

Indexing and Abstracting Bibliographic Electronic Database: A Comparative Analysis

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ABSTRACT

Indexing and abstracting services provide brief documents assigning descriptors referencing documents. The product of the service may be of abstract of the journal, conference proceeding or any other document which is published in the legitimate manner. This can be served through the gateway of subject bibliography and/or of bibliographic databases. It is required to locate data without being confused and wasting the precious time of the users without searching every row of the database table every time. So, it is highly requires for every categories of users' in general and students, research scholars and faculty members in particular in academic perspectives. So, the aim of this paper is to highlight the importance of the electronic indexing and abstracting databases in the present scenario.

KeyTerms: Indexing, Abstracting, Bibliographic Database, Reference, Scopus, Web of Science, Google Scholar, Open Access

INTRODUCTION

A bibliographic database is an aid to search the organised digital collections of published literatures including newspaper articles, journal and conference articles, government publications, books, reports, patents, and legal publications (https://en.wikipedia.org/wiki/Bibliographic_database)¹. It may be a compilation records of a single subject or collection of records of the multiple subjects. Philosopher's index, Biography index, Newspaper Abstracts, New York time index and many others are the typical examples of indexing and abstracting services. Earlier, these kinds of services were being provided through the manually compiled index cards. But now-a-days, it is possible to provide through the electronic compilation process and developed over the time by the indexing services which is called as controlled vocabulary. Index is a synonymous with a catalogue. It locates a subject whereas a catalogue entry includes descriptive specification of a document (ibid.). The database focuses on a particular field of knowledge (<http://web.nli.org.il/sites/NLI/English/infocannels/Catalogs/bibliographic-databases/Pages/default.aspx>)² and contains various types of publications which can be searched through the keywords, abstracts and sub-themes. It is a search engine dependant where published articles can be searched separately for

grey literature.

Why is indexing essential?

Indexing is essential because:

- It will help the journal archive and it would be accessible to the wide audience (<https://www.editage.com/insights/journal-indexing-101-understanding-the-basics>)³;
- It will improve the reputation of the journal and as a source of information to the elated field; and
- It will help the researcher to find the relevant information for their study and being indexed in the well-established databases and increasing readership.

A comparative analysis between Scopus and Web of Science Bibliographic Databases

Web of science published by Thomson Reuter is a multidisciplinary indexing and abstracting service. It is the amelioration of different subjects for the academic necessities and it is subscribed by the different libraries and academic institutions for catering to the needs of the students, research scholars and the faculty members. It is also highly necessary for research and development and a greater source for gathering information for different academic purposes. Web of science impact factor is a viable, and widely used

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QR Barcode



informative journal which measures the factors through visibility and frequency of use.

Scopus is published by Elsevier is a most extensive and popular search tools to track impact factors of the published articles in different journals in academia. As web of science ranks the journals, in the same way, Scopus also ranks journals and total citations to indicate impact, gravity of the research and influence the author. The purpose of both the databases is merely same the use of tools in terms of their scope, method, and coverage, of the database differs from each other. It provides access to the users in the field of scientific, medical, technical, and social science literature. Web of science is a multidisciplinary database, contains Science, Social Sciences, and Arts & Humanities Citation Index. In addition to this, it can be added that, database focuses on academic journals. They neglect the papers in the deep web and miss important articles and monographs. Use of Scopus, Web of science, and Google scholars cannot show research

table 1 states that, the usefulness and services of above two databases are almost same. They are likely to provide the data and information in the form of articles, books, monographs for the different users' categories like, teachers, scientists, research scholars and students. But, they differ in quantity and quality of journals covered in different subjects.

Google Scholar

Google scholar is a citation impact factor platform which provides fast access into grey literature of the published papers. It is easy to access and impact factors like, h-index, h5-index, and i10-index are determined by Google scholar. It should be used to measure the worth of the research papers. It has some limitations like, metadata problems and inflated citation counts. It provides access to other linked papers through it's cited by feature. The citation and other metrics are seen through its browsing tool but not curated bibliometric tool as followed by web of Science and Scopus.

Table1: Comparative Analysis of Scopus and Web of Science

Web of Science Facilities	Scopus Facilities
<ul style="list-style-type: none"> ● It is an interdisciplinary database covers subjects like, social sciences, Life sciences, arts and humanities. ● It provides access to the scholarly articles through its network. ● It is indexed since 1940 which covers Journals, conference proceedings, symposia, seminars, colloquia worldwide including open access journals. It does not provide any thesaurus services to the clients. ● It covers back files, covers indexing, cited reference, chemical structure searches, and highly cited book series. ● It is facilitated by the author identification tools. It links directly to full texts and easy to search for complete bibliographic data, cited reference data, WoS tutorial. ● It is determined by the Essential Science Indicators to influence individuals, institutions, papers, publications, and countries as well as emerging research areas with citation impact. ● It provides authors profile and long term trend analysis, citation indexing and average per year citations. In addition to these things, it provides authors, titles, keywords, abstracts, periodical titles, address of the authors and publication years. 	<ul style="list-style-type: none"> ● It covers subjects like, social sciences, Life sciences, health sciences, and physical sciences. ● Impact per Publication (IPP) is a new journal metric which measures the citations ratio of a published article and additional metric for comparing and evaluating journals. ● It covers web sources including patents, scientific web pages through scirus which includes author home page, university sites, resources like, reprint servers and OAI compliant resources. ● It indexes records with abstracts in millions, titles and content from different world wide publishers. ● It is the largest abstract and citation database in different research domain areas and web sources. ● It gives cited references to its databases back to 1970. ● It covers conference proceedings, publications of the open Access journals, monographs, books, scientific web pages, patent records, Links to full-text and different library resources, alerts services to the authors for new articles matching to the authors' interest. ● It provides authors profile and long term trend analysis, and h-index prior to 1996 publications.

performance (http://hlwiki.slais.ubc.ca/index.php/Scopus_vs._Web_of_Science)⁴ only knowing the bibliometric features and h-indexes. One has to understand the subject and perform best in the own domain areas. The national and international journals which are available in the databases like, Scopus, Web of Science and Google scholars are also indexed in the other databases like, CrossRef, CrossCheck, Cabell's, Ulrich's, Griffith Research Online, and many others. They are the prominent indexing databases and can be differentiated in the scopes and different coverage areas of different subjects. Scopus is produced by the Elsevier which is one of the well-known international publishers in the field of science. Clarivate Analytics is the producer of Web of science and it is owned by Thomson and Reuter Corporation, United States. Some of common features and the comparative facilities in between the Web of science and the Scopus are given below.

Still it has important positions in the citation impact factors and determines the value of the paper through the citations which is an instant result to the authors.

Major Indexing/Abstracting Databases in the world

Indexing and abstracting databases play an important role in providing bibliographic information in library and information services. Indexing service provides access to documents. It is used for the computer programs and back of the books and journal indexes (https://en.wikipedia.org/wiki/Indexing_and_abstracting_service)⁵. Abstracting services provide abstracts of the publications of a group or its related subjects on subscription basis. It is very much helpful for shortening and summarizing the documents and assigning the descriptors for referencing different documents for the users' benefit.

Table 2: Major Indexing/Abstracting Databases in the world

Sl. No.	Indexing and Abstracting Databases	Year of Estd.	Developer/Service Provider	Key Features of Databases
1	Index Medicus/Medline	1879	National Library of Medicine, United States	It is Published by the US National Library of Medicine. It is a broad index of medical scientific journal articles publishing since 1879. NLM began computerizing the documents from 1960 and provides access globally.
2	Chemical Abstracts Service	1907	Columbus, Ohio, United States	It is a great Pathway to published research articles in the different journals of the world. It also covers virtual patent literature of chemistry, life sciences, and other scientific disciplines back to the beginning of the twentieth century.
3	BIOSIS	1926	Clarivate Analytics (Canada and Hong Kong)	This database provides researchers current information on life sciences available in the journals, conference proceedings, patents, books, review articles.
4	Biological Abstracts	1926	Clarivate Analytics (United States)	It is an indexing service (IS) integrated with the ISI Web of Knowledge. The researchers can search ISI Web of Knowledge resources in this database in different sub-areas of Biological Sciences simultaneously.
5	Ulrich's Periodicals directory	1932	ProQuest	It is a bibliographic database provides detail comprehensive information on serials published in the world. It covers almost all free and paid subjects.
6	EMBASE	1947	Elsevier (Netherlands)	It is a comprehensive database which provides access to the pharmacological and biomedical sciences. It provides above 18 million records from 7,000 journals.
7	Elsevier BIOBASE	1950	Elsevier	It is a bibliographic current awareness (BCA) database it covers biological research form over 1, 9000 journals throughout the world.
8	CABS	1954	Elsevier	It is a biological research bibliographic database provides access to the more than 1,700 journals in the medium of current awareness service. It adds 15,000 entries per month to the database It is very much helpful in providing literature search supporting services in research and development.
9	Current Contents	1960	Clarivate Analytics	It is a current awareness database provides services on tables of contents (ToC), bibliographic information, and abstract services from newly published scholarly journals.
10	Science Citation Index - Expanded (SCIE)	1964	Thomson Reuters	It is a product of Thomson Reuters covers scientific and technical journals including data analysis options.
11	Science Citation Index	1964	Clarivate Analytics (Canada and Hong Kong)	It provides bibliographic and citation information to the researchers, administrators, faculty members and students covering scientific and technical journals in 100 disciplines.
12	Online Computer Library Centre (OCLC)	1967	Dublin, Ohio, United States	It is a non-profit research organisation which provides computer library services for the public purposes. It reduces information cost providing world wide information. Surprisingly, it provides services to the 41,555 libraries in 112 countries of the world.
13	British Library	1973	United Kingdom	The collection of this library is the main attraction for all categories of users. It comprises of 150 million manuscripts, maps, newspapers, magazines, drawings, music scores, and patents simultaneously. This library provides document delivery service (DDS) both nationally and internationally.
14	CAB Abstracts	1973	CABI, United Kingdom	It provides instant access to the researchers over 5 million records in the field of applied life sciences.
15	EBSCO Publishing	1984	Ipswich, Massachusetts, United States	It is an integrated information service which includes reference databases, management, online journals, books, and linking services. This database is very much useful for the present libraries, schools, government as well as private institutions, health science institutions, corporations.
16	EBSCO Information Services	1984	Ipswich, Massachusetts, United States	This database is a compilation of titles and journals from other databases or publishers. The best example of related database is Medline and EconLit. The company provides full text services of the journals and its related fields.
17	Infotrieve	1987	Wilton, Connecticut, United States	It provides content management technology (CMT) and information services (IS) for the life sciences and its related sub-subjects including research and development.
18	PubMed	1996	National Library of Medicine, United States	It is maintained by US National Library of Medicine. It covers biomedical literature of life science linked to the MEDLINE database. It covers 16 million citations from Medline and other life-science journals back to the 1950s. It provides article services, abstract and reference services in the field of biomedical sciences.

Sl. No.	Indexing and Abstracting Databases	Year of Estd.	Developer/Service Provider	Key Features of Databases
19	Latindex	1997	Latin America	It is a bibliographical information system available freely. It was established as a network in 1997 with the help of 17 national resource centres. It gathers and disseminates relevant data and information on the Iberoamerican journals.
20	IngentaConnect	1998	Ingenta	It provides online services on academic and professional research. It covers more than 20 million articles from 30,000 print and online journals throughout the world. It is working with eight largest publishers in the world.
21	BioOne Abstracts and Indexes	1999	ProQuest	It provides peer-reviewed research collections to the users in the field of biological, ecological, and environmental sciences. It comprises over 82 highly impact factor Bioscience research journals from more than 66 publishers.
22	Crossref	1999	Lynnfield, Massachusetts, United States	It is a DOI link registration agency for scholarly and professional publications. It is operated through the cross-publisher citation linking system which allows researchers to link the cited content or article hypertext to the other publisher's platform.
23	PubMed Central	2000	United States National Library of Medicine (United States)	It is a digital archive of life sciences. It allows uploading the article in the archive if the article has completed six months in the online publication to PubMed Central.
24	Redalyc.org	2002	Universidad Autónoma del Estado de México, Mexico	This project is a bibliographic database and a digital library of open access journals. It helps numerous higher education institutions and information systems.
25	Directory of Open Access Journals (DOAJ)	2003	maintained by Infrastructure Services for Open Access (IS4OA)	It is an online open access directory indexing database which covers peer-reviewed journals like, history, religion, geography, language, literatures.
26	Google Scholar	2004	Google	It is the best way of scholarly literatures for peer-reviewed papers, theses, books, abstracts and articles. It is useful for professional societies, preprint repositories, universities and other scholarly organizations.
27	Scopus	2004	Elsevier	Scopus is published by the Elsevier which indexes journals like, science, technology, medicine, social sciences, and arts and humanities. It is considered as the largest abstract and citation database of research literature.
28	BIOSIS Citation Index	2006	Clarivate Analytics	It combines the indexed life science coverage like, Biological Abstracts (botany, zoology, and microbiology), Reports, Reviews, and Meetings and provides services to the clients.
29	Open DOAR	2006	UK (maintained by the University of Nottingham)	It is a UK-based website which is locally searchable and provides open access to the repositories.
30	ISI Web of Knowledge	2008	Thomson Reuters Corporation	The owner of this ISI Web of Knowledge is Clarivate Analytics. It is a research platform which provides access in the fields of sciences, social sciences, arts and humanities. It provides access to the international journals, open access resources, books, patents, proceedings, and web sites.
31	Global Health	1973	Global Health	It is a specialised bibliographic database for academic and research purposes. It provides access to the 1.2 million scientific records from 1973 till present. It adds 90,000 indexed and abstracted records per year which are available in different journals, books, conference proceedings and grey literatures.
32	Ovid	2006	U. S. National Library of Medicine (Producer), Wolters Kluwer	It is a branch of Wolters Kluwer which covers clinical medicine and pharmacology. This is a professional database provides relevant information to the students, research scholars, professionals for their research, discovery and improved patient care.

Source: Data Collected from their Own Websites

The above table 2 clearly shows that, out of 32 databases, most of the database service providers are from the United States of America. It again shows that, since from 1879 till the period of 2008, the services in providing articles and medical information through online databases after mid of the 19th century. Now-a-days, the applications of ICT have made the system more flexible and no time services to the need of the hours and academic research and development.

Open Access Electronic Indexing and Abstracting Databases

Open Access journals are the scholarly journals available to the readers through online without any barriers like, financial, legal or technical (https://en.wikipedia.org/wiki/Open_access_journal)⁶. The open access publishing division generally does not impose or demand any price such as subscription, licensing fees, and pay per view fees excluding the barriers like copyright and licence restrictions. But in some of the cases, it is cost associated with the publication, production charges, and some are financed by the institutions, learned society, and government information centre. The published articles are available in multi-disciplined subjects in lakh. A random study on journals on the citations indexes like, AHSCI, SCI and SSCI in 2013 resulted that, 88% of the journals are closed access and only 12% of the journals are open access. The following types of open access journals though by nature open access but have some differentiation in providing services.

- Gold Open Access (GOA) imposes some charges for publishing any article (<https://publishingsupport.iopscience.iop.org/questions/gold-open-access-journals/>)⁷ and to make it available freely for reading and reusing by the authors, institutions or the funding body or a third party if the gold open access allows licence.
- Green Open Access (GOA) refers to the self-archiving of an article in a non-commercial subject or institutional repository <https://publishingsupport.iopscience.iop.org/questions/what-is-green-open-access/>)⁸ usually after an embargo period.
- Hybrid Open Access (HOA) is a subscription-based journal. It allows authors to publish individual articles on payment basis (https://en.wikipedia.org/wiki/Open_access)⁹ considering as an article publication charge.

Merits and Demerits of Scopus and Web of Science

Scopus permits search by the federated search by affiliation, Zip code and institutional name. It covers more than 22,000 journals whereas more than 11,000 journals in case of web of science. The number of non-journal articles was low in Scopus before 1996 whereas the percentage has increased significantly than the web of science. Scopus is more versatile search tool where one can refine author's citation, author identification and track the citation result in total or in article wise. Scopus covers many things in scientific fields but it is poor in sociology, physics, astronomy and its allied subjects. Web of Science covers science, arts, humanities and a slight difference and strong overlap comparing to the Scopus. It has more options for institutional citation analysis.

CONCLUSION

In the concluding part, it can be stated that, indexing and abstracting services are more important for ready reference services. It is very much helpful to the users' of all disciplines and helps in providing extensive support for different domain areas. It helps the authors to submit their articles being choosy before submission. Scopus is generally widely accepted than the web of science taking to the present cost consideration. So it can be further said that, indexing is not only helpful to the students, teachers, researchers, but also it is much important to disseminate knowledge in one platform to all performers.

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