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The Case of Cited and Uncited Publications in the field of Reference Services: A Study

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ABSTRACT

Purpose

The endeavor of the present study is to identify and compare the characteristics of cited and uncited publications in the field of reference services. The phrase 'reference service' was searched in the document search tab of Scopus database and found 2612 results, which were limited to social science subject area and hence got 2021 results. The retrieved data was then restricted to journal source type and found 1900 results out of 2021. At last, the data was confined to library and information science journals in source titles and retrieved the actual data for the study i.e., 1861 number of articles. The data was then downloaded and finally analyzed on the basis of the year of publication, authors, subject areas, document type, source titles, affiliation, countries, funding agencies and keywords. It was revealed that most of the documents in the field of Reference services are cited and majority of the cited articles are published in the year 2001 whereas two recent consecutive years i.e., 2018 and 2017 has produced mostly uncited publications. Luo, L., from San Jose State University, U.S. was found as the most contributing author in cited publications while Berring, R.C., from University of California, U.S., Duckett, B., from Chartered Institute of Library and Information Professionals, U.S., Needleman, M. from Association for Information Science and Technology (ASIS&T), U.S. are leading the list of contributing authors in uncited publications. The cited publications included more number of subject fields in comparison to uncited publications. Despite the differences, some similarities were found in cited and uncited publications such as the most of them are in the form of articles and they are searchable by "Reference Service" keyword. Majority of cited and uncited publications are from USA. Subsequent similarities revealed that most of the cited as well as uncited documents are non-access type, published in Reference Librarian and apart from their main subject i.e. social sciences they belong to computer science subject area.

KEYWORDS: Reference Service, Citations and Measure of Quality, Scopus, Highly Cited Articles, Uncited publications, Bibliometrics Indicators.

1. INTRODUCTION

Citation analysis is among the most commonly practiced bibliometric methods. It utilizes citations in academic works to create links with other works or researchers. A scientific paper is not a result of one individual's thinking rather enclosed in the literature of the subject. The use of footnotes and reference lists specified the nature of these enclosures. The work of the authors is always incorporated with references to support their findings and these references or footnotes are recognized as "citations" (Garfield, 1973). Performance quality in the context of research is measured by the citation counts which indicate that the number of times an article has been cited in other publications and hence actually increases its productivity. The information retrieved

from these citations helps to examine the significance of an article. The citation analysis process not only includes counting the number of times an article is cited by other works but also incorporates the metrics for measuring the impact of the journals, institutions, countries, authors, even funding agencies, etc. (Aksnes, Langfeldt & Wouters, 2019). In the powerful information technology era, citation counting is now becoming an easy method to assess the influence of a research in scientific community. It is also the most effective method for finding the core documents in a specific subject field to fulfill the information requirements of researchers belonging to that particular area. The aggregates of citations are an indicator of publication impact which is considered as a significant means of measuring the quality of researchers (Shuaib & Costa, 2015). The articles which receive the highest citation counts are considered as the highly cited papers or standard works as they have higher impact on the particular field of research and researchers. The journal in which the articles are published is a considerable aspect in measuring the quality of any cited paper. The quality of an article is mainly dependent upon the value and impact of the journal which is identified through its popularity, frequency of its citation, and its perception as well as image in the academic community. Journal quality and impact are measured by considering the SCImago Journal Rank, H-Index, Impact Factor and Article Influence. If the journal is ranked at the top of the professional field, then it can be assumed that the quality of the articles is high. Another aspect in quality measure is the author's good research background and his/her affiliation with a reputable institution (Swaen, 2014). On the other hand, there are articles which do not receive any number of citation are known as uncited articles. Although, quality and the application of the research plays an important role for the number of citations and its usage, but it has been considered that not all the uncited publications are less qualitative or useless rather there may be some reason(s) behind their uncitedness like citation errors including the misspelling of a journal or errors related to volume, issue, page number, etc. Such errors prevents directional link to be made from citing articles to the cited article, which means it cannot be counted as a citation number. Another reason is that the citations take time due to which articles go unnoticed for decades (Davis, 2012). In any specific subject field, there are some cited articles as well as uncited articles. The analysis of these cited and uncited articles reveals useful information about scientific progress of a particular subject area and the scholarly interest in that research field. The characteristics for comparing the cited articles with uncited articles includes authors, their affiliations, funding agencies, contributing countries and institutions, number of references, document type, research methodology, etc. This study is an attempt to explore the cited and uncited publications related to reference services in order to compare the characteristics of highly cited articles with uncited articles. The use of citation analysis to survey the literature regarding the reference services discloses quantitative information about articles, authors, and journals that would be useful in identifying standard and less considering works. Multiple databases are needed to find all possible cited references for an in-depth review of research impact. There are several resources available to identify cited works such as, Scopus, Web of Science, Google Scholar, and other databases restricted to citation data. However, for the present study, Scopus database was used to collect the required data which is the largest abstracting and citation database from Elsevier and the data was exported to assess the publication years, authors, document types, source titles, etc.

2. AIMS & OBJECTIVES

The study is aimed to identify and compare the characteristics of cited and uncited publications in the field of reference services. The main objectives of the present study are as follows:

- To identify the total number of cited and uncited publications related to the field of reference services.
- To know the year wise distribution of cited & uncited publications in reference services.
- To trace out the top contributing authors and journals in cited & uncited publications in the field.

- To determine the top funding agencies, contributing institutions and countries of the cited & uncited publications in the field.
- To find out the subject area and document type of cited & uncited publications in the field.

3. LITERATURE REVIEW

A sufficient amount of literature have been published on the assessment of highly cited publications in different subject fields and very few studies have been found on the difference between cited and uncited articles. However, the authors found no studies regarding difference between cited and uncited publications in the field of reference and information services. Hence, a gap was identified by the authors in the existing literature and made an attempt to carry out a study that would help to give a representation in the assessment of cited and uncited publications in the field. The major findings of some of the prominent studies on these aspects are arranged according their level of relevancy. **Amini, Derakhshanfar, Dolatabadi & Kariman (2012)** identified and compared the characteristics of the highly cited articles with uncited articles published in the field of drug abuse and mis-use. The study showed that the subject area, adopted methodology and topic, journal's impact factor, language of publications and geographic distribution of publications, authors name, form of the article and number of references could influence the citation rate. **Hamrick, Fricker Jr., & Brown (2010)** evaluated some of the characteristics that distinguish highly cited papers from less cited papers and found that Edelman competition papers, tutorials, longer papers, papers including larger numbers of references to previous literature and papers with a larger number of "callouts", tend to have a higher number of citations. **Kostoff (2007)** compared the characteristics of highly with poorly cited research articles published in *The Lancet* over a period of three-years. It has been found from the comparison that highly cited articles emphasize on various medical themes including diabetes, coronary circulation, breast cancer and immune system problems and are reported by number of authors in lengthy well-referenced articles for the chosen time period. **Levitt & Thelwall (2009)** investigates the most highly cited Information Science and Library Science articles in the Web of Science. The result revealed that the articles published in Information Science & Library Science with other subject receive higher citations than those articles which solely published in Information Science & Library Science. It has also been found that high quality ideas and methods in Information Science & Library Science often are exploited many years after they were published. **Kolle, Vijayashree & Shankarappa (2017)** disclosed the bibliometric characteristics of highly cited articles in Malaria research for the period of 1991-2015. The paper is very useful for the scientists as well as researchers to make a better understanding of growths and advancements in malaria research. **Garousi, & Fernandes, (2016)** systematically identified and classified the highly cited articles published in the field of Software Engineering. The outcomes of the study found beneficial for the new researchers to grasp the type of contributors, approaches and research methods applied in highly cited publication so that they can carry out further higher quality research in that specific area and receive high citations. They also can get advice from the most cited researchers by communicating with them. **Oppenheim & Renn (1978)** determined the reasons of being highly cited articles even after so many years of their publications by analyzing twenty three old papers in the area of physics and physical chemistry. The findings reveled that about 40 % of the citations were due to the historical reasons while the remaining 60% is still begin to use actively. **Eshraghi et al. (2013)** identified and investigated the main characteristics of the 100 top cited articles in the field of limb prosthetics. Most of the cited articles were found mainly in experimental designs. The findings indicated that to determine the importance of any specific publication the citation rate is not necessary. **Chuang & Ho (2014)** identified highly cited papers, as well as contributors in the field of pain-related research. Findings showed that in recent decades the top cited article have shown a more rapid decreasing trend in comparison to the top cited articles from earlier decades. **Noorhidawati, Aspura, Zahila & Abrizah (2017)** identified the characteristics of highly cited articles

published in Malaysia and found that these articles are primarily the result of funded research; include international collaboration and multiple co-authorship; affiliated to Malaysian research universities and Malaysian authors mostly play a leading role as first or reprint authors. **Antonakis, Bastardo, Liu, & Schriesheim (2014)** examined the article citations by using 776 articles that were published from 1990 to 2012 in a journal, *The Leadership Quarterly*. It was found that articles having simple design or problems received considerably fewer citation than those articles which use more substantial design or an assessment method that ensured accurate causal estimation. **Small (2004)** surveyed the authors to get their opinion on the reasons of receiving high citation by their papers. These authors perception revealed the two factor of high citations i.e., internal and external. The internal factors indicate the technical terminology used to describe their work while external factors specify the different vocabulary of the same work received by the wider audience within the field.

4. RESEARCH METHODOLOGY

In the present study, data was extracted from the SCOPUS database to compare the cited publications with those of uncited publications related to the field of reference services. The research methodology adopted for conducting the study is discussed below:

- a. Phrase Search:** The phrase “reference service” was searched in the document search tab of Scopus database and found 2612 results.
- b. Subject Area:** The results were limited to social science subject area which gave 2021 results.
- c. Source type:** The retrieved data was then restricted to Journal source type and found 1900 results out of 2021.
- d. Source title:** At last, the data was confined to Library and information science Journals in source titles and retrieved the actual data for the study i.e., 1861 number of articles.
- e. Data Analysis:** The data was then downloaded and further analyzed by following different parameters including year of publication, authors, subject areas, document types, source titles, affiliation, countries, funding agencies and keywords.

5. DATA ANALYSIS & INTERPRETATION

After using the different refinement features available in Scopus database including subject area, source type, and source title, there are a total of 1861 documents which were considered for the final analysis and of which 1387 were cited and 474 were uncited documents. Among all the cited documents, only 71 documents were found in open access mode while in case of uncited documents, only 34 documents were available as open access articles. The following sections discuss the various parameters adopted by the study for analysis of the results:

5.1 Year Wise distribution of Cited and Uncited Publications

The year wise distribution shows the increasing/decreasing trend of any type of publication and provides a clear picture of rise and fall of research production in a specific discipline. The popularity as well as remarkable growth of literature in a particular subject field is generally provided by displaying its pattern of publication year. Table-1 shows year-wise distribution of the cited and uncited publications in the field of reference services. The results of the study revealed that the total 1861 publications related to reference services have been published during 1947 to 2018. The total 1387 articles were found to be cited articles, accounting for 74. 56% of the total publications whereas only 474 were found to be uncited i.e., 25.44% of the total articles published in the field of reference service. There is variation in publication pattern throughout this period but from 1987 to 2016 each year produced mostly cited publications and minimum number of uncited publications. The maximum numbers of the cited documents are published in the year 2001 whereas in recent two consecutive years i.e., 2018 and 2017 we see mostly the uncited publications. The reason of being uncited in two recent years is quite obvious as it is being said that older the paper the higher its citations.

Table 1: Year Wise Distribution of Cited and Uncited Publications

S. No.	Cited	No. of publications	Uncited	No. of publications	Total
1.	2018	1 (0.03%)	2018	39 (8.21%)	40 (2.14%)
2.	2017	15 (1.08%)	2017	38 (8.07%)	53 (2.84%)
3.	2016	28 (2.04%)	2016	22 (4.64%)	50 (2.68%)
4.	2015	35 (2.57%)	2015	16 (3.36%)	51 (2.77%)
5.	2014	30 (2.16%)	2014	20 (4.23%)	50 (2.68%)
6.	2013	45 (3.24%)	2013	10 (2.11%)	55 (2.95%)
7.	2012	62 (4.48%)	2012	9 (1.89%)	71 (3.83%)
8.	2011	83 (5.98%)	2011	17 (3.59%)	100 (5.37%)
9.	2010	74 (5.38%)	2010	9 (1.89%)	83 (4.49%)
10.	2009	64 (4.65%)	2009	16 (3.37%)	80 (4.29%)
11.	2008	72 (5.11%)	2008	14 (2.98%)	86 (4.63%)
12.	2007	81 (5.82%)	2007	13 (2.74%)	94 (5.05%)
13.	2006	77 (5.58%)	2006	8 (1.68%)	85 (4.56%)
14.	2005	67 (4.85%)	2005	11 (2.35%)	78 (4.19%)
15.	2004	74 (5.38%)	2004	17 (3.59%)	91 (4.88%)
16.	2003	68 (4.98%)	2003	23 (4.85%)	91 (4.88%)
17.	2002	46 (3.34%)	2002	17 (3.59%)	63 (3.38%)
18.	2001	88 (6.35%)	2001	19 (4.09%)	107 (5.74%)
19.	2000	40 (2.84%)	2000	8 (1.68%)	48 (2.57%)
20.	1999	38 (2.77%)	1999	15 (3.12%)	53 (2.84%)
21.	1998	26 (1.87%)	1998	8 (1.63%)	34 (1.85%)
22.	1997	27 (1.91%)	1997	8 (1.63%)	35 (1.88%)
23.	1996	23 (1.67%)	1996	2 (0.48%)	25 (1.34%)
24.	1995	30 (2.11%)	1995	8 (1.63%)	38 (2.05%)
25.	1994	13 (0.94%)	1994	4 (0.87%)	17 (0.92%)
26.	1993	15 (1.08%)	1993	3 (0.62%)	18 (0.94%)
27.	1992	15 (1.08%)	1992	3 (0.62%)	18 (0.94%)
28.	1991	16 (1.14%)	1991	8 (1.63%)	24 (1.28%)
29.	1990	19 (1.34%)	1990	8 (1.63%)	27 (1.46%)
30.	1989	13 (0.94%)	1989	7 (1.49%)	20 (1.07%)
31.	1988	13 (0.94%)	1988	6 (1.25%)	19 (1.05%)
32.	1987	17 (1.27%)	1987	11 (2.35%)	28 (1.57%)
33.	1986	6 (0.42%)	1986	10 (2.11%)	16 (0.81%)
34.	1985	7 (0.53%)	1985	5 (1.01%)	12 (0.64%)
35.	1984	23 (1.67%)	1984	9 (1.87%)	32 (1.71%)
36.	1983	10 (0.74%)	1983	6 (1.25%)	16 (0.81%)
37.	1982	16 (1.14%)	1982	17 (3.59%)	33 (1.77%)
38.	1981	1 (0.03%)	1981	1 (0.24%)	2 (0.13%)
39.	1980	3 (0.26%)	1980	4 (0.87%)	7 (0.39%)
40.	1978	1 (0.03%)	1979	1 (0.24%)	2 (0.13%)
41.	1977	2 (0.17%)	1975	1 (0.24%)	3 (0.16%)
42.	1975	1 (0.03%)	1962	2 (0.48%)	3 (0.16%)
43.	1969	1 (0.03%)	1960	1 (0.24%)	2 (0.13%)
44.	1947	1 (0.03%)			1 (0.05%)
Total		1387 (100%)	Total	474 (100%)	1861 (100%)

5.2 Top Contributing Authors in Cited and Uncited Publications

An author explores different aspects of academic fields and communicates their findings through scholarly works and as a result builds up their reputation among the peers. They make substantial intellectual contribution in research and are liable to claim the authorship of that work in academic publishing. Authors play a very important role in the number of citations received by an article as it connects the research community with the actual knowledge and wisdom. Similarly, the number of citations is considered as an indicator of author's scientific impact. The productivity of authors can be measured by the number of records they publish. As per the analysis, there are a total of 160 authors who have contributed in cited publications related to reference services and 159 in uncited publications. Table-2 reveals the top 20 most contributing authors in the cited and uncited publications related to reference services. Among the cited publications, Luo, L., from San Jose State University, U.S. is the most contributing author with 15 publications whereas in case of uncited publications Berring, R.C., from University of California, U.S., Duckett, B., from Chartered Institute of Library and Information Professionals, U.S., Needleman, M. from Association for Information Science and Technology (ASIS&T), U.S. are on the top position with 3 publications each. Majority of the authors i.e., 90% in cited and 75% in uncited publication are from USA. Similarly, Amini, Derakhshanfar, Dolatabadi and Kariman, 2012 found that USA was a country of highest number of first author in their study as well.

Table 2: Top Contributing Authors in Cited and Uncited Publications

S. No.	Cited Authors	Affiliation	Place	No. of publications	Uncited Authors	Affiliations	Place	No. of publications
1	Luo, L.	San Jose State University.	San Jose, United States.	15 (1.08%)	Berring, R.C.	University of California.	Berkeley, United States.	3 (0.62%)
2	Pomerantz, J.	The University of North Carolina.	Chapel Hill, United States.	12 (0.84%)	Duckett, B.	Chartered Institute of Library and Information Professionals.	London, United Kingdom.	3 (0.62%)
3	Radford, M.L.	Rutgers University.	New Brunswick, United States.	12 (0.84%)	Needleman, M.	Association for Information Science and Technology (ASIS&T).	Maryland, United States.	3 (0.62%)
4	Connaway, L.S.	OCLC Research.	Dublin, United States.	10 (0.74%)	Barbara Watstein, S.	University of California.	Los Angeles, United States.	2 (0.48%)
5	McClure, C.R.	Florida State University.	Tallahassee, United States.	9 (0.68%)	Casey, A.M.	Embry-Riddle Aeronautical University.	Daytona Beach, United States.	2 (0.48%)
6	Ward, D.	University of Illinois.	Urbana, United States.	9 (0.68%)	Damian, I.P.M.	UNESP-Universidade Estadual Paulista.	Sao Paulo, Brazil.	2 (0.48%)
7	Lankes, R.D.	Syracuse University.	Syracuse, United States.	7 (0.53%)	Eichelberger, M.	Alfred C. O'Connell Library.	United States.	2 (0.48%)

8	Rader, H.B.	University of Louisville.	Louisville, United States.	7 (0.53%)	Ekwelem, V.O.	University of Nigeria.	Nsukka, Nigeria.	2 (0.48%)
9	Rothstein, S.	The University of British Columbia.	Vancouver, Canada.	7 (0.53%)	Frantz, P.	University of Oregon.	Eugene, United States.	2 (0.48%)
10	Anderson, D.C.	University of California.	Davis, United States.	6 (0.42%)	Hovde, K.	Northern Illinois University	DeKalb, United States.	2 (0.48%)
11	Dilevko, J.	University of Toronto.	Toronto, Canada.	6 (0.42%)	Ishihara, M.	Keio University.	Tokyo, Japan.	2 (0.48%)
12	Gross, M.	Florida State University.	Tallahassee, United States.	6 (0.42%)	Jacsó, P.	University of Hawaii.	Honolulu, United States.	2 (0.48%)
13	Jacsó, P.	University of Hawaii.	Honolulu, United States.	6 (0.42%)	Jia, P.	Queensborough Community College.	Bayside, United States.	2 (0.48%)
14	Shachaf, P.	Indiana University.	Bloomington, United States.	6 (0.42%)	Kresh, D.	Library of Congress.	Washington, D.C., United States.	2 (0.48%)
15	Whitlatch, J.B.	San Jose State University.	San Jose, United States.	6 (0.42%)	Luo, L.	San Jose State University.	San Jose, United States.	2 (0.48%)
16	Janes, J.	University of Washington.	Seattle, United States.	5 (0.37%)	Miller, W.	Florida Atlantic University.	Boca Raton, United States.	2 (0.48%)
17	Moyo, L.M.	Pennsylvania State University.	University Park, United States.	5 (0.37%)	Mitchell, E.	Dickinson College.	Pittsburgh, Carlisle, United States.	2 (0.48%)
18	Nicholson, S.	Syracuse University School of Information Studies.	Syracuse, United States.	5 (0.37%)	Pierson, M.	State Archives Division.	United States.	2 (0.48%)
19	Rockman, I.F.	California State University.	East Bay, Hayward, United States.	5 (0.37%)	Relyea, H.C.	Congressional Research Service.	Washington, D.C., United States.	2 (0.48%)
20	Sloan, B.	University of Illinois.	United States.	5 (0.37%)	Rothstein, S.	The University of British Columbia.	Vancouver, Canada.	2 (0.48%)

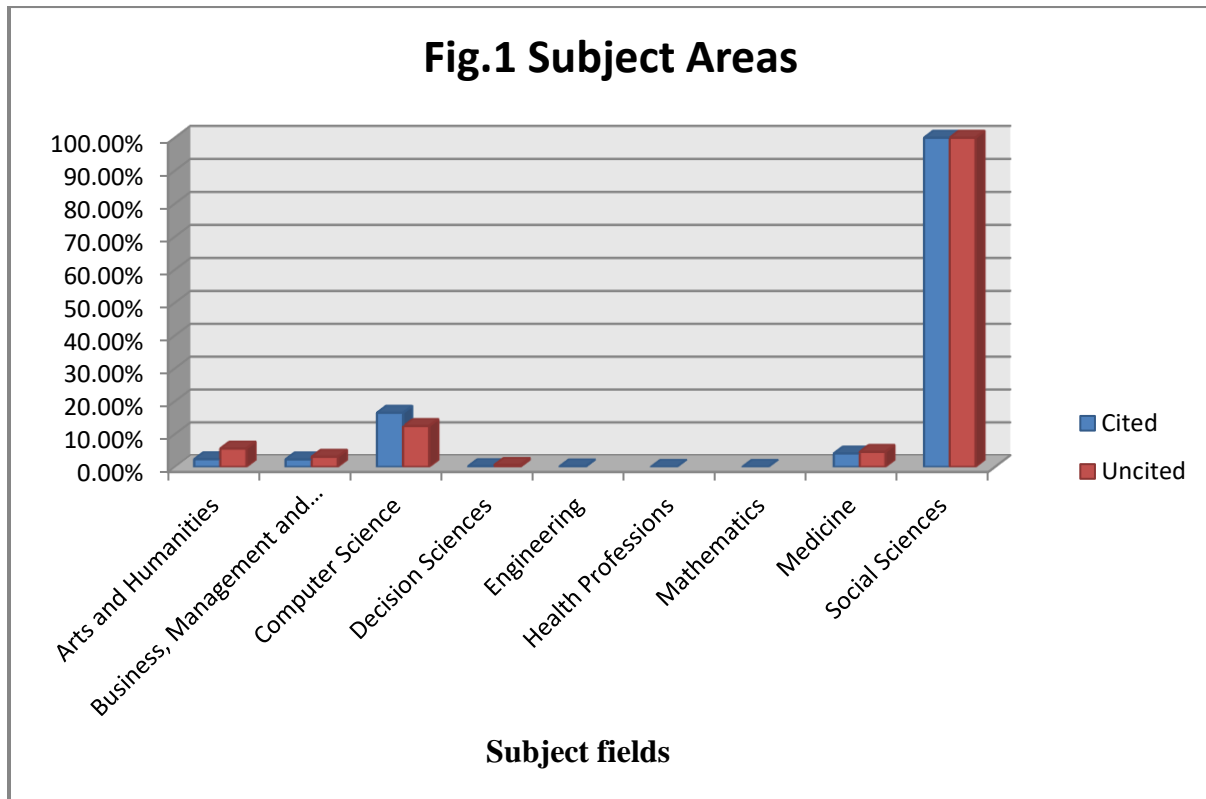
5.3 Subject areas of the Articles

A subject area has been receiving increased attention in citation metrics and Scopus also provide a comprehensive subject categorization of universe of subjects. Today, many subjects have both interdisciplinary and multidisciplinary character. A multidisciplinary character of the subject refers to contrasting disciplinary perspective in an additive manner. It involves little interaction across discipline. Whereas, the interdisciplinary character of the subject denotes combination of two or more disciplines to a new level of integration. Table-3 deals with Scopus subject categories of cited and uncited publications. It has been revealed from the analysis that apart

from main subject i.e. Social sciences, most of the cited as well as uncited publications belong to computer science subject area. The cited publications have more three subjects in comparison to uncited publication and these subjects include Engineering, Health Professions and Mathematics. Thus, it is clear that cited publications involve more number of subject areas in comparison to uncited publications because participation of a number of subjects usually attracts more citations as the audience of other discipline also find such papers useful for their subject interest.

Table 3: Subject Areas

S. No.	Cited	No. of publications	Uncited	No. of publications
1.	Arts and Humanities	32 (2.37%)	Arts and Humanities	27 (5.62%)
2.	Business, Management and Accounting	33 (2.31%)	Business, Management and Accounting	15 (3.12%)
3.	Computer Science	229 (16.52%)	Computer Science	59 (12.48%)
4.	Decision Sciences	3 (0.26%)	Decision Sciences	3 (0.62%)
5.	Engineering	2 (0.17%)	Medicine	22 (4.61%)
6.	Health Professions	1 (0.03%)	Social Sciences	474 (100%)
7.	Mathematics	1 (0.03%)		
8.	Medicine	57 (4.11%)		
9.	Social Sciences	1387 (100%)		



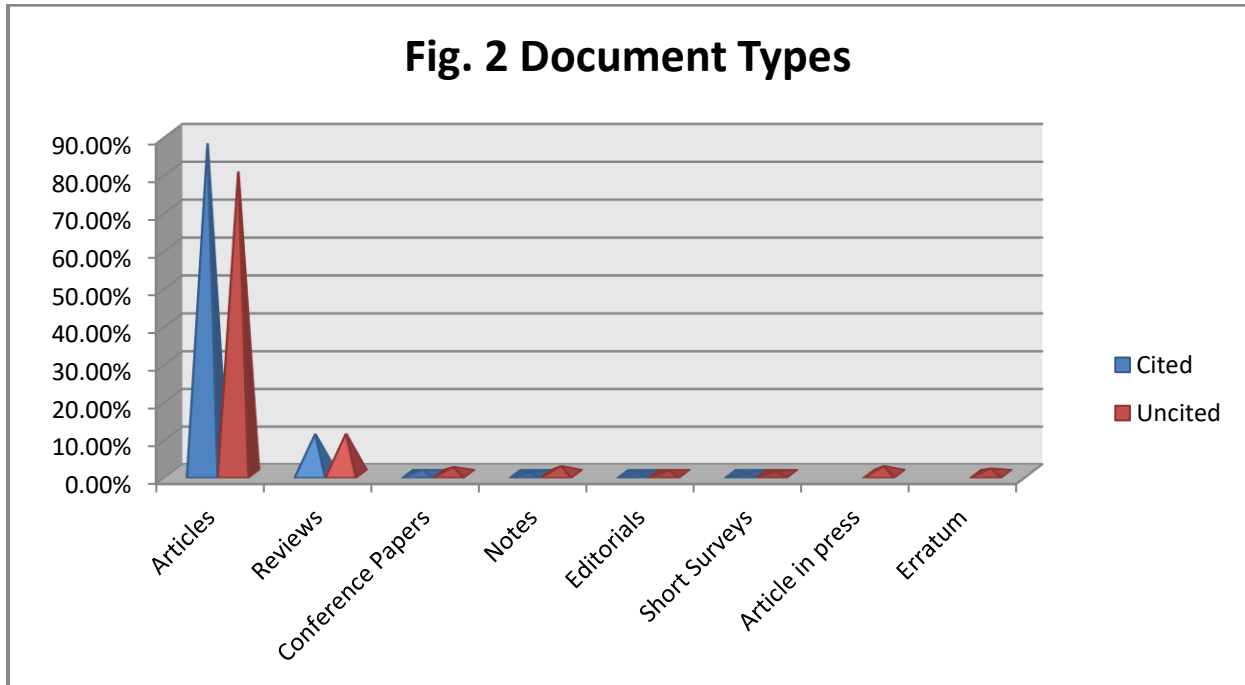
5.4 Document Type

The coverage of the Scopus focuses on primary document types like that of serial publications and has not contained secondary document for e.g. book reviews. The analysis of document types in citation study is important to test how certain type of documents is related to citation and

readership counts and the reason of differences in the patterns across fields. Table-4 shows the type of documents among cited and uncited publications. The cited publications included six types of documents whereas uncited contained eight types. Most of the cited (87.59%) as well as uncited publications (80.17%) are articles followed by reviews and so on. Thus, it has been found that majority of the publications are in the form of articles because the data was restricted to only journals. Though the researchers restricted the data to only journals but still data related to document type shows conference papers because conference material is indexed by Scopus in two different ways like as issues of regularly published journals or as dedicated conference proceedings.

Table 4: Document Type

S. No.	Cited	No. of publications	Uncited	No. of publications
1.	Articles	1215 (87.59%)	Articles	380 (80.16%)
2.	Reviews	148 (10.67%)	Reviews	51 (10.77%)
3.	Conference Papers	14 (1.07%)	Articles in Press	10 (2.11%)
4.	Notes	5 (0.37%)	Notes	10 (2.11%)
5.	Editorials	4 (0.23%)	Conference Papers	9 (1.87%)
6.	Short Surveys	1 (0.07%)	Erratum	7 (1.49%)
7.			Editorials	4 (0.87%)
8.			Short Surveys	3 (0.62%)
	Total	1387 (100%)	Total	474 (100%)



5.5 Top Contributing Journals of Cited and Uncited Publications

Scholarly journals function as stable and apparent means for the presentation, investigation, and discussion of research. The importance of a journal in a specific subject field is measured by the amount of publication and their number of citations. Analysis disclosed that all the cited publications are published in a total of 111 journals whereas uncited are published in a total of 96 journals. Table-5 provides top 20 considering journals which published the cited and uncited

publications. Maximum number of both the cited (22.81%) and uncited (21.97%) publications are published in Reference Librarian journal.

Table 5: Top Contributing Journals of Cited and Uncited Publications

S. No.	Cited	No. of publications	Uncited	No. of publications
1.	Reference Librarian	317 (22.81%)	Reference Librarian	104 (21.97%)
2.	Reference Services Review	179 (12.95%)	Reference Services Review	32 (6.72%)
3.	Reference And User Services Quarterly	77 (5.58%)	Internet Reference Services Quarterly	21 (4.47%)
4.	Internet Reference Services Quarterly	67 (4.85%)	Evidence Based Library And Information Practice	19 (4.09%)
5.	Medical Reference Services Quarterly	42 (3.01%)	Medical Reference Services Quarterly	19 (4.09%)
6.	Journal Of Academic Librarianship	41 (2.97%)	Legal Reference Services Quarterly	15 (3.12%)
7.	College And Research Libraries	36 (2.51%)	Library And Information Science	13 (2.74%)
8.	Journal Of Library Administration	34 (2.44%)	Library Philosophy And Practice	13 (2.74%)
9.	Electronic Library	31 (2.24%)	Community And Junior College Libraries	11 (2.35%)
10.	Library Review	29 (2.07%)	Library Review	11 (2.35%)
11.	Library And Information Science Research	23 (1.67%)	Science And Technology Libraries	11 (2.35%)
12.	Public Services Quarterly	22 (1.54%)	Music Reference Services Quarterly	8 (1.63%)
13.	Library Hi Tech	21 (1.52%)	Reference And User Services Quarterly	8 (1.63%)
14.	Library Trends	21 (1.52%)	Journal Of Library Administration	7 (1.49%)
15.	Journal Of Library And Information Services In Distance Learning	18 (1.26%)	Serials Librarian	7 (1.49%)
16.	New Library World	18 (1.26%)	Library Hi Tech News	6 (1.25%)
17.	College And Undergraduate Libraries	17 (1.27%)	Public Services Quarterly	6 (1.25%)
18.	Legal Reference Services Quarterly	17 (1.27%)	Collection Building	5 (1.01%)
19.	Science And Technology Libraries	17 (1.27%)	College And Undergraduate Libraries	5 (1.01%)
20.	Library Management	15 (1.08%)	International Information And Library Review	5 (1.01%)

5.6 Top Contributing Institutions in Cited and Uncited Publications

In academics affiliations are increasingly recognized as facilitating knowledge exchange centres are paired well for research and development activities. Multiple affiliations are another factor in the international collaboration of academic research as it measures the institutional performance and their contribution in research implications. The overall results of the study showed that 160 institutions are contributing in cited and 160 in uncited publications related to reference services. Table 6 disclosed the top 20 contributing institutions in cited and uncited publications and found that among the affiliations of highly cited publications, University of Illinois at Urbana-Champaign and San Jose State University are the top most contributing institution with 26 publications each. On the other hand among the affiliations of uncited publications, City University of New York, Library of Congress and Keio University are topping the list as contributing institutions with 8 publications each.

Table 6: Top Contributing Institutions in Cited and Uncited Publications

S. No.	Cited	No. of publications	Uncited	No. of publications
1.	University of Illinois at Urbana-Champaign	26 (1.87%)	City University of New York	8 (1.63%)
2.	San Jose State University	26 (1.87%)	Library of Congress	8 (1.63%)
3.	Pennsylvania State University	20 (1.47%)	Keio University	8 (1.63%)
4.	University of California, Los Angeles	19 (1.34%)	University of Illinois	7 (1.49%)
5.	Syracuse University	18 (1.26%)	University of Illinois at Urbana-Champaign	5 (1.01%)
6.	Rutgers, The State University of New Jersey	18 (1.26%)	University of California, Los Angeles	5 (1.01%)
7.	The University of North Carolina at Chapel Hill	17 (1.27%)	Wayne State University	4 (0.87%)
8.	Florida State University	14 (1.07%)	The University of British Columbia	4 (0.87%)
9.	University at Albany State University of New York	14 (1.07%)	University at Albany State University of New York	4 (0.87%)
10.	Texas A and M University	14 (1.07%)	University of Oregon	4 (0.87%)
11.	University of Illinois	13 (0.94%)	Queensborough Community College	4 (0.87%)
12.	Kent State University	13 (0.94%)	University of Toronto	4 (0.87%)
13.	The California State University	13 (0.94%)	Washington State University Pullman	4 (0.87%)
14.	Indiana University	12 (0.84%)	Rutgers, The State University of New Jersey	4 (0.87%)
15.	Ohio State University	11 (0.77%)	SIRSI Corporation	3 (0.62%)
16.	University of Texas at Austin	11 (0.77%)	University of Colorado at Boulder	3 (0.62%)
17.	University of Washington, Seattle	11 (0.77%)	McGill University	3 (0.62%)
18.	University of Maryland	11 (0.77%)	Washington State University Vancouver	3 (0.62%)
19.	University of Oklahoma	11 (0.77%)	Nanyang Technological University	3 (0.62%)
20.	Western University	10 (0.74%)	James Madison University	3 (0.62%)

5.7 Top Contributing Countries

The contributing country is an important aspect for the advancement of scientific research and thus it becomes essential to understand that to what extent this factor is influencing the research publications. Articles with number of collaborative countries are more likely to get citations in comparison to those having fewer countries represented. Analysis of the overall results found that there are a total of 51 countries contributed in cited publication while as in uncited publications, a total of 43 countries have produced their publications. Table 8 shows the top 20 contributing countries in the publications related to reference services and revealed that most of the cited (78.39%) and uncited (66.07%) publications are from USA. This finding is not surprising as same outcomes were revealed in the study conducted by Kolle, Vijayashree and Shanakarappa, 2017; Chuang and Ho, 2014; Eshraghi et al., 2013.

Table 7: Top Contributing Countries

S. No.	Cited	No. of publications	Uncited	No. of publications
1.	United States	1087 (78.39%)	United States	313 (66.07%)
2.	Canada	58 (4.14%)	Canada	22 (4.61%)
3.	United Kingdom	40 (2.84%)	Japan	13 (2.74%)
4.	Australia	22 (1.54%)	Nigeria	12 (2.57%)
5.	China	19 (1.34%)	United Kingdom	9 (1.87%)

6.	New Zealand	12 (0.84%)	Australia	8 (1.63%)
7.	Nigeria	12 (0.84%)	Spain	6 (1.25%)
8.	India	10 (0.74%)	Brazil	4 (0.87%)
9.	Malaysia	9 (0.68%)	China	3 (0.62%)
10.	Spain	8 (0.57%)	Germany	3 (0.62%)
11.	Pakistan	7 (0.53%)	Ghana	3 (0.62%)
12.	Singapore	6 (0.42%)	India	3 (0.62%)
13.	Iran	5 (0.37%)	Italy	3 (0.62%)
14.	Jamaica	5 (0.37%)	Malaysia	3 (0.62%)
15.	Japan	5 (0.37%)	Pakistan	3 (0.62%)
16.	South Korea	5 (0.37%)	Singapore	3 (0.62%)
17.	Taiwan	5 (0.37%)	Croatia	2 (0.48%)
18.	Norway	4 (0.23%)	Cuba	2 (0.48%)
19.	Croatia	3 (0.26%)	France	2 (0.48%)
20.	Cuba	3 (0.26%)	Iran	2 (0.48%)

5.8 Top Contributing Funding Agencies

Funding agencies are a government or non-government bodies which provide monetary grants for scientific researches in science & technology, social sciences, arts and humanities, etc. These research funding agencies perform a very commendable role in a research by encouraging and supporting institutions to develop research in various disciplines. It publishes policies and procedures to address misconduct in research. It has been observed from the overall analysis that all the highly cited publications are sponsored by a total of 58 funding agencies whereas uncited publications are sponsored by 28 funding agencies. Table 9 reveals the top 20 funding agencies which sponsored the cited and uncited publications of their concerned areas. Among all the contributing agencies in cited publications, National Science Foundation (NSF) was found as the top most contributing funding agency with 4 publications. Whereas, in case of uncited, publications each top 20 funding agencies sponsored single paper as represented in the table 8.

Table 8: Top Contributing Funding Agencies

S. No.	Cited	No. of publications	Uncited	No. of publications
1	National Science Foundation (NSF)	4 (0.23%)	Academy Health	1 (0.24%)
2	Institute of Museum and Library Services (IMLS)	2 (0.17%)	Arts and Humanities Research Council (AHRC)	1 (0.24%)
3	National Aeronautics and Space Administration (NASA)	2 (0.17%)	CMC Microsystems (CMC)	1 (0.24%)
4	Online Computer Library Center (OCLC)	2 (0.17%)	City University of New York (CUNY)	1 (0.24%)
5	Rutgers, The State University of New Jersey	2 (0.17%)	Google	1 (0.24%)
6	A. Alfred Taubman Medical Research Institute	1 (0.03%)	Illinois Program for Research in the Humanities, University of Illinois at Urbana-Champaign (IPRH)	1 (0.24%)
7	Advanced Research Projects Agency (ARPA)	1 (0.03%)	Joint Information Systems Committee (JISC)	1 (0.24%)
8	American College of Veterinary Internal Medicine (ACVIM)	1 (0.03%)	King's College London	1 (0.24%)
9	American Laryngological Association (ALA)	1 (0.03%)	Ministry of Education (MOE)	1 (0.24%)
10	Appalachian State University (ASU)	1 (0.03%)	Nanyang Technological University (NTU)	1 (0.24%)

11	Bar-Ilan University	1 (0.03%)	National Aeronautics and Space Administration (NASA)	1 (0.24%)
12	Carnegie Foundation for the Advancement of Teaching	1 (0.03%)	National Aerospace Science Foundation of China	1 (0.24%)
13	Catholic University of America (CUA)	1 (0.03%)	National Research Foundation of Korea (NRF)	1 (0.24%)
14	Center for Teaching and Learning, Boise State University (CTL)	1 (0.03%)	National University of Ireland (NUI)	1 (0.24%)
15	City University of New York (CUNY)	1 (0.03%)	New York State Education Department (NYSED)	1 (0.24%)
16	Columbia University	1 (0.03%)	Northwestern University (NU)	1 (0.24%)
17	Foundation for the National Institutes of Health (FNIH)	1 (0.03%)	Research and Development	1 (0.24%)
18	Goddard Space Flight Center (GSFC)	1 (0.03%)	U.S. Department of Energy (DOE)	1 (0.24%)
19	Harvard Graduate School of Education (HGSE)	1 (0.03%)	U.S. General Services Administration (GSA)	1 (0.24%)
20	Health Sciences Center, University of Oregon	1 (0.03%)	U.S. National Library of Medicine (NLM)	1 (0.24%)

5. 9 Top Searchable Keywords

Keywords aid the indexers as well as search engines in order to discover relevant documents. If database search engines can find the researcher's work then the readers will also be able to find that work. This will increase the number of people reading the research work and likely lead to more citations. Keyword must be such that represent the content of the work. Table 10 shows the top 20 searchable keywords in searching documents related to reference service field. It is found from the analysis that all the cited publications and uncited publications are searchable by total 160 keywords. Maximum number of the cited publications (27.11%) and uncited publications (20.42%) are searchable by the keyword Reference Services. It is quite obvious that if the publications are related to the reference services then the most commonly used keyword to search them will also be reference service itself.

Table 9: Top Searchable Keywords

S. No.	Cited	No. of publications	Uncited	No. of publications
1.	Reference Services	377 (27.11%)	Reference Services	97 (20.42%)
2.	Academic Libraries	213 (15.36%)	Academic Libraries	41 (8.63%)
3.	Information Services	91 (6.55%)	Virtual Reference	22 (4.61%)
4.	Libraries	90 (6.42%)	Libraries	20 (4.23%)
5.	Virtual Reference	84 (6.02%)	Reference Service	20 (4.23%)
6.	Internet	63 (4.51%)	Reference	18 (3.74%)
7.	Librarians	55 (3.94%)	Information Services	16 (3.36%)
8.	Reference Service	55 (3.94%)	Internet	15 (3.12%)
9.	Library Services	52 (3.74%)	Library	14 (2.98%)
10.	Reference	51 (3.61%)	Library Services	14 (2.98%)

6. PRACTICAL IMPLICATIONS OF THE STUDY

The study examined and compared the cited and uncited publications in the field of reference services. The scholars and practitioners in the field of reference and information services or those who are interested in studying the subject area will find the present research helpful and relevant in the following aspects:

- For finding out the literature along with the various specialized areas in the field of reference and information service to comprehend the trend of research in the field.
- For tracing the number of cited articles as well as their characteristics of being highly cited so that researchers may understand and adopt such characteristics for producing quality research and hence higher citations.
- To understand the gap between the number of cited and uncited articles and the reasons which lead to less citations of the publications. This may result in pursuing those efforts which can fill the identified gap and pay special attention to the reasons of less citations prevailing in the research field of reference services.
- To find the core publications which will be helpful in compiling a good quality literature review for those who are undertaking researches in area of reference service.
- To explore the highly contributing author(s) in field of reference and information service so that a pool of researchers and practitioners can be developed to understand the issues pertaining to the concepts of reference service and its various facets.

Hence, the present study tried to give an overall picture of the existing position of research in the field of reference services. The cited and uncited articles have been identified for illustrating the pathway of the various patterns of research in the field including its quality and impact. Consequently, the researchers may adopt these methods and characteristics of the research trends and improve their research aptitude for quality researches in future.

7. CONCLUSION

Citation metrics are being used to measure the scientific impact and quality of research. It helps to identify the constituents of the concept of scientific quality and can be used as an effective method to identify the core documents in a specific subject field. There may be some cited and uncited publications among the whole documents related to a particular discipline. The examination of these cited and uncited publications by applying different citation metrics may disclose the scientific progress and generate the interest in that specific subject area. Hence, an attempt has been made in the present study to discover and differentiate the cited and uncited publications in the field of reference services by using different citation parameters based on scopus database including year, author, institutions, countries, funding agencies, keywords, document types, etc. The analysis of the data found that most of the documents related to reference services were cited publication and that majority of the cited articles are published in the year 2001 whereas two recent consecutive years i.e., 2018 and 2017 has produced mostly uncited publications which is quite obvious because older papers tend to get higher citations. Luo, L., from San Jose State University, U.S. was found as the most contributing author in cited publications while Berring, R.C., from University of California, U.S., Duckett, B., from Chartered Institute of Library and Information Professionals, Needleman, M. from Association for Information Science and Technology (ASIS&T) U.S. are leading the list of contributing authors in uncited publications. The cited publications in comparison to uncited publications include more subject fields and due to the fact, a number of subject fields are involved which can attract more audience from other disciplines for their subject interests and hence many citations. Despite of these differences, majority of cited and uncited publications are from USA as revealed by many of the previously conducted studies. Besides, most of the cited as well as uncited documents are in non-open access mode, published in Reference Librarian and apart from their main subject i.e. social sciences, both cited and uncited publications belong to computer science subject area.

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