

A combination of several known concepts - Research Publication

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Abstract:

The article aims at providing clarity on some selected concepts such as Indexing that includes the history of Indexing, it's beginning and how it all started, its concept as well as its practice. Indexing Agencies and their evaluation policies have been discussed where a few negatives and common features are pointed out. Indexing Parameters and their methods of calculation. The indexing parameters comes with advantages and disadvantages which may or may not be agreeable to some portion of people. A new parameter is also proposed and its potentiality is discussed. Review Methods is also been discussed along with the companies that were formed by collaborations. Last but not the least, the concept of Open Journals and repositories is analyzed

Keywords

Indexing; Indexing Agencies; Indexing parameters; Review Methods; Open Access.

1. Introduction

Over the years, there has been a tremendous change in the field of publications which again varies by its definition over time.

The idea of Indexing is that it makes the long tasks much easier. Indexing is a collection of words or a set of warnings available. It is an indicator and generally points out to something that one is looking for. The very prominent examples of indexing would be catalog, menu, sign board, hyperlinks on Wikipedia and keywords in a research article. A list showing which page exactly the required information is present or a collection of information stored on a computer or even on a set of cards in some defined order may be the examples of indexing and how indexing is done. Indexing makes the tasks easier for the ones looking for a particular information by providing an easy way to search for the desired words. The history of the concept indexing begins when people used to transfer information through parchments, sheets and on clothes. The information was completely on handwritten material and was also very subjective. The major disadvantage was that there were times when the letters may get swapped

and give different meanings altogether. This period was known as the Pre-Printing-era. Modern printing started around 1440 and print book indexes around 1460's. Then came the Bible Concordance around 1544 where that shows the places in the text of a book where a word could be found and the example for it will be the table. Concordance are a list of occurrence of a word or a phrase. The famous Concordance was the work of Alexander Cruden. It was first published in 1738, it reached several editions in his own lifetime and has been re-edited, abridged and reprinted repeatedly. (Counselors et al, 2019). Samuel Johnson in 1755 wrote "A dictionary of the English language", which was the first index to the English language". During the period of Elizabeth Era, Indexing was started by the monks in the countries like Germany and the United States of America. William Fredrick Poole, at the age of 27 born in 1921 started a company for the purpose of Indexing. In 1848, while still a student, published his own 154-page index to periodical literature and was the precursor to modern indexing. Paul Marie Ghislain Otlet (23 August 1868 – 10 December 1944) was a Belgian author, entrepreneur, visionary, lawyer and peace activist, he is one of several people who have been considered the father of information science, a field that he called documentation. (Wikipedia). He wrote, "a system by which knowledge would be projected on one's individual screen so that in his armchair, anyone would be able to contemplate the whole creation or particular parts of it". Indexing was considered to be one of the best professions for the educated people in those days. The Index Society in London in 1877, aimed at creating 'a general index of universal literature'. The very quote below gives an idea about closed publications.

"My intellect is my property,
What I produce is for me".

The article mainly focuses on disseminating the various concepts related to publishing and journal publications. The article contains the foundations of a lot of concepts together and provides information from various sources through comparison and views.

2. Methodology

A descriptive methodology as well as a comparative study is used in this article to compare

different sorts of concepts and their advantages as well as disadvantages

3. Concepts

Citation Indexing

By the references they cite, authors make explicit linkages between their current research and prior work stored in the vast archive of the scientific literature. Citations symbolize the concepts or scientific ideas authors discuss. These conceptual associations by citation have been described by Robert K. Merton, Manfred Kochen, and other scholars as intellectual transactions, formal acknowledgments of "intellectual debt" to earlier authors. Explicit references imply that an author has found a particular published theory, method, or datum useful in some way. The concept of citation indexing is that a unique and innovative tool is found for navigating the research literature. ("The Concept of Citation Indexing", 2019). The types of indexing can be classified into several different types, list, listing, register, catalogue, record, archive, inventory, dictionary, directory. (JV Kureethara, 2019). A priest named Fr. Roberto busa was known as the Father of Computational Linguistics met the founder of the IBM Corporation Thomas Watson in 1949 and proposed an idea for indexing. Even with the help of machines, the amount of work and the time that was taken was enormous which was about 30 years during which 11,000,000 cards were used where one card was used for every word that was analysed and there were more than 20,000,000 lines of text, around 70,000 pages that comprises of 56 books involving 30 years of work.

Purpose and benefits of citations

The main purpose of citations would mainly be that it enables faster learning, acknowledging faster than the usual which takes quite a lot of time, it also shows the prominence of persons and the subjects when the number of citations are concerned. It also develops the interconnections between people relating to the field of their work.

It was once said by Newton, "If I have seen further it is by standing on the shoulders of giants", which shows the importance of citing someone else's work. The benefits of citations is that when one's work is being cited it shows that the author has met a specific quality criteria. It can also be regarded as a matter of pride.

Indexing Agencies

To determine the evaluation policy of the indexing agencies. Every indexing agency has its own unique evaluation criteria based on which the journals are indexed. In this work, the unique criteria of the journals as well as the common features that the indexing agencies require.

Evaluation policy of indexing agencies has played a very prominent role in the indexing of a particular journal. It provides and explains the criteria for a journal to be indexed by their agency and have a good reputation. Each indexing agency has its own way of indexing and the following explains how each agency indexes its journals.

Evaluation Policy of Indexing Agencies

The following Indexing agencies are taken into consideration to show how each Indexing Agency evaluates and indexes the journals.

- Scopus

The journals that are accepted for the review will be evaluated based on the following criteria mentioned. The journal has to necessarily have a convincing editorial policy, needs to be diverse in the geographical distribution of the editors as well as the authors. The content in the journal needs to be a contribution in the academic field, need to have clarity on the abstracts and articles need to be readable. The quality and conformity needs to meet the scope of the journal. There should be no delays or interruptions in the publications schedule in the journal. The online availability of the journal content is also a must. (Scopus, 2019)

- Ulrich's periodicals directory

The main aim that Ulrich's periodicals directory strives for is for the maximum title coverage of publications that meets the definition of a serial therefore the titles whose publishers do not provide adequate information for the identification or any updation has a very high probability that it will be excluded from the Ulrich's periodicals directory. (Ulrich's periodicals directory, 2019)

- ISI Web of Knowledge

The journals submitted need to have a solid evidence of peer review. The publications are expected to adhere to clear and transparent peer review and to refrain from any kind of unethical practices. The publications need to refrain from any misinterpreting the names or qualifications or any involvement of editorial board members. Displaying clear and transparent statements regarding business models is very important. It mainly aims to deepen regional and domain coverage. (ISI Web of Knowledge, 2019)

- Science Citation Index

In this indexing agency, the major tool for journal evaluation so that it can be indexed. This means that the journals will be ranked by their frequency of

publishing and the impact of their citations. (Science Citation Index, 2019)

- OCLC

OCLC which stands for Online Computer Library Center promotes successful collective action and self governing behaviours. To support a spirit of trust and reciprocity as well as a commitment to continual policy evolution as conditions in the information ecosystem change. The rights of OCLC members is to use bibliographic data they have extracted, to transfer and make available data they have extracted from the WorldCat database to non-members. The journals needs to provide a stable policy foundation and framework that will help collaboration in organizations. (OCLC, 2019)

- Google Scholar

In order to be indexed under this agency, it requires multiple versions of work that are grouped to improve its ranking. The google users must see at least the complete abstract of the publication or the articles or at least the full page. The publishers need to preserve their control over access to their content and cache articles that do not have access restrictions. This indexing agency uses automated software to identify the bibliographic data as well as the references , the incorrect identification of bibliographic data will lead to poor indexing of the site. (Google Scholar, 2019)

- Crossref

The indexing agency stresses quite a lot upon the similarity check and provides the similarity check service for the members to help the editors as well as the journals to ensure that the research work is original. The peer review details is important in order to be indexed. Whenever a supplementary work has been added to the research it is important to bring in notice. (Crossref, 2019)

- Biological Abstracts

In this indexing agency, there are four conditions that are to be met for qualifying for the authorship. There must be substantial contributions to conception and design and interpretation of the data. There needs to be drafting for the article and revising is several times for important intellectual content. The questions that are related to the accuracy of any part of the work need to be investigated properly and be resolved. (Biological Abstracts, 2019)

- BIOSIS

In this agency, the journal is evaluated for coverage for the major three aspects, which are subject, editorial content and publication attributes and geographic origin and scope. Publications must be peer-reviewed, and the editors and editorial boards must be representative of the publication's subject area. The journal's must also display diversity of institutional affiliation and geographic base. It is important that the source is regular in its publication schedule and that its contents are timely. (BIOSIS, 2019)

- MIAR

MIAR that stands for Information Matrix for the Analysis of Journals is a support tool for those journals who have to perform assessment work and the articles in the journals need to be published only after a thorough evaluation ("MIAR, 2019.)

- ABDC

In this indexing agency the major criterion under which a journal is indexed is that the journal should have reached the necessary quality threshold level, externally validated journal ranking lists, journal citation metrics and expert peer review. The journals need to adhere to general scholarly principles, including scholarly peer review. ("Current ABDC Journal Quality List, 2019)

- Index Copernicus

The important indexation requirements by this particular agency is to have articles that present results of original empirical, theoretical and analytical work. It has the minimum number of papers that need to be published that mainly depends on the publishing frequency of a particular journal. The publication needs to have an active and needs to be an up-to-date website as well as a good review procedure of the articles. (Index Copernicus, 2019)

- Bielefeld Academic Search Engine

In this indexing agency, they have the golden rules to optimize the OAI interface which in turn provides indexing of the journal. The major golden rules in order to be indexed by this agency is to have comprehensive metadata, providing access information, providing information concerning the license, the document language and the publication date is very necessary. (Bielefeld Academic Search Engine, 2019)

Common features of the requirements of the indexing agencies mentioned above

- The indexing agencies hold a few number of common features which are listed below:

- Publications must be peer-reviewed
- It is important that the source is regular in its publication schedule and that its contents are timely
- Stresses quite a lot upon the similarity check and good ethical research
- Incorrect identification of bibliographic data will lead to poor indexing of the journal
- The publications are expected to adhere to clear and transparent peer review and to refrain from any kind of unethical practices
- The quality needs to meet the scope of the journal.

Indexing Parameters

Indexing Parameters is a widely known measure of prominence of an author, article, journal which usually considers the number of citations. Indexing parameters has played a prominent role in indexing journals, individuals or even a research community nevertheless it has also created a sort of ambiguity among the people. How the indexing parameters are calculated for Impact factor, h index and citespace and the advantages of the indexing parameters as well as disadvantages which are listed below.

Calculation of the indexing parameters:

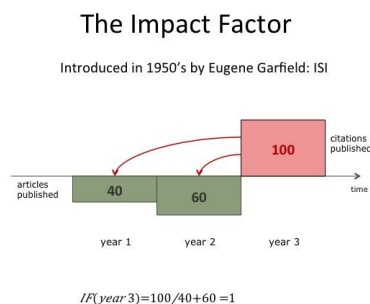
1. Impact factor

Impact factor is a non negative number that can be zero as well. Impact factor is a number given to the journals that are under Web of Science. It is calculated annually and appears in the Journal Citation Report.

How is the impact factor calculated?

Suppose D is the number of articles in the year 1 and 2 in a particular journal and N is the number of citations to D in year 3. Then the impact factor is given as,

$IF = N/D$, which is a non negative number.



(Curtrice,2014)

The advantages and disadvantages of Impact Factor

Impact factor gives a good estimate about the quality of the journal. To have a good impact factor means that the journals have satisfied some of the criteria enhancing their quality . Impact factor is a quasi-qualitative indicator, which provides a measurement of the prestige . It also provides international visibility of journals. It is also useful since it gives a good recognition to the journals and helps in choosing the journals rightly. Disadvantages include, Impact factor is limited to the journals that are indexed by Web of Science . If the articles in a particular journal are not published for quite some time then there are chances that it will be removed entirely and the impact factor becomes zero immediately. The value of the impact factor is affected by different factors such as subject area, type of documents or length of the citation measurement window.. Not everybody can view the impact factor of the journals as the company that runs it is licensed. It has a great dominance from the medical journals. (PILOT,2019)

2. h-index

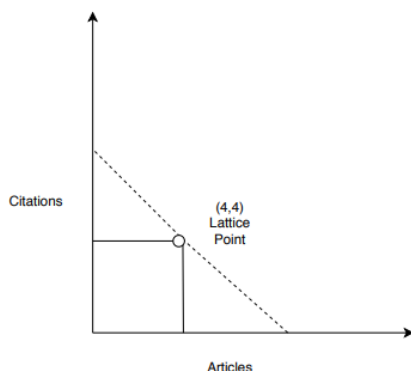
h index is a number that is purely non negative including 0. h index can be calculated for people, institutions, colleges and is not limited to journals. The calculation is very flexible and anybody can calculate. It was proposed by Jorge E.Hirsh in 2005. How is h index calculated?. h index is the maximum h such that h articles are cited at least h times each. For example, consider the data given below.It is seen that the group of 10 articles,9 articles, 8 articles , 7 articles and 6 articles are cited once, this means that the current h index equals 1. Now all the other articles are cited at least 4 times which implies that the h index is 4.

Table 1 - Example to show how h-index can be calculated

Number of Articles	Number of Citations
1 Article	10 citations
2 Articles	8 citations
3 Articles	6 citations
4 Articles	6 citations
5 Articles	4 citations
6 Articles	1 citation

7 Articles	1 citation
8 Articles	1 citation
9 Articles	1 citation
10 Articles	1 citation

Graphically this can be represented as,



Advantages and disadvantages of h-index

Calculation of h-index can be done by any individual as the calculation is simple and not restricted. It combines a measure of quantity publications and impact. It allows us to characterize the scientific output of a researcher with objectivity, and therefore may play an important role when making decisions about promotions, fund allocation and awarding prizes. It performs better than other single-number criteria commonly used to evaluate the scientific output of a researcher. It is easy to understand. Disadvantages include that there are chances where the research papers are not examined properly and it can lead to a lot of self citation of the work leading a greater h-index but no good quality. h-index should not be used to compare scientists from different disciplines as all the disciplines are very different from one another. Highly cited papers are important for the determination of the h-index, but once they are selected the number of citations that they still receive becomes unimportant. Since the h-index is easy to obtain, we tend to start relying only on it for the assessment of the researchers. A single indicator should not assess the research performance. On comparing, h-index does not penalise the number of papers but impact factor does. Impact factor basically generates more citations when the number of papers published increases. But this does not seem ethical as the contribution of a journal should not be in terms of the number of citations rather in terms of its quality and readership. Restriction in this case can ensure

that the articles are of good standards and quality. (Mingers et al.,2012)

3. CiteScore

Citescore is a metric that calculates the performance of journals that are taken from Scopus. It considers the journal data from the last 3 years and then calculates during the fourth year.

ie; Citescore of journal X in the year Y= (Number of citations in the year)/(Number of articles in Y-1,Y-2,Y-3)

Advantages and disadvantages of Citescore

Advantages of Citescore include : It has a good range of Journals. Through the CiteScore Tracker, it is possible to check citation rates on a monthly basis. Access to CiteScore metrics is free of charge. Comprises of peer-reviewed literature from more than 5,000 publishers. The algorithm to calculate the CiteScore is available and there is no hidden calculation and the disadvantages include: Uses journals only from Scopus. Due to the vast quantity of journals there are chances that it may dilute the quality of its outcomes. The journals may allow self citations. CiteScore metrics favor the journals that fall under the Elsevier. CiteScore cannot modify the data published until the next publication, even when an error is identified.

A survey was conducted to check the awareness among the teachers of university in India. The survey was conducted to check the awareness regarding dome concepts that is related to research. The survey was conducted and its shows that the research awareness must be improved. (Joseph Varghese Kureethara,,2019)

Proposing a new parameter

The best indexing parameter would be an index that gives the overall measure of published papers based on their at most quality and not their specific domains so that no journal accepts papers that were just accepted to meet some required criteria as well as based on the measure of the number of papers that have been cited in the article and well referred since it also shows how much work has gone through in the research. It should be a very generalized parameter and not limited to a certain journal.

Reviewing methods

Henry Oldenburg, the first member of the Royal Society and the founding editor of Philosophical Transactions of the Royal Society at the Royal Society of London. There are mainly two types of review which are: Pre-Publication review and Post-

Publication review. Pre-Publication review is the review that takes place before the publication and consists of two broadly used peer reviews; Closed peer review and Open peer review . Closed peer review is a review type where reviewers identities may or may not be disclosed pertaining to the type of review. There are three types under the closed peer review process which are: Single blind process , in this review process the reviewer(s) know who the author(s) is but the author(s) does not know who the reviewer(s) is. As in all the review processes single blind process also has its own pros and cons. Pros may include only to the already reputed authors since their work is everywhere recognised there may be chance where they do not have to go through the complete process of detecting mistakes. And the cons include that there may be cultural or religion biasedness. In some cases there are even chances for professional jealousy. Then comes the Double blind process wherein the reviewer(s) as well as the author(s) do not know each other. In the double blind review process, there are more pros than the cons since this process will not include any sort of biasedness and the journals that carry out this process accept only anonymous manuscript. Then there is another process which is the Triple blind process wherein the handling editor , reviewer(s) and author(s) are anonymous to each other. This review process has the same pros as that of the double blind process. Under Pre-Publication process we have the other type of review which is the Open peer review. In contrast to closed peer review, in the open peer review process the reviewer(s) and the author(s) get informed about each other with their complete details. The cons about this review process may include the fear of review at times from both the parties involved. In general the advantages of peer review is establishing and disseminating knowledge through a strict review process that mainly includes people with strong backgrounds in their respective fields therefore not letting any false information slide in the process , it also is a great way of providing valuable and necessary feedback for the improvement of the research and disadvantages of peer review will definitely have to be the fact of protecting established opinions and ideas which in turn does not pave the way for new and innovative ideas. Post-Publication review is the review that takes place after the formal peer-review process involved in publications. This process usually takes place on platforms like blogs, microblogs and through comments on these platforms.

Closed publications

When people acknowledged the fact that selling articles and books and other various things that disseminate knowledge, then selling these became a sort of business even if the ones selling them have no knowledge of what it comprises of. And the ones who did not charge money for this, started charging

money as the total expense was getting higher and higher and hence the concept of closed publications took place.

Table 2: A few examples of the publishing companies that were mainly formed by collaboration

Names of publishing companies	Years when they were individually formed
Reed - Elsevier	1895 - 1880
Springer - Verlag	1842
Wiley - Blackwell	1807 - 1922
Taylor - Fancis group	1852 - 1798
SAGE	1965 - 1843

Closed journals are various types and a few of them are, Subscription based, Site Licenses, Pay per view charges. The idea of closed journals is not a very ethical as the knowledge a person would get from accessing the journals is purely academic based and it would not be ethical to just charge the students, scholars or whoever trying to access it with huge sum of money which not everybody is able to afford especially not the students. And the pay per view charges concept is really very absurd. Due to the issue of not being able to access, some of the movements that were started by individuals, scholars and groups that are: The Scholarly Publishing and Academic Resources Coalition (SPARC) - 1998, The Open Access Scholarly Publishers Association (OASPA) - 2008, Copyleft Movement - 1976, Creative Commons - 2001. All the above mentioned movements have a basic foundation rule which is to enable people to share knowledge as well as receive knowledge without having to go through a lot of financial trouble keeping in mind a few certain rules and rights.

Open Access Publications is one the best initiative that was ever taken in the field of publishing. Open Access publications are the types of publications through which the outcomes that come from research are disseminated online, free of cost as well as free of any other barriers which also removes a lot of other restrictions on its use as well as reuse. (Open access publishing, Wikipedia). Open access journals opt different kinds of models mainly for the purpose of summarizing the conditions and to give a very general picture of how the rights can be accessed by the authors. Mentioned are some of the models that open access journals. Gold; In this particular model, the articles are peer-reviewed which are selected under some standards and then are formally published and do not have any kind of subscriptions nor any pay walls. The Gold model has other two sub

models which are Pure Gold and Hybrid Gold where only pre-print can be circulated and the journals are freely available under more permissive license. In Green model it is seen that a version of the article is also present somewhere other than the publisher's website where the final copy of the article is hosted. In the diamond model, the journals do not require any processing charges to the authors. The model is also called as Platinum. (Open access, 2018). The above models show that they have been created for providing the complete benefits to the authors as well as those who want to access the publications and providing a lot of freedom with very few restrictions. Scholars and students and whosoever is need of accessing to the open access journals can also access the repositories which are mentioned out of the many other repositories: Directory of Open Access Journals (DOAJ). In this repository, scholars can come across a number of journals which are precisely 13,626 and 10.672 searchable at article level from around 131 countries , 4,184,516 articles can be found. Another repository is the Cornell University. The repository provides open access to 1,575,033 e-prints in various disciplines in Science.

Indicating the future

For future suggestions, work can be carried out regarding the journal databases as well as the processing charges can be discussed. And why processing fee is really required and is it very ethical to charge money when all that is happening is for the development and disseminating knowledge for the intellectual growth as well as disciplinary knowledge. Should knowledge sharing looked upon from a business perspective?

Conclusion

In this paper, the main criterion for the particular indexing agency to index its journals has been done. It clearly shows that each of the agency has got its own evaluation policies, though there also exists some of the common features among the indexing agencies. The main focus of peer review is to establish and disseminate knowledge through a strict review process. In this paper, the main advantages as well as the disadvantages of Indexing parameters and Review methods were discussed wherein the disadvantages and the advantages are both equally acceptable.

4. Acknowledgements

Author would like to thank Christ (Deemed to be University) for giving an opportunity to work on this project.

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