

## The epistemic effectiveness of online indexing services for research publications: An analysis

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### Abstract

Knowledge has become a commodity in recent times rather than a value of intrinsic worth due to the emergent cycle of knowledge production and consumption. There is also an increase in the growth of predatory publishing within the guise of scholarship to meet the contemporary demands of academic capitalism. In this context, indexing services play a vital role in knowledge management. This research article aims to qualitatively articulate the functions of indexing services and its relevance for research publications in today's marketized higher education scenario. The epistemic effectiveness of indexing services is analyzed to strongly assert its importance for the research community.

**Keywords:** knowledge, indexing services, functions, quality, research community, research publications

### Introduction

In general parlance, the term indexing refers to listing of the contents of a document <sup>[1]</sup>. Indexes are used everywhere from households to formal organizations as a guide for acquiring information. For example, the monthly bills of a household can be indexed based on date and purpose. In an organization, all paper documents can be indexed either chronologically or based on the subject matter of the documents. In this way, the time spent on information search and retrieval is minimized. The Merriam Webster Dictionary defines 'Indexing' as a *list (as of Biographical information or citations to a body of literature) arranged usually in alphabetical order of some specified datum (such as author, subject, or keyword)* <sup>[23]</sup>.

The concept of indexing is very much associated with the science of information gathering and retrieval. It is an important function of library management. The contents of the library are screened and analysed to describe its nature in an orderly fashion. This indicates indexing as a practice of library documentation for effective retrieval of information. Hence, the meaning of indexing denotes a systematically arranged list of contents pertaining to a body of literature furnished as different types of indexes. They are alphabetical indexes, author indexes, book indexes, citation indexes to name a few.

The indexes in a library comprises of general and specialized indexes. General indexes comprise of popular resources such as periodicals, magazines and newspapers whereas specialized indexes comprise of scholarly articles. The technique of indexing is the heart of information management in a library. The major scope of this paper is to understand the epistemic effectiveness of indexing services through an analysis of the functions of indexing services and its relevance for specialized research publications.

Indexing as a practice of documentation led to the development of indexing services for the 'cumulative good' of the research community and society at large. Indexing services act as quality standards for scholarly publishing. The quality parameters set by indexing services facilitates

effective retrieval of scholarly work within the distinct specialized areas of study. Using quality parameters, indexing services offer coverage to journals and its publications thereby increasing its readership.

### Key Events in the Development of Contemporary Indexing Services

In 1873, the Shepherd's Citation Index was introduced for legal information search of citations of the precedents used in the federal cases. It was started as an effective search tool pertaining to legal information of legal cases and not as a Legal subject index. The aftermath of the World War II created a strong humanitarian wave and fostered a deep sense of commitment to research in order to study new avenues of development and explore new dimensions of scientific growth and advancement <sup>[32]</sup>.

In the mid-1950s and early 1960s, the Welsh Medical Library Indexing Project introduced medical library indexes pioneered by Dr. Eugene Garfield who later came up with the bibliographic citation index. Today, bibliographic citation indexes enable researchers to conduct the review of literature in research study with precision and clarity <sup>[32]</sup>.

It is important to note that indexes go back to the period beyond the 17<sup>th</sup> century. The origin of indexing traces back to the emergence of printing in 1440 with its evolution experienced in significant phases characterized by the development of Biblical Concordances in 15<sup>th</sup> century to the emergence of well-defined bibliographic citation indexing services that is in existence today <sup>[34]</sup>.

Several indexing and abstracting services are developed for the purpose of research. However, an index and an abstract are very different. An index comprises of adequate bibliographic information whereas an abstract is a short summary of the original research publication. The scope of this paper focuses on the concept of indexing services only <sup>[36]</sup>.

Top Indexing services are Scopus, Google Scholar, Indian Citation Index, SCI- published by ISI as a part of Thomson

Reuters, Google Scholar, Cite Seer X, Clarivate, ProQuest, EBSCO Information Services, Directory of Open Access Journals (DOAJ) to name a few. Given below, are few examples of online indexing services.

### Online Indexing Services: Examples

- 1. Scopus:** This agency is curated from over 5000 publishers supporting the research needs of the research community. It has 1.4 billion cited references since 1970. It helps researchers to choose scholarly articles from their specialized disciplines with over 22,800 titles. Scopus provides a magnified view of the works of the authors thereby increasing the author's visibility.<sup>[24, 21]</sup>
- 2. Google Scholar:** Google Scholar is an online database of publishers of high-quality peer-reviewed works. It also gives the citation ranking for particular scholarly works<sup>[15, 16]</sup>.
- 3. Indian Citation Index:** The ICI is one of the pioneering scholarly databases in India with over 1000 scholarly publications<sup>[17]</sup>.
- 4. Web of Science Group:** It is an extensive database that optimizes search across journals indexed in Science Citation Index Expanded (SCIE), Social Sciences Citation Index (SSCI), Arts & Humanities Citation Index (AHCI), and Emerging Sources Citation Index (ESCI)<sup>[18]</sup>.
- 5. EBSCO Information Services:** It is a research database of scholarly research publications which is multi-disciplinary in nature with options for optimal academic search. It offers reliable peer-reviewed articles with customized preferences and citation assistance.<sup>[25]</sup>

### Functions of Indexing Services

#### 1. As a Digital Repository

Indexing services acts a digital storage of scholarly articles. Otherwise, it can also be called as an online database of publications.

#### 2. An Evaluative Tool

The quality parameters such as quality content, diversity of content, time-bound submissions, structured work, Citation impact are taken into consideration for indexation of journals and its articles.

#### 3. An Optimal Search Tool

Though indexing services are not search engines, it gives optimal results when searching for specialized scholarly articles. Hence, it plays a major function of an optimal search tool.

#### 4. A Comprehensive Coverage Space

Most of the indexing services offer maximum coverage of updated scholarly publishing. The redundant journal articles do not fit into these indexing services.

#### 5. As a Performance and Subject Retrieval Tool

As the competition is looming large in the academic industry, academic professionals' success is measured based on their quality performance in teaching and research. Publication of articles in indexed journals enhances the profile of the academics. Also, as indexing services are user-friendly and easily available online it offers organized retrieval of subject-specific information from the digital spaces.

### 6. As a Regulator

Indexing services filters the massive infiltration of fake scholarly content through a quality check. Though, increasingly predatory journal articles have begun penetrating the online spaces, indexing services play the role of a regulator in the sudden onset of inflating academic capitalism.

### Major Quality Parameters of Indexing Services

I present two major quality parameters of indexing services

- a. Impact Factor:** The impact factor of a journal is determined by the number of citations that the average articles in a journal acquires in a particular year.
- b. H-Index:** This is the quality measure of an author calculated by taking the number of publications for which the author has been cited for his work divided by the number of publications of the author.

### The Epistemic Effectiveness of Indexing Services-Analysis

The foundation of epistemic responsibility is associated with the condition of justification of knowledge. In the sense, making the knowledge available for the larger society to achieve societal benefit. Epistemic responsibility goes beyond dissemination of knowledge and embarks on the evaluation of the knowledge generated. (Chubb and Reed 3).

The functions of indexing services clearly reflect the core of epistemic responsibility by way of aiding quality researchers to project their work for the research or the academic community without any capitalist motives. The indexing services also act as a communicational tool and as an authority engaged in furnishing authentic information.

The researcher on the other hand becomes a recipient of the information from the indexing services by trusting the source of information as the authority. There is a mutual interplay or dynamics between indexing services and the research community as they are jointly involved in the search of knowledge. The epistemic responsibility here is a collective responsibility which makes the indexing services epistemically effective.

As the higher-education market dynamics is steadily taking off with profiteering motives in recent times, institutional arrangements and groups are gaining momentum through a struggle for majority positions in this 'power maze'. Several fake journals with illegal and incriminating practices have found their presence online. As knowledge production is now becoming a gamble of money and power due to stringent University Grants Commission's guidelines of mandatory publications for the award of a PhD degree in India, research scholars with resource divide, lack of research skills and lack of capacity-building are caught into a complicated network of 'academic publications pandemonium', 'academic status-quo dynamics' and 'academic capitalism'. The interplay of all the three has led to the growth of redundant, inconclusive, fabricated, over-reported bogus research publications. Knowledge generation for its epistemic value or for knowledge sake has shifted into knowledge production for achievement of commercial benefits making it a 'commodity'.

It is important to note that the logic of scrutiny for indexing journals and articles followed by indexing services makes it a form of a heuristic device to keep a check of the inflow of misinformation or fabricated content into the world of research. This determines the epistemic effectiveness of indexing services that operate with the principle of epistemic responsibility to regulate and organize scholarly publishing. However, it is very important to understand that the onus of epistemic responsibility is not associated with indexing services only. It is also associated with independent academics and researchers in the generation of quality research and dissemination of knowledge for knowledge sake. The importance of publication ethics is the key point that enhances the epistemic effectiveness of the multiple stake-holders such as indexing agencies, publishers and researchers. Journals should ensure standard principles of transparency in selection, evaluation and publication of research articles. These details should be reflected on the journal websites with clear emphasis on the nature of the target readership and copyright licensing information. Reviewers should be outside the journal's editorial board so as to ensure explicit accountability.<sup>[26]</sup>

The present problem of increasing predatory publications particularly from developing countries of the world has to be addressed. The indexing agencies to a larger extent have developed quality metric such as impact factor and citation index to weed out the disreputable publishers and publications. However, despite these measures bogus publishers and publications have managed to enter into the indexing services making it a very serious issue which has a larger potential to reduce the epistemic effectiveness of these indexing agencies. A futuristic organizational practice for indexing and abstracting will help in the prevention of the infiltration of predatory journals in the online indexing services. Academic institutions can embark on achieving high quality research potential by benchmarking their very own research potential each year against the measure achieved the previous years. A systematic research survey can be conducted to measure both qualitatively and quantitatively about the usage and items retrieved from online indexing services by the academics and researchers of institutions. This is a way of creating awareness to academics and researchers about the role played by online indexing agencies which will increase its epistemic effectiveness.

A Socialist model, public-private partnership, Governmental funding on higher education reform with specific focus on research publications, civil society engagement may be ways in which epistemic effectiveness of indexing services can be retained or improvised. The streamlining of indexing services at the international and national level with scope for regular appraisal will largely reduce the risk of misinformation overflow and mismanagement of data in knowledge work.

Hence, as a researcher I reiterate that the functions of indexing services are based on the principle of epistemic responsibility and constantly needs to be revisited thereby making the role of indexing services indispensable for the progress of research and its sustainability.

### Conclusion

To summarize, the concept of indexing and the development of indexing services has led to knowledge management and

formation of knowledge capital. A familiarity of the various types of indexing will help a researcher to search, sort, evaluate, access, read and publish one's work with professional diligence and precision. Indexing has also made information management systematic and objective. Indexing has streamlined the production and maintenance of information in a scientific manner.

It is also essential to note that the success of any indexing service depend on its form and content. In retrospect, indexing service has revolutionized the science of information management in all its entirety.

The sustainability of indexing services with dynamic guidelines to meet the demands of the changing society is very important for the promotion of ethical and quality research. The indexing service providers are edifying pillars for the progress of research.

Hence, the research community must become fully aware of the functional role played by the indexing services in facilitating quality research. As an institutional structure, indexing services ensure that the society is collectively benefitted by increasing its accessibility and visibility online for a wider audience. In this context, the duty of the researcher is to act as an individual agency congruent to the goals of the indexing agencies by promoting ethical and quality research. Epistemic effectiveness of the online indexing services in the truest sense is realized by the organized collective epistemic responsibility of both the researchers and indexing services.

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