RESEARCH ARTICLE

A COMPARATIVE STUDY ON THE ASPECTS OF INDEXING ASSOCIATED WITH JOURNALS.

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Manuscript Info	*Abstract*
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Introduction:-

Technology has changed throughout the centuries and have created various perspectives of how basic writing and reading is taught to us. This has indirectly led mankind to adapt to new concepts that are churned out every day. Over the years, such process has changed the way we read and write. As we come to terms on facing a new era in technology and development, and as the "World of cyber culture" (Levinson and Ember, 1996) develops, the progress of literacy with regard to technology has changed for students at the University.

As a student at the university, much time is spent on collecting and researching data. It also means that many would spend countless hours rampaging through books at the library in order to find relevant material for their research (Tyler, 2012). In today's world with available technology in our fingertips, online access to library to "indexes and databases" provide a bigger opportunity to students who are able to find a plethora of relevant articles and journals in a matter of seconds – all in the comfort of their surroundings (Farillo, 2017). This study is based on the various indexing methods that are associated to researching journals using databases such as "Scopus, Web of Science, and Google Scholar"(Lukman et al., 2018).

Indexing
The concept of indexing begins with the term index which can be described as a "systematic arrangement of entries designed to enable users to locate information in a document" (Superio, 2012). It is also explained as "an alphabetically arranged list of headings consisting of the personal names, places, and subjects treated in a written work, with page numbers to refer the reader to the point in the text at which information pertaining to the heading is found"(Reitz, 2004). There are various methods by with volume works are described. They are single and multi-volume works. In reference to single-volume works, indexes tend to appear at the end. Whereas, with regard to the multi – volume works, they can be found at the end of the last volume. In large "multivolume reference works", indexes available are present in the last volume that is entirely dedicated towards this purpose.

History and concepts of Indexing
The concept of indexing is one of the major aspects in Research Publication. The idea of Indexing can be explained in plain words such as pointing out to a simple collection of information that is at times available in our subconscious mind. It is also an indicator, a signboard of sorts, that specifies or point towards a particular topic.

Indexing is basically a list that shows, the page number, subject, name etc. In terms of digitisation, It is a collection of information stored on a computer or a set of cards, in alphabetical order. The table of contents include, the subject, phrases, persons, concepts, laws and logic. Indexing assigns description and other kinds of access points to

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documents. The first found form of citation index was in the Hebrew religious Literature, that was in the 12th century. A citation index is a kind of bibliographic database, that is an index of citation between publications, that allows the users to establish the later documents and cite the earlier ones.

Indexing Journals
Indexing a journal brings a larger visibility with a wider use and helps increasing the acceptability of a journal, hence indexing a journal is an important aspect for every Journal. Furthermore, Indexing Journals are considered to have much higher quality than the non-indexing ones. Indexing a journal had various benefits:
1. The journal that is indexed has much better visibility.
2. The impact factors for the journal increases.
3. The journals importance and authority get improved.
4. The quality of the papers from the authors received for publication is good enough.

Basic journal indexing procedure: Most of the journal indexing agencies have a procedure and certain rules and regulations to index a journal.
1. The journals must have an e-IISN and P-IISN.
2. The journals must have at least issues or at latest 1-3 years old.
3. The journals must have at least 60% foreign members in the editorial board.

In an article by Waldegrave, (2019), Google Scholar is Google's specialised search engine that allows searches across scholarly literature including journals, articles, thesis, abstracts etc from academic publishers, professional societies online repositories and universities etc.

Google Scholar, unlike Google, does not index everything that is accessible on the web. Instead, it seeks to index most of the content from legitimized research websites. Some of the basic necessities to index a journal on Google Scholar are:
1. Check the HTML on PDF files formats just to make sure that the text is searchable.
2. Configure your website to export the bibliographic data in HTML mega tags.
3. Make sure that you have a browser interface that can be crawled by Google's robots.

According to Scopus,(2019), **Scopus**, is Elsevier's abstract and citation database launched in 2004. Scopus covers nearly 36,377 titles from approx. 11,678 publishers, of which 34,346 are peer-reviewed journals in top level subject fields like, life sciences, social sciences, physical sciences, health sciences. All journals covered in Scopus databases, regardless of who they are published under, are reviewed each year to ensure high quality standards are maintained. The Scopus selection criteria is:
1. Peer review
2. English abstracts
3. Regular publication
4. References in Roman script
5. Publication ethics statement

The **Index Copernicus International** master list is an international indexing database of scientific journals within of which submitted periodicals have been evaluated for almost 20 years. The condition of indexation is the multidimensional evaluation which is based on over 100 criteria. The indexation requirements for ICI are:
1. Scientific character
2. Minimum number of published research papers
3. Current ISSN number
4. Scientific journal published the whole evaluated year
5. Active and up to date website
6. Published review procedure of research papers

Indexing Parameters
Over the years, there has always been an issue of the best site to publish journals and the cost at which its done. There are major factors relating to the various journal publishing sites such as Google Scholar, Web of science and SCOPUS. Methods and ideologies vary in the usage of these sites considering the parameters used for purpose of

indexing. The impact factor is the measure of the frequency, with which a typical article in each journal is cited. There are various advantages and disadvantages to these reviews. Few of them are listed below.

Advantages:
1. The impact factor is an objective measure.
2. As mentioned previously, the method through which the impact factor is calculated can be understood easily.
3. It is of great help to researchers as well as librarians, as it provides a tool to manage the library journal collections.
4. It plays a very important role in the process of academic evaluation.
5. They are useful when one is trying to find an objective measure of quality.

Disadvantages:
1. Prices are expensive to access the databases.
2. The articles that are longer are more often cited.
3. Plenty of errors in the citations.
4. Most of the journals that are not much available to the reader will never be able to achieve a higher impact factor, no matter how good the quality might be.
5. The journals that are not in English language, face language barriers.

Web of science
H index
The H index also known as Hirsch index, "developed by J.E. Hirsch and published in Proceedings of the National Academy of Sciences of the United States of America 102 (46): 16569-16572 November 15 2005". The web of science plays an important role in measuring the impact more of a particular scientist rather than that of a journal. The index is based on the fact that the publication of journals and articles are shown in the descending order of their citation.

With each journal publishing method, they have their own set of advantages and disadvantages. A few of the advantages are listed below

Advantages:
1. It can be applied to any set of papers.
2. The indicator combines citation impact with publication activity measures.
3. It measures not only single peaks, but even durable performance.
4. Since the H index doesn't charge by adding the uncited papers, so any document can be included.

Disadvantages:
1. Since the publication output and the observed citation rates would be relatively low, the new comers are at a disadvantage.
2. It kind of fails where fair and good performance assessing is required.
3. Since the H index doesn't exceed its number of publications, the highly cited papers are at disadvantage.
4. It is unable to find the appropriate reference standards for comparison, even in the same subject field.

There are also methods like manual citation in the web of science that is used to cite journals. According to an article by Clarivate Analytics (2019), it explains that, "Incorrect citations and non-source citations would not be included in the Citation Report counts and the H index, because they will not have been linked to a specific source item in the set of papers being analysed."

Index
The i10 index is an Index that was created by Google Scholar. It helps provide the number of publications that have a minimum of at least 10 citations. Like the h index, i10 index also has its own advantages and disadvantages. Some of the advantages are:

Advantages:
1. It is the simplest of all.
2. Easy enough to calculate.

3. It is easy and free to access just by using the my citations feature on Google scholar.

Disadvantage:
It is used only in Google Scholar.

Comparison of Scopus and Web of science
There are various features between the Scopus and Web of Science. With regard to Scopus, it claims to be "one of the largest abstracts and citation database of research literature and quality web sources. This claim has been challenged"(Jacsó, 2011). There are also technical and numerical fact that show the importance of Scopus. It consists of 47 million records, with over 70% abstracts. It also contains a whopping number of more than 19,500 titles from over 5,000 publishers worldwide. These facts go on to include over 4.9 million conference proceedings, and an approximate 1,200 Open Access journals available to the world. Certain facts include a provision of 100% coverages on Medline. Other facts include records of over 20 million dating back to the year 1996 with references. There are more that date back further as far as 1896. These records are an important source of information that is available to all. These searches conducted yielded results of over 386 million scientific web pages. Importance is given to not jus random publishers but also patented publishers. There are almost 22 million patent records from 5 patent offices.

Scopus also provides a number of links to various full text articles and a number of library resources. It also comes with innovative tools that help with research with the most accurate and relevant material. This is an important part of research. Along with sites like research gate, Scopus also provides alerts to match new articles relevant to the research conducted.

"Scopus covers 250 million quality web sources, including 22 million patents. Searches in Scopus incorporate searches of scientific web pages through Scirus, and include author homepages, university sites and resources such as preprint servers and OAI compliant resources." (Ahmad, 2013)

With regard to the Web of Science, the library is updated with approximately 25,000 articles and about 700,000 citation references are added every week. This is an impressive number an provides a much wider scope compared to Scopus. The site also cover almost 12,311+ journals from 256 categories and 110,000 proceedings from conferences, symposia, seminars, colloquia worldwide. Compared to Scopus, they have a lesser number. Their library of Journal dates back to the 1900, with a cover-to-cover indexing, cited reference and chemical structure searches. Since the site Web of Science is more detail in the field of Science, an estimated number of journal descriptions is given. The field of Science comprises of almost 7100 international journals and are the most cited book category, with a range of total of 170 categories dating back to the 1900's. In the field of Social Sciences, there are about 1,750 international journals and highly cited book series in about 50 subject. These book series dates back to the year 1954. In the field of Arts & Humanities, there are 1,200 international journals and highly cited book series in 25 categories dating back to 1975. Overall, The complete files put together dates back to 1945 and have an impressive 37 million records that consist of cited reference and chemical structure searches. They are also provided with search engines and filters to identify authors, and analyse the capabilities of the site. Overall, Web of Science provides very unique search methods and cited searching. It is also user friendly which allows users to navigate forward and backward throughout the literature, and search all disciplines and time periods. Users can also navigate to print and electronic collections using institutional link-resolvers. Also, Web of Science is searchable with complete bibliographic data, cited reference data and navigation and links to full text (Ahmad, 2013).

Review methods:-
Review methods are nothing but a combination of methods by which the author approaches the subject. There are various review methods in research. They include Single blind, double blind and Triple blind. These research methods portray the collective authors works.

Single blind review
According to Salkind (2010), Single blind study can be explained as study in which the participant are intentionally kept ignorant of anything relevant to the study. They are kept in the dark about information regarding any other groups that are participating nor the kind of experiment that is to be conducted and the only person who is aware about this information is the person conducting the experiment. These studies are conducted only if the participants

group information is identified. Identified information such as these can end up being bias. Hence in such conditions it is safer if the participant are kept in the dark and are unaware of the situation and other test conditions.

Double blind review
A double-blind study procedure is the one in which people who conduct experiments and participants are not aware of the important aspects of a study. These studies include "hypotheses, expectations, or, most important, the assignment of participants to experimental groups." Salkind (2010). The participants of these studies are reviewed closely with a element of randomization. This study unlike the single blind where only one group is unaware of the test conditions and the relevant material. Whereas, in this study, both groups are unaware of the test conditions.

Triple blind review
According to Frey (2018), a triple blind study can be explained as the study in which," participants, researchers, and analysts are unaware of whether the participant received the treatment or the placebo in a random assignment trial. Although a double-blind design leaves only the participants and researchers unaware of the treatment "

Citation study
There are various types of citation studies. They include studies like Scientometrics, Bibliometrics, Eigen factor score, M index and G index. With regard to Scientometric, according to John and Leydesdorff (2016), it can be explained as a "study of the quantitative aspects of the process of science as a communication system." The study not only involves the in-depth study in science, but also plays a major role in analysing the various citation with regard to academic literature. They also play a major role in the evaluation of the research performance. Their factors impact "journal metrics, visualising and mapping science, evaluation and policy, and future developments."(John and Leydesdorff 2016).

Bibliometrics can be explained as "The statistical analysis of books, articles, or other publications... to measure the "output" of individuals/research teams, institutions, and countries, to identify national and international networks, and to map the development of new (multi-disciplinary) fields of science and technology."(Elder, 2019)

Conclusion:-
There are various review methods, indexing methods and citation methods that are used in the field of research. Despite the disadvantages that is mentioned, the positive aspect is still beneficial in every way to conduct any research. There are more than a million journals an articles that are available to us, and methods such as indexing only makes all of the above research study possible. In conclusion, these sites such as SCOPUS and Web of Science will only get better in the coming years with a million more journals to be published and fields to be explored.

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