Microsoft Academic Search and Google Scholar: A Gateway for Research Beginners

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ABSTRACT: This paper deals about the working techniques of Microsoft Academic Search and Google Scholar. MAS & GS have their own advantages for searching exclusively scholarly documents which are indexed in their platforms. Most of the peer reviewed journals, non peer reviewed journals and open access journals are indexed here. This tutorial is very much helpful for the research beginners and academicians for locating the related reviews.

1. Introduction

People are living in the world of information explosion especially in the influence of information communication technology has brought drastically changes in the field of information. Human daily life surrounded by data, information, knowledge, opinions, ideas etc. The growing amount of literature on the Web and the need for multidisciplinary information retrieval accentuated the need for improved retrieval mechanism because while the documents were readily available, locating them and relating them to each other was difficult. In research we are digging the information for analysis. But beginners very often encounter problem in their research for searching relevant scholarly information. Researcher from economically poor country are generally waste their enormous time due to lack of awareness and non availability of scholarly databases. Beginner researcher should know about the Open access popular research and academic bibliographic databases and nook and corner of that. Here we discussing about well known bibliographic database such as Microsoft Academic Search and Google Scholar.

2. Objectives of the Paper

• To study the overview of Microsoft Academic Search & Google Scholar
• To know about search strategies and the advantages and disadvantages of both the platform
• To prepare a tutorial for fresh researchers to use the open access journal articles.

3. Related Literature

Neumann (2007) evaluated that three services—Google Web, Google Scholar, and the local library—in this regard. Users were presented with one of two research questions (from communications). They have 15 minutes time to find and evaluate results with one of the search services. Given this short time-span, it comes as no surprise that Google Web performs best. Web search results usually offer easier-to-read, overview articles in opposition to the highly specific scientific texts that are usually found in A&I or full-text databases. However, the approach to measuring the increase of knowledge seems to be promising and should be kept in mind for future studies.

Pomerantz (2006) explained that libraries should give their users 100 percent availability of information. While Google Scholar could not compete in this respect, this search engine could help to lead users to the library's offerings. Problematic with this approach is that the user often doesn't know or recognize that he indeed uses the library's offerings—i.e., the content the library has licensed for its users. The first as well as subsequent coverage studies made it clear that Google Scholar could not compete when one demands this 100 percent approach to coverage. However, one must say that libraries currently do not give their users this complete coverage through one access point (see Lewandowski, 2006).

Walters (2007) compared Google Scholar to other discipline-specific or multidisciplinary databases based on a set of "155 core articles representing the most important papers on later-life migration published from 1990 to 2000". The study found that that GS covers 93 percent of the literature, which is better than any of the other databases under investigation.

Bar-Ilan (2008) added to her review of the current informetrics literature (from 2000 onward) an analysis of GS coverage of the 598 articles used for this review. Researcher found out that all but one of these articles could be found using GS. Lewandowski (2007) studies the coverage of GS for articles in the German-language LIS journals. Researcher finds that coverage is comparably low (56 percent), but that for approximately 21 percent of articles, GS can lead the user to the full text.

Meier and Conkling (2008) compared GS's coverage of the engineering literature using Compendex as reference database. They find that the coverage of GS has increased over time, reaching over 90 percent of the Compendex entries for records after 1990.

Mayr and Walter (2007) test GS for its coverage of scientific journals based on journal lists from Web of Science the Directory of Open Access Journals, and the SOLISiv database. They find that the coverage of journals (i.e., at least one article for a certain journal was found in GS) varies between databases (from 68 to 88 percent). From the studies reported, researchers have found that while GS's coverage for certain disciplines varies, the overall coverage is quite good.

4. Overview of Microsoft Academic Search

Microsoft Academic Search is a bibliographic database designed and hosted by Microsoft Research to explore how scholars, scientists, students, and practitioners find academic content, researchers, institutions, and activities. Microsoft Academic Search indexes not only academic publications, it also exhibits the key relationships between and among subjects, content, and authors, accentuating the critical links that help define scientific research. As is true of many research projects at Microsoft, this service is not intended to be a production Web site, and it will likely be taken offline when appropriate given the research goals of the project.

How Microsoft Academic Search results are ranked
In Microsoft Academic Search, objects in the search results are sorted based on two factors:

• Their relevance to the query.

• A static rank value that is calculated for each item in the Microsoft Academic Search index. The static rank encompasses the authority of the result, which is determined by several details, such as how often and where a publication is cited.

Some search results can be sorted by Field Rating. The field rating is similar to h-index in that it calculates the number of publications by an author and the distribution of citations to the publications. Field rating only calculates publications and

citations within a specific field and shows the impact of the scholar or journal within that specific field.

5. Types of Search

This is having both basic search and advanced search.

Understanding Search Results

When a researcher conducts a search, Microsoft Academic Search returns a list of publications on the search results page. The search results display publication titles, authors, journals, and citation information. Researcher can explore any of these elements further by clicking them.

Ways and means for using Microsoft Academic Search

Step 1: To search research papers on Microsoft Academic Search, type "academic.search.microsoft.com" on the address bar.
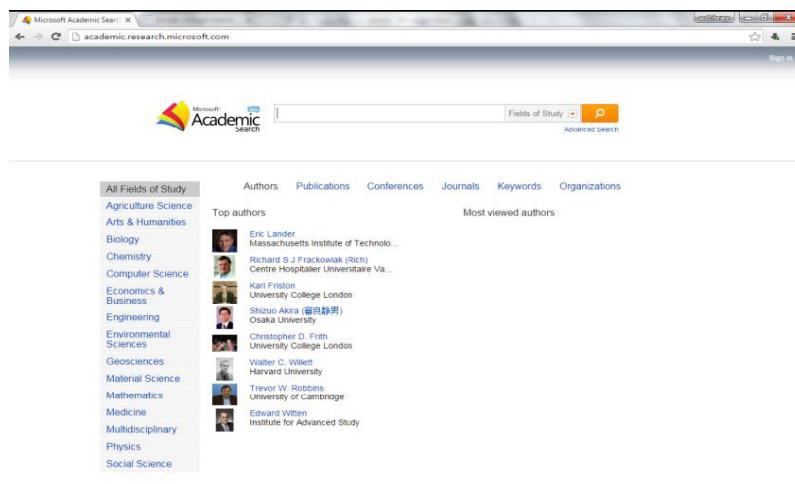

Figure 1. Academic.research.microsoft.com page in the Google Chrome web Browser

Step 2: Next enter the topic to be searched. As in previous case, type "Library Automation"
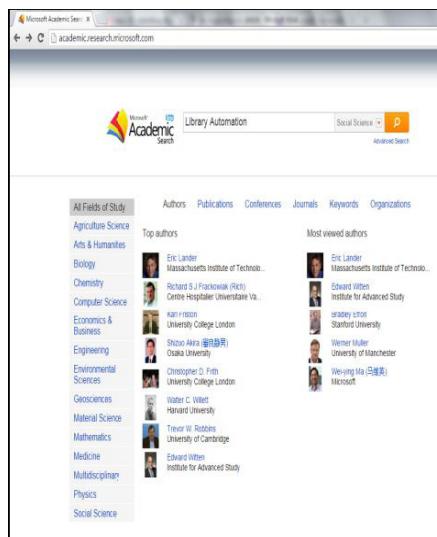

Figure 2. Topic "Library Automation" for searching

Step 3: Next, select the "field of study" For instance, select "Social Science" and click on search button as shown in fig.3
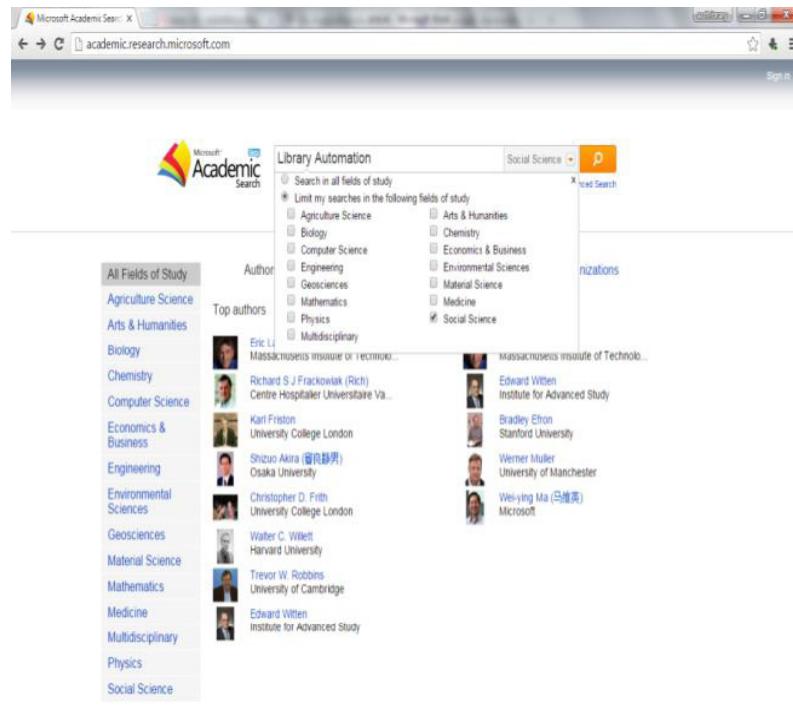

Figure 3. Various menus for selection after clicking the search button
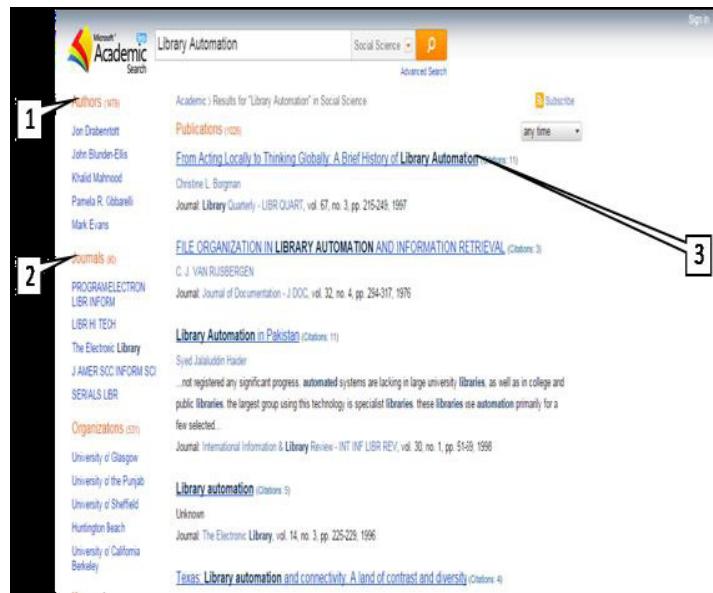
Figure 4. Search result and list of publications

Clicking the search button, will navigate to a new webpage containing the following information as shown in fig 4.

1. List of renowned authors in a above said area as shown in fig 4.

2. List of best rated Journals in specific area show in fig 4.

3. List of publication as shown in fig 4.
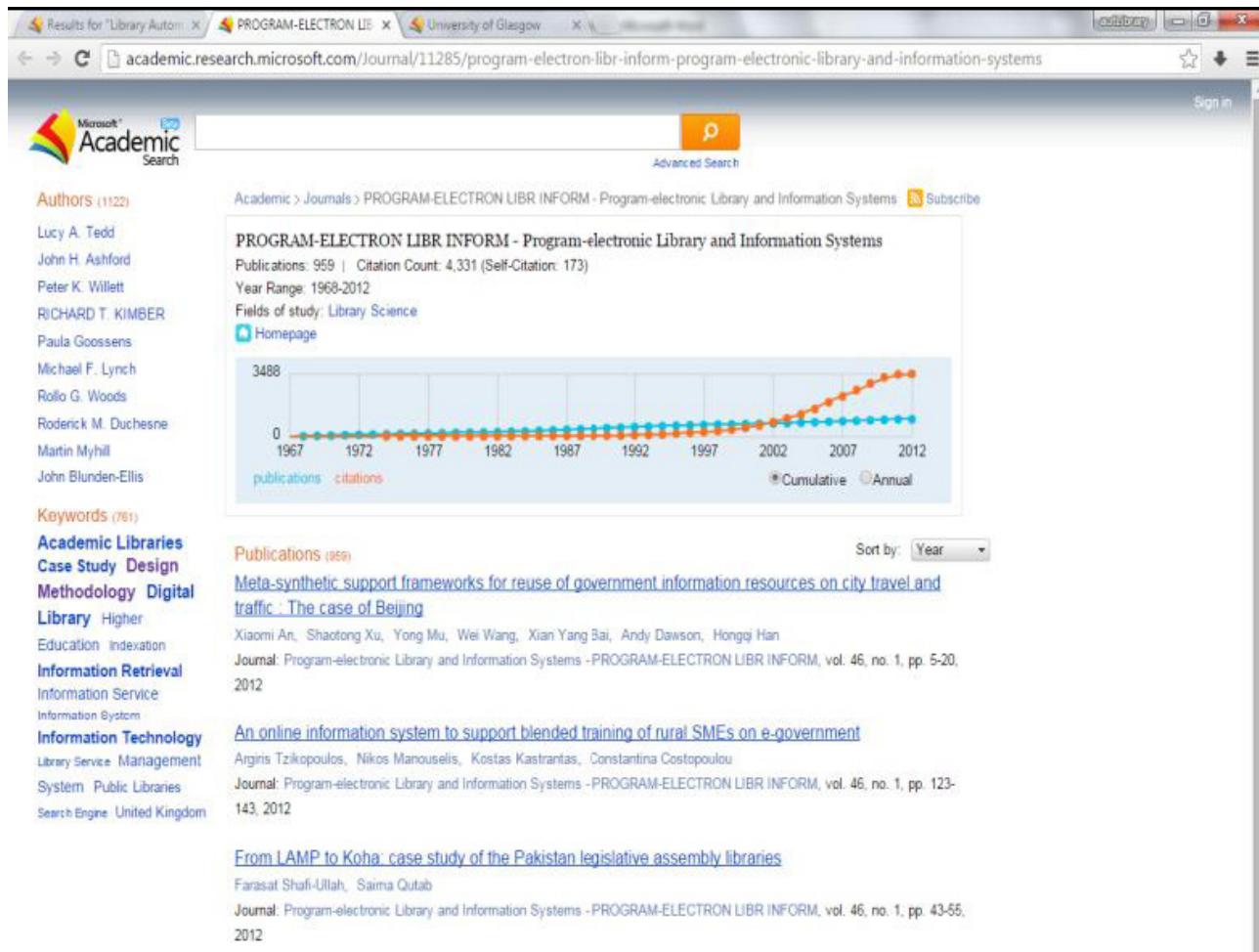
Figure 5. Information related to "Program-electronic Library and Information Systems". The most cited authors, the keywords and list of research papers

Step 4: Clicking on the Program-electronic Library and Information Systems in fig 4 (extreme left), we will be navigated to a new webpage, and the fig.5 shows the information related to Program-electronic Library and Information Systems. The Famous authors, keywords and the list of research paper published in the same journal.

Finding the Citations of Publications
One of the most important factors of searching academic publications is citation linking. Following citations from and to publications is critical to information discovery. Microsoft Academic Search gives an efficient mechanism to facilitate this. Search results, whenever possible, display lists and links to both referenced publications and citing publications.

Microsoft Academic Search highlights the context of a citation (when possible) by displaying the section of the citing publication in which it is referenced.

Citation Graph
This visual representation feature displays the citation relationships among publications, providing a best ideal way of navigating from a particular publication to the publications that cite it. Double-clicking a citing publication will re-draw the graph, showing the publications that cite that publication. Clicking the edge between any two publications will expose the citation context, provided such information is available in Microsoft Academic Search.
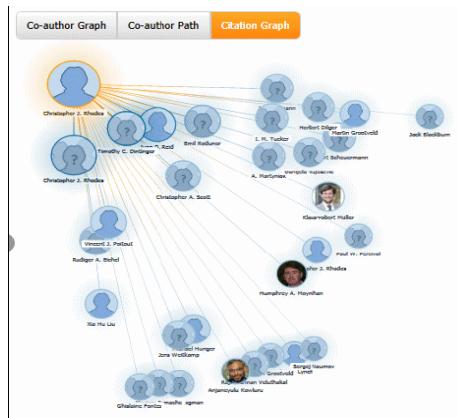
Citation Graph
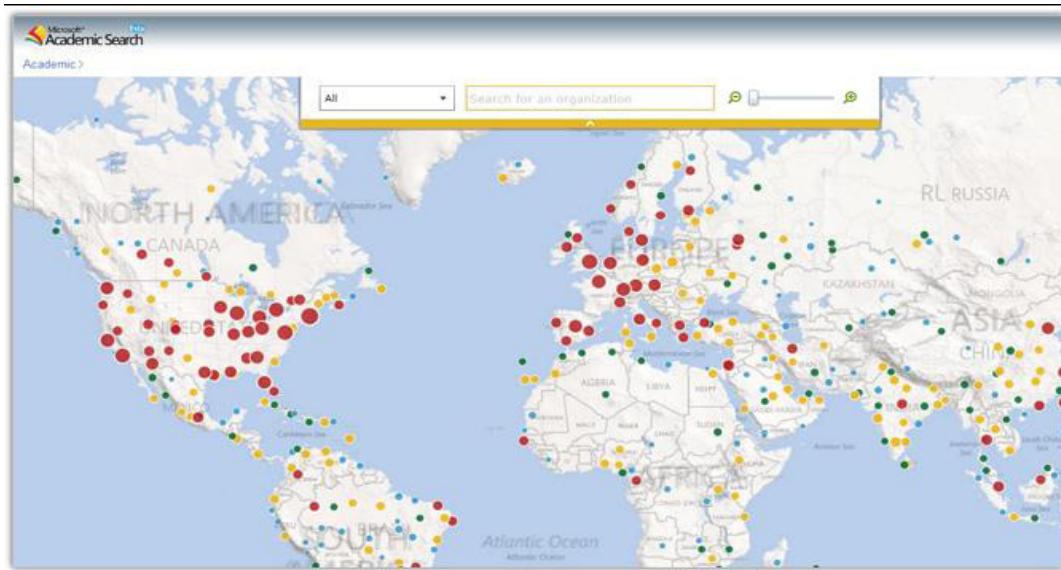
Academic Map

Academic Map

This feature makes it easy to map scholarly output within organizations geographically. Organizations are showed as dots on a global map with their color and size related to their number of authors. Clicking an organization displays further detail about its authors. One can also refine the displayed organizations and authors by field; organizations automatically resize based on their number of authors in that particular field.

6. Feature Updates

• More than 10 million new publications from JSTOR, Nature, Public Library of Science (PLoS) and others (23 publishers added)

• New and simplified home page layout.

• Improved site navigation and browsing capabilities.

• Easier sign in via Facebook, Yahoo!, and Google sign in.

• Excised/hidden features (Genealogy, h-Index).

- Improved editing UI.

- Simplified Add/Edit/Merge actions.

- Edits to field of study now available on author profile.

- Auto-approval of content changes implemented for faster publishing.

7. Overview of Google Scholar

Google Scholar is the bibliographic database of the world's largest and most powerful. Google Scholar was developed by Anurag Acharya, an Indian-born computer scientist. It is an wonderful tool allowing researchers to locate a wide array of scholarly literature on the Web, including scholarly journals, abstracts, peer reviewed articles, theses, dissertations, books, preprints, PowerPoint presentations and technical reports from universities, academic institutions, professional societies, research groups, and preprint repositories around the world. As such, it has become a gateway to accessing scholarly information on the Web. Every day more scholarly information is available online and we continue to discover new reasons to need access to this information. Thus the greater the accessibility of scholarly material, the greater is the value for researchers.

Google Scholar may be used for citation analysis, through bibliometric techniques, which calculates the impact factor of an individual publication as a function of the number of citations it receives from subsequent authors. In addition, any author may legitimately wish to determine whether his/her own work has been criticized or used by others on the Web. Authors are interested in knowing whether anyone has cited their works and/or whether other researchers in their fields have commented on them. Google Scholar facilitates this type of feedback in the scholarly communication cycle on the Web. Regardless of the year that the article was published, Google Scholar permits researchers to identify where that article was cited. Researchers can locate recent articles that have cited the particular article. A further use of Google Scholar is to identify scientists currently working in specific branches of science in order to suggest collaboration, to enter into correspondence, etc.

8. Advantages of Google Scholar
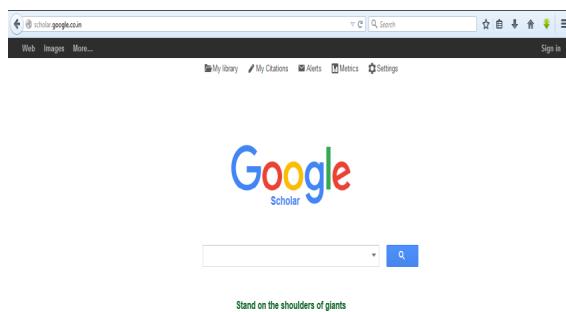
Figure 6. Figure shows http://scholar.google.co.in/ page in the Firefox web Browser

- It is familiar and relatively simple to use, much like Google.

- It allows users to search for a find a wide variety of materials including articles, books, "grey literature" like conference proceedings on a vast number of topics.

- It allows to see articles related to the one that might interest researchers, how many times an article has been cited and by whom, and provides citations for articles in a number of styles.

- It allows the research to save both citations and articles to read later.

Following steps are used in the Google scholar while searching the article

Step: 1 Go to Google scholar by typing www.scholar.google.com on the web browser.

The Google scholar one of the first aid for searching when we have to search for different articles, thesis, books, abstracts and research papers across different discipline. The above figure (Figure 6) snapshot when the following is typed on screen www.scholar.google.com

Step: 2 Enter the topic to be searched (for example Library Automation). Then enter the topic want to be searched in the search field. For example in fig 7 we have typed "Library Automation" to get all the scholarly articles related to it.

Step: 3 showing the results of list of scholarly articles generated after clicking on the search button
Figure 8 click on the search button to get the list of scholarly articles then touch the search button this gives access to a number of scholarly articles related to library automation as showing

Elements appeared in the search result page (Figure 8)
1. Click on "Since 2010" you can view papers published from the year 2010.

2. It shows the title of the article.

3. It shows the year of publication. Here year in which the research paper published is 1996.

4. It shows the academic publisher here the publisher is ERIC.

5. Citation for a particular article can be viewed through "cited by' link. Here "cited by 46" indicates that this has been referred by 46 articles.

6. In general researcher are having problem for writing reference. Here "cite" option provides that MLA, APA and Chicago referencing styles help the researcher in writing the bibliographic information.
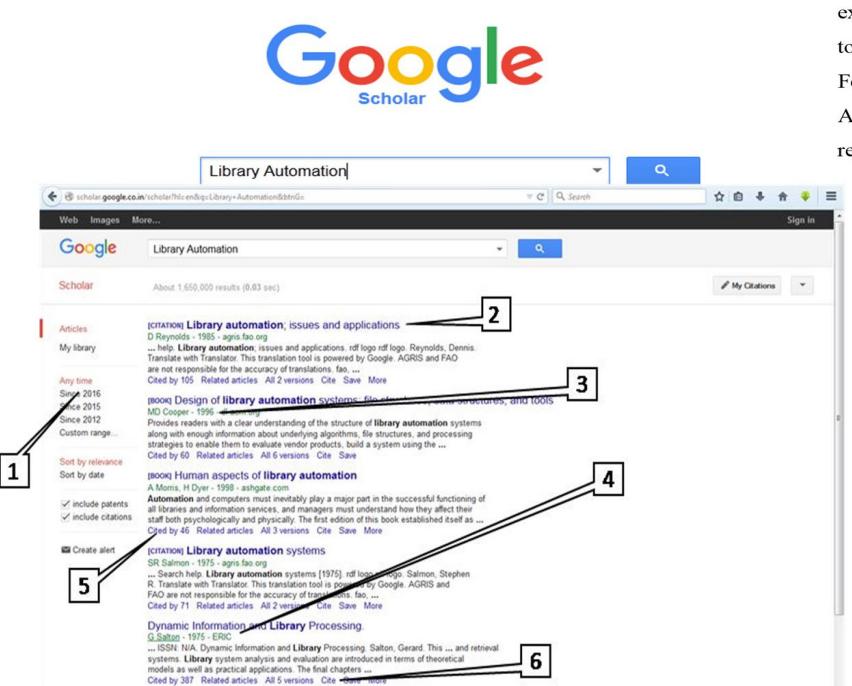
Step 4: Click "cite by" to view articles that have been refereed this articles in their research articles
For example cited by 105 of the articles title "Library automation issues and application" leads to new webpage containing all the scholarly articles and here referred the above articles. The new webpage will help the researcher for further work on their research.
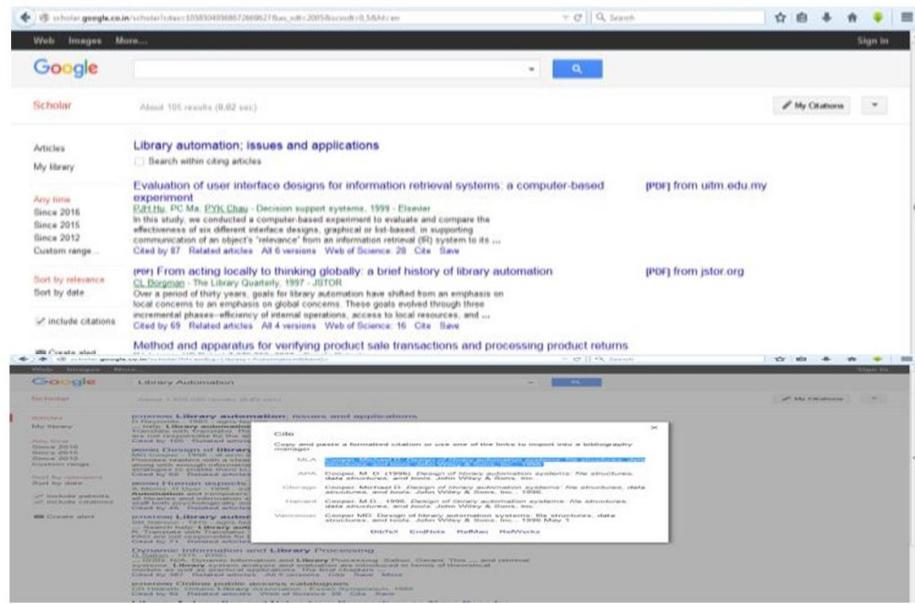
Step 5: Click on "cite" to refer this article in your paper.

It has several formats researcher can use anyone of that to add it as a reference. Figure 10 below shows the snapshot when the researcher click on cite.

7. Conclusion

This paper gives an overall idea for excellent searching of scholarly articles using Google Scholar and Microsoft Academic Search. This practical procedure gives step by step process for effectively searching related articles to the research. Through this paper and hands on experience it was identified that Google scholar offers more user friendly interface than Microsoft academic search. Google Scholar contains more rich academic materials than Microsoft Academic Search. The main advantage of Microsoft Academic Search over Google Scholar is the retrieval of maximum results from multidisciplinary fields. Moreover Google provides easy citation facility. This paper presents a useful analysis for potential users of the Google Scholar site and Microsoft Academic Search.

Reference

[1] Ortega., José Luis., Isidro F. Aguillo. (2014). Microsoft academic search and Google scholar citations: Comparative analysis of author profiles. *Journal of the Association for Information Science and Technology* 65.6 (2014): 1149-1156.

[2] Karen A. Hartman., Laura Bowering Mullen. (2008). Google Scholar and academic libraries: an update, *New Library World*, Vol. 109 Iss: 5/6, p 211 - 222.

[3] Peter Jacso. (2005). *Google Scholar: the pros and the cons, Online Information Review*, 29 (2), p 208 – 214.

[4] Pomerantz, J. (2006). Google Scholar and 100 percent availability of information, *Information Technology and Libraries*, Vol. 25 No. 1, p 52-56.

[5] Neuhaus, C., Neuhaus, E., Asher, A., Wrede, C. (2006). *The depth and breadth of Google Scholar: An empirical study, Portal-Libraries and the Academy*, Vol. 6 No. 2, p 127-141.

[6] Walters, W.H. (2007). Google Scholar coverage of a multidisciplinary field, *Information Processing & Management*, Vol. 43 No. 4, pp. 1121-1132.

[7] Bar-Ilan, J. (2008). Informetrics at the beginning of the 21st century: A review, *Journal of Informetrics*, 2 (1), p 1-52

[8] Mayr, P., Walter, A.-K. (2007). An exploratory study of Google Scholar, *Online Information Review*, 31 (6), p

814-830

[9] Lewandowski, D. (2007). Web Searching: A Quality Measurement Perspective. In Web Searching: Interdisciplinary Perspectives Dordrecht: Springer.

[10] Meier, J J., Conkling, T W. (2008). Google Scholars coverage of the Engineering Literature : *An Empirical Study The Journal of Academic Librarianship*, 34 196-201.