Reinforcement Learning Research: A Scientometric Assessment of Global Publications Output during 2009-18" by Neeraj Kumar Singh et al. This paper analyzes global research output in the field of reinforcement learning, comprising 5345 global publications in the field during 2009-16.

The World Wide Web has transformed communicating academic information across systems using computer and Internet technologies. The web has come to have influenced also the citing behavior of researchers, which in turn has influenced the growth of web citations. The fourth paper is on "Accessibility and Characteristics of Web Citations in Journal of Computer-Mediated Communication during 2008-2017" by Niveditha and Kumbar. The paper explores the accessibility and characteristics of web citations covered in the *Journal of Computer Mediated Communication*. The sample data for the study comprises 337 articles and 17946 references extracted during 2008-17.

Radio Frequency Identification (RFID), is the latest fast growing technology in use in libraries as a technology solution to minimizing theft of library documents as well as harnessing it as a reliable access control systems. Its role goes beyond being as a security system to become a tracking system tracking materials more efficiently throughout the library, a faster

charging and discharging system, and a system for inventorying and materials handling. The fifth paper is on "RFID Applications in Libraries: A Scientometric Assessment of Global Publications Output during 1998-2019" by Faizul Nisha et al. Using various bibliometric indicators, the paper assesses research performance in "RFID Applications in Libraries" based on publications as indexed in Scopus database during 1998-19.

Digital library technologies have transformed physical libraries into hybrid libraries as well as paved the way for creation of other types of digital libraries like virtual library, institutional repositories, and digital archives. The sixth paper is on "Research on Digital Libraries: A Scietometric Assessment of India's Publications during 2000-19" by P. Visakhi, B.D.Kumbar and J. Shivarama. The study examines 681 Indian publications on digital libraries, as indexed in Scopus database during 2000-19.It focuses on the India's growth, distribution of Indian research output by document and source type, global publication share, citation impact per paper, the share of international collaborative publications and of leading collaborating partner countries, distribution by broad subject areas, publication productivity and citation impact of top 20 top organizations and authors and the identification of modes of communication in research.

Universities in India are contributing a major share to national output of the country in science & technology. Measurement and evaluation of university research output has become an important area of bibliometric research in India. The seventh paper is on "A Comparative Study of University of Mysore and Karnatak University in Science: Research Output and Citation Impact during 2002-16" by Gouri Gourikeremath et al. Using different bibliometric indicators, the paper attempts to compare the research performance of science faculties under the University of Mysore and the Karnatak University. Both the universities are UPE-awarded universities within the Karnataka state.

Open Source software as a technology has emerged as a panacea for institutions and libraries for its widespread applications in libraries enabling instantaneous access to information, better services to patrons, and helping the institutes in bridging the digital divide. The eighth paper is on "Open Source Software (OSS): A Scientometric Study of Global Publications during 1999-18" by Jivesh Bansal and Madhu Bansal. The paper examines 341 global publications on "Open Source Software" research, data for which was sourced from Web of Science during 1999-18. The study uses various bibliometric indicators, such as growth rate, citation impact, share of international collaborative papers, subject distribution etc as a means to explore research trends in this area.

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