

# Research Methods for Citation Analysis of IJTK

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**Abstract :** This paper is about the research methods which we have followed in the Citation Analysis of the IJTK journal and the main of the three methods are Web of Science ,Scopus and Google Scholar , this paper discusses the concepts of the citation analysis in reference of the three methods and their strengths and weaknesses and the use of methods in the analysis of IJTK..

**IndexTerms – IJTK, Citation Analysis. Google Scholar, Scopus, Web of Science.**

## I. INTRODUCTION

Citation analysis is a method of estimating the relative significance or impact of a writer, an article or a distribution by checking the occasions that writer, article, or distribution has been referred to by different works. [1] Citation analysis might be led for following purposes:

- To build up the impact that a specific work has had by distinguishing which different creators put together their work with respect to it or referred to inside their own papers.
- To become familiar with a field or a theme by distinguishing original works here.
- To figure out what impact a specific creator has had inside his/her own control and past by taking a gander at his/her all out number of citations separated by discipline and by nation.
- For advancement and residency purposes by taking a gander at the nature of sources where a researcher's work has been distributed and referred to.

	Web of Science (WOS)	Scopus	Google scholar
<b>Subject Focus</b>	Science, Technology, Social Sciences, Arts & Humanities	Science, Technology, Medical, Social Sciences, Arts & Humanities	Medical, Scientific, Technical, Business, Social Sciences, Arts & Humanities
<b>Components</b>	Composed of 3 citation indexes: <ul style="list-style-type: none"> <li>• Science Citation Index Expanded — to 1900</li> <li>• Social Sciences Citation Index –to 1956</li> <li>• Arts &amp; Humanities Citation Index –to 1975</li> <li>• Conference Proceedings -- to 1990</li> </ul>	<ul style="list-style-type: none"> <li>• Life Sciences</li> <li>• Health Sciences, 800 titles (including 100% coverage of Medline titles)</li> <li>• Physical Sciences &gt; 7,200 titles</li> <li>• Social Sciences &gt; 5,300 titles</li> </ul>	<ul style="list-style-type: none"> <li>• Selections from PubMed, IEEE, American Institute of Physics, proceedings of the National Academy of Sciences, Nature.com, American Medical Association and other medicine journals, Ingenta, SpringerLink, Wiley Interscience, Cambridge journals, Taylor and Francis, Sage Publications, Blackwell-Synergy, OCLC First Search and others</li> <li>• Open access journals and pre-prints</li> <li>• Online dissertations and theses</li> </ul>
<b>Coverage</b>	Over 10,000 journals	16,500 journals	Unknown
<b>Time Span</b>	Some journal files going back to 1900	38 million records, of which: <ul style="list-style-type: none"> <li>• 19 million records include references going back to 1996 (78% include references)</li> <li>• 19 million pre-1996 records go back as far as 1823</li> </ul>	Theoretically, whatever is available on the Web

Fig 1. Subject Focus and Coverage of Citation Analysis Tools

Hotspots for Citation Analysis: There are a few instruments accessible for citation analysis, some are membership based and others are free. Each device has its qualities and shortcomings and none of them covers the whole universe of insightful distributions. In this manner, it is critical to utilize more than one instrument to get a more full image of the insightful impact of a creator or a journal. [2]

	Web of Science (WOS)	Scopus	Google scholar
<b>Updating Strengths</b>	Weekly <ul style="list-style-type: none"> <li>• Deeper back-files especially for Science Journals</li> <li>• While controversial, its journal citation reports, impact factors, and h-index are most widely used.</li> </ul>	1-2 times a week <ul style="list-style-type: none"> <li>• User friendly search interface</li> <li>• Broader coverage of journals (16, 500 versus 10,000 in WOS)</li> <li>• Downloadable reference list</li> </ul>	Monthly on average <ul style="list-style-type: none"> <li>• Provides a more comprehensive picture of scholarly impact as it indexes non-traditional sources not covered by WOS and Scopus.</li> <li>• Includes peer-reviewed papers, theses, books, abstracts, and articles from academic publishers, professional societies, preprint repositories, universities, and other scholarly organizations</li> <li>• Better coverage of newer materials than both WOS and Scopus</li> <li>• International and multi-lingual coverage</li> </ul>
<b>Weaknesses</b>	<ul style="list-style-type: none"> <li>• Can lead to low citation counts due to errors in citations provided by authors, and different citation styles used by journals leading to poor indexing</li> </ul>	<ul style="list-style-type: none"> <li>• Citation tracking is limited to the relatively narrow time span of 1996+</li> </ul>	<ul style="list-style-type: none"> <li>• Limited search features</li> <li>• Inflated citation counts due to inclusion of non-scholarly sources such as promotional pages, table of contents pages, course readings lists etc.</li> <li>• Weeding irrelevant hits is time consuming</li> <li>• Difficult to export citations</li> <li>• No way to determine what sources, and time spans are covered.</li> <li>• Limited to what is available on the Web</li> </ul>

Fig 2. Strengths and Weakness of Citation Tools

A citation analysis is a quantitative strategy whereby significant and fundamental writing of a field can be distinguished based on how often a distribution is referred to in different distributions. Be that as it may, utilizing citations as a quality marker conveys issues. Basically, citations measure ubiquity instead of value, and individual citations are consistently a scientist's abstract decision, which can be influenced by numerous variables other than the nature of the article. Citations of an article uncover the positive or negative consideration it has gotten as opposed to demonstrate its quality. Citation checks favor standard examination and set up ideal models, while research that difficulties winning idea isn't really seen straight away. In fact, numerous significant logical advancements have not been seen until decades after their distribution. Then some examination results offering ascend to analysis, or even demonstrated to not be right, may get an incredible number of citations. [3]

All assessment techniques dependent on citation analysis are subject to the substance and nature of the information bases that contain the data on citations. When thinking about such assessment pointers, consideration ought to consistently be paid to which data set's data the figurings are from, on the grounds that the estimation of even same markers changes when the information base changes. The quantity of references to a specific article varies as per the information base, nor are the references in the various data sets in every case precisely the equivalent. Particularly with large scale level assessments, for example, when assessing research gatherings, divisions and nations, it is critical to deliberately examine the computing strategies for the pointers utilized and the reference information whereupon the counts are based. Additionally, it merits thinking about the interpretative impediments of the markers and the related issues. Accordingly, assessments often require the utilization of a few pointers, and citation data from various information bases. Assessments dependent on citation data ought to be supplemented with further master evaluations. [4]

Citation reference information bases each utilize diverse information assortment systems, and this has impacts both on what distributions the data sets contain and on the quantity of citations got by the distributions. The substance of various information bases focus on various things: journals, books, gathering procedures and other writing. Data sets typically contain citation data just on the journals they convey. The quantity of citations is additionally subject to how long a period length for citations is secured by the data set, and how often the citation data is up-dated in the information base. Citation data of all information bases likewise contains a few blunders; citations may be missing or they may have been enlisted twice. The substance of all information bases likewise changes constantly; data set specialist organizations remember new journals for their assortment and eliminate ones they have recently held, while they may up-date citation data additionally from more established distributions. [4]

## II. LITERATURE REVIEW

A. Malliari and A. Togia , 2016 present assessment to investigate the overall examples of LIS investigate, using as source material the articles conveyed in Library and Information Science Research in a five-year time span (2005-2010). Library and Information Science Research was singled out the grounds that is a cross-disciplinary and refereed journal, which spotlights on the assessment method in library and information science, covers a wide extent of focuses inside the field, reports investigate revelations and gives work critical to the two scholastics and specialists.

Dragan Ivanović, Yuh-Shan Ho 2016 hopes to perceive and inspect the characteristics of uncommonly referred to articles dispersed in the Information Science and Library Science class in the Social Science Citation Index. Articles that have been referred to at any rate on numerous occasions since distribution up to the completion of 2012 were analyzed. We separated 501 profoundly referred to articles circulated some place in the scope of 1956 and 2009 out of 37 journals. MIS Quarterly conveyed 26% of all separated uncommonly referred to articles. The most useful expert disseminated 11 articles. Six bibliometric markers were used to survey source establishments and countries.

William H. Walters, 2017, presents nine key requests that can empower researchers to use citation-based journal rankings (estimations) in the normal and human sciences. The nine requests address the characteristics that remember one estimation from another: the source records, the citation-checking window, the report types counted, the referred to file window, the impact of very referred to reports, the treat-ment of self-citations, the refinement between size-poor and without size estimations, the usage of normalization to speak to disciplinary differences essentially, and the use of weighting to speak with the impact or centrality of each referring to journal.

G.S. Mahalakshmi, G. Muthu Selvi, S. Sendhilkumar, 2017 educated that Research and practice are bearing; the sensible articles that get disseminated in line are also the equal. Different journals are set up – some specific and many, circulating sensible articles on broad and wide request. In any case, there are very few examination disciplines which have unmistakably, incredibly less number of connected and focused journal titles, and, the field of Bibliometrics is one among so. Journal of Informetrics is a dedicated journal related with conveying legitimate articles related to bibliometrics. This paper displays a relevant analysis on articles appropriated in Journal of Informetrics.

Joeran Beel, Akiko Aizawa, Corinna Breitinger, Bela Gipp, 2017 established that lone couple of cutting edge libraries and reference administrators offer recommender systems, yet such structures could help customers facing information over-trouble. In this paper, we present Mr. DLib's recommendations as-an organization, which empowers untouchables to adequately consolidate a recommender structure into their things.

Okon Edet Ani, Eucharia Okwueze, 2018 was coordinated bibliometrics analysis from 2005-2014 to take a gander at instances of distribution in Nigerian Libraries, a front line public journal in library and information science (LIS) examination and distribution in Nigeria, disseminated by the Nigerian Library Association (NLA), a specialist variety of LIS pros in Nigeria. The objectives of the examination were to choose the most beneficial makers and foundations, level of exploration joint exertion and example watchwords/subjects/investigate locales. The eventual outcomes of the examination revealed the 7 most profitable makers that circulated in Nigerian Libraries with least of 3 papers.

### III. RESEARCH ANALYSIS

The Length-wise circulations of the journal articles are introduced in table 1 and the most extreme number of articles of pages 0 to 5 are distributed in year 2013 and 2017. Additionally the greatest number of articles of pages 6 to 10 are distributed in year 2011 and the most extreme number of articles of pages 11 to 15 are distributed in year 2009.

Table 1 Length-wise Distribution of Journal Articles

Nos of Pages	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
0 to 5	56	63	78	50	50	80	70	57	70	80
6 to 10	50	35	52	58	50	21	26	23	30	25
11 to 15	14	17	9	6	6	1	0	19	2	13
15 to 20	0	0	0	0	0	0	0	0	0	0
21 to 30	0	0	0	0	0	0	0	0	0	0
	120	115	139	114	106	102	96	99	102	118

In graphical representation of table 1 is shown in the fig 2

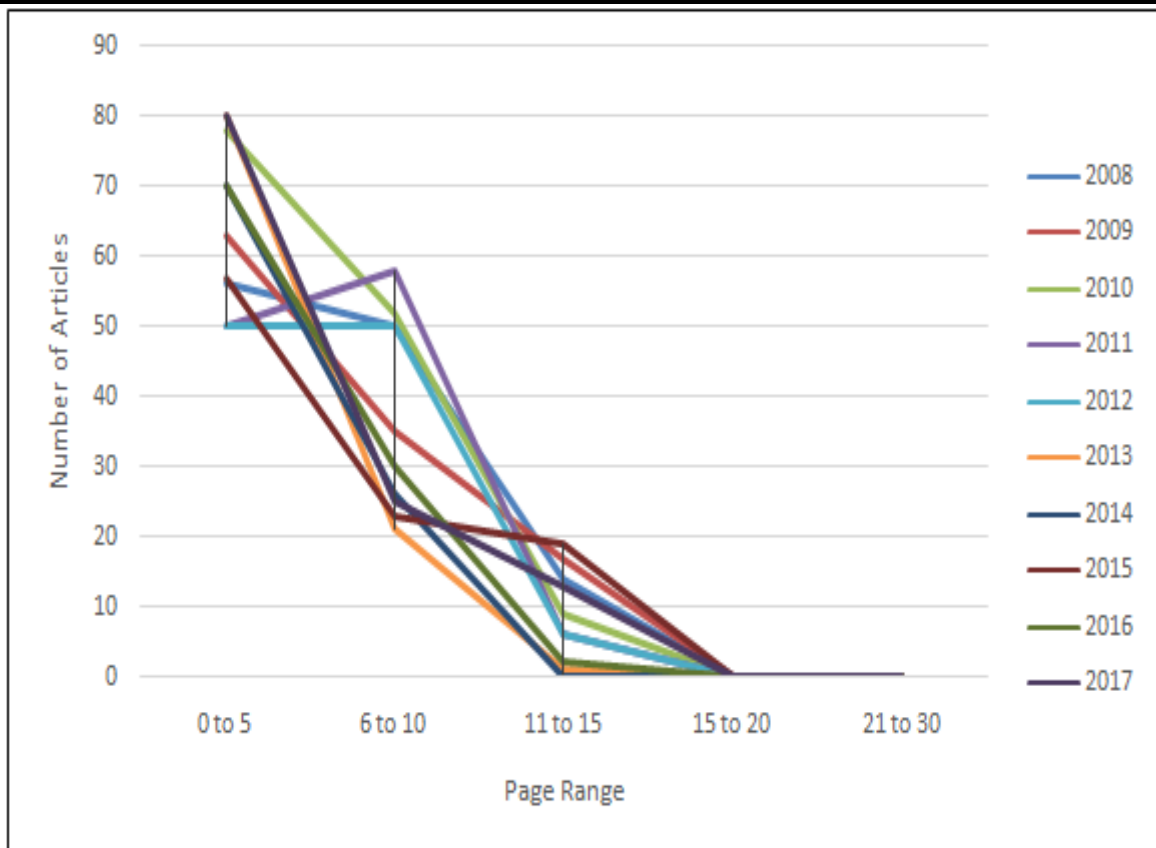


Fig 3 Length-wise Distribution of Journal Articles Graph

The writer commitments of the journal articles are introduced in table 2 and the most extreme number of articles of will be of two writers and that are 510. Followed by three writer's commitment of 320 articles in the long periods of information analyzed. The base number of articles are distributed in the multiple writers class , and they are just 50.

Table 2 Author Contributions of the Journal Articles

Number of Authors	Total Nos of Contributions	Percentage (%)
Single	140	12.60126013
Two	510	45.90459046
Three	320	28.80288029
Four	91	8.190819082
More than four	50	4.500450045
	1111	100

The graphical representation of table 2 is show in figure 4

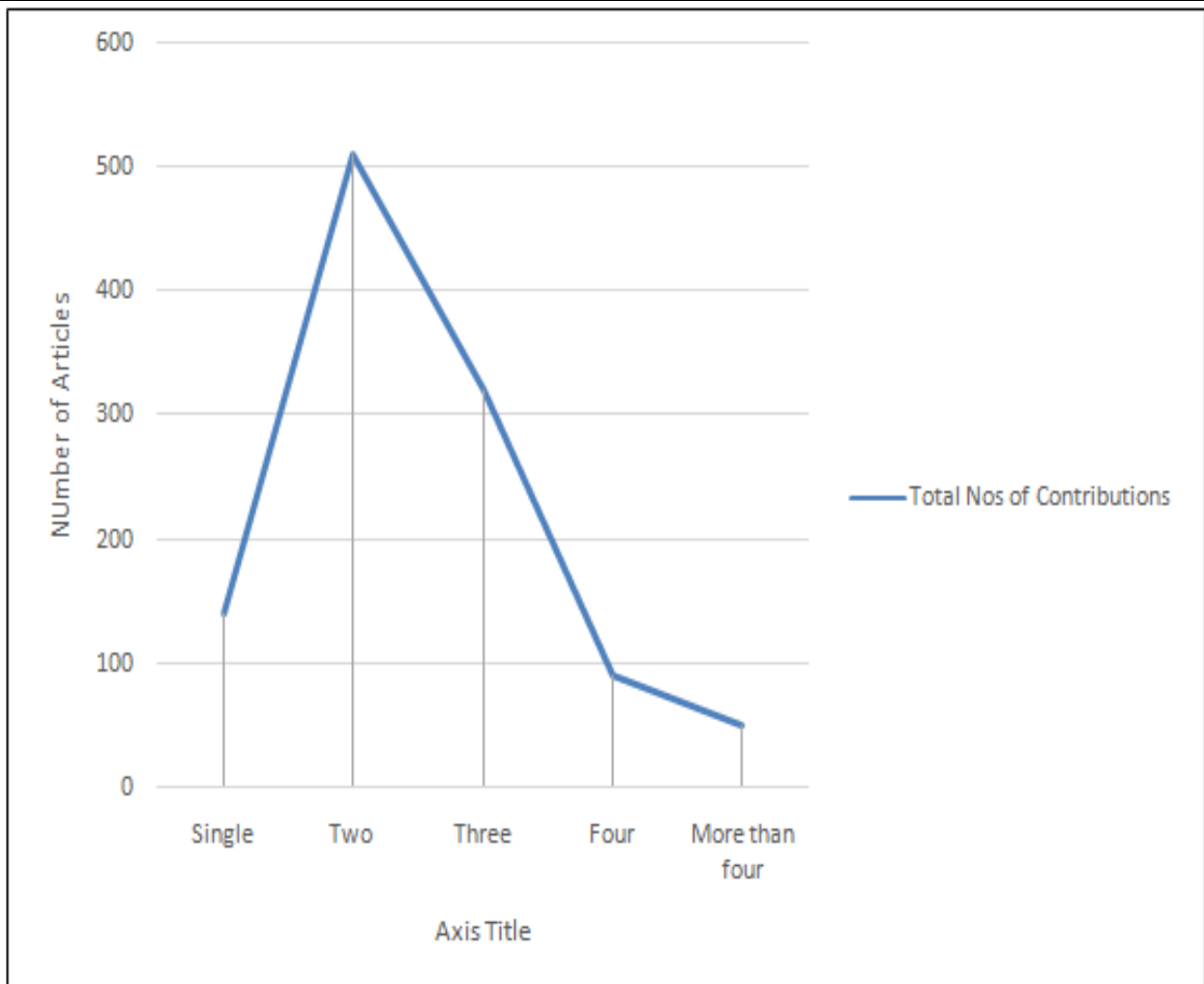


Fig 4 Author Contributions of the Journal Articles Graph

The volume astute writer commitments of the journal articles are introduced in table3 and the greatest number of articles of will be of two writers 65 in volume 9. Followed by two writer's commitment of 60 articles in the vol 7.

Table 3 Author Contributions of the Journal Articles

Vol. No.	One Author	Two Authors	Three Authors	Four Authors	More than four authors	No. of Articles
7	10	60	37	7	6	120
8	17	54	35	4	5	115
9	12	65	49	6	7	139
10	26	47	37	2	2	114
11	15	46	31	6	8	106
12	14	38	31	14	5	102
13	10	41	33	10	2	96
14	9	40	30	15	5	99
15	15	59	7	16	5	102
16	12	60	30	11	5	118

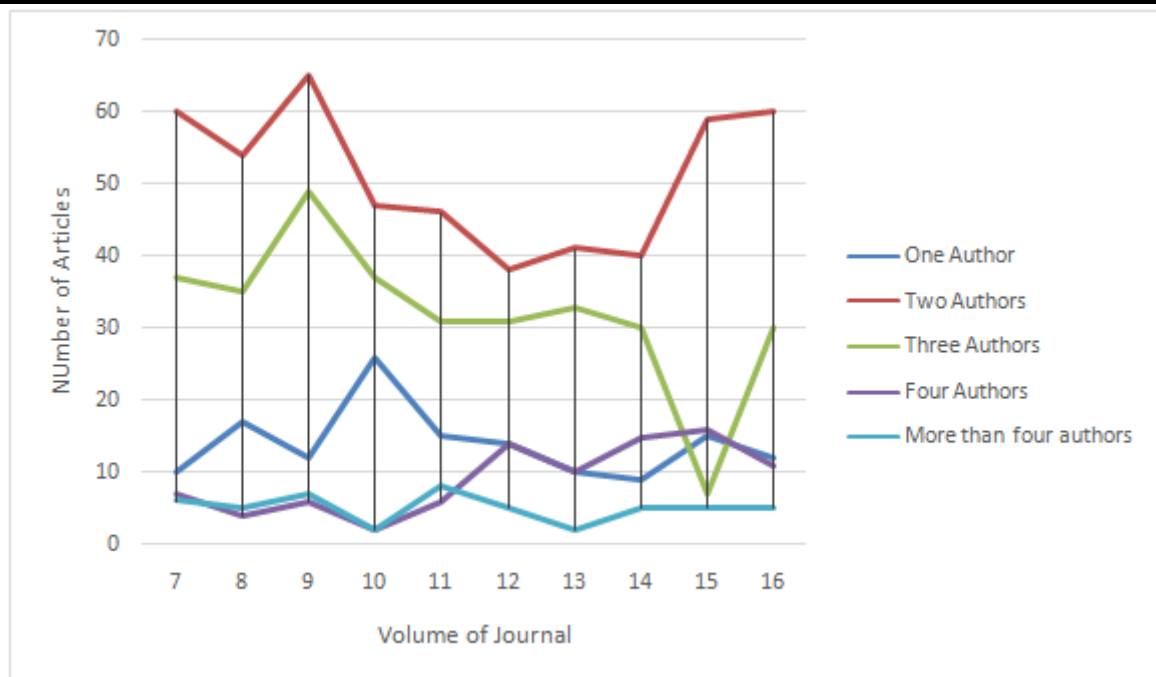


Fig 5 Author Contributions of the Journal Articles Graph

#### IV. CONCLUSION

This paper is about the research methods which we have followed in the Citation Analysis of the IJTK journal and the main of the three methods are Web of Science ,Scopus and Google Scholar , this paper discusses the concepts of the citation analysis in reference of the three methods and their strengths and weaknesses and the use of methods in the analysis of IJTK.

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