

## **Mapping of the International Journal of Information Science and Management (2003-2009): A Citation Study**

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### **Abstract**

The study is based on 1808 citations appended to 101 research articles published in 7 volumes of 14 issues appeared in the *International Journal of Information Science and Management (IJISM)* during 2003 to 2009. Earlier, this journal was known (before 2008) as the *Iranian Journal of Information Science and Technology (IJIST)*. Here, the author is considering the latest title (IJISM) for the study. The study reveals that totally 190 authors have contributed 101 articles during 2003 to 2009. The majority of the articles were published in 2007, and more numbers of 32 (16.84%) authors had contributed 14 articles in 2006. The greatest number of (49.47) authors contributed with two-authored papers and authors' collaboration was found to be 0.80. The average number of authors per volume was 27.14. *IJISM* contained 1808 references out of which 1573 are print-citations and 235 are electronic-citations in 101 articles. This means that every issue published approximately 14.43 articles and each article had an average of 12.43 percent of print references and 1.86 percent of electronic citations. It was noted that authors had preferred print information for citations and journals were the most preferred sources among the print and electronic references compared to books, proceedings, theses and other sources. The country wise distributions of articles were 17 countries. Out of total 190 contributions, the highest numbers i.e., 157 have been contributed from Iran, which stands in the first rank among the contributors. UK and Germany stand in the second and third place respectively, followed by India, Nigeria, China, Bangladesh and Malaysia which are in the fourth place with a contribution of 2 articles each. Similarly, 9 countries are together in the fifth rank with a contribution of one article each.

**Keywords:** Citation Analysis, Bibliometrics, Mapping of Journal, IJISM, RICeST, Iran.

### **Introduction**

Library and Information Science is a multidisciplinary multicultural field of activity. It has the capacity to assimilate relevant ideas from different fields of knowledge. It incorporates practices of many authors from different fields of knowledge. The recorded knowledge gained from a library collection is a surrogate for cultural transformation of

knowledge from place to place. In fact, the knowledge transformation that occurs among professionals in many fields of knowledge is primarily through records. Periodicals are sensitive indicators of the emerging new ideas in any discipline. They reveal the problems requiring solution, research patterns to solve problems and the practices fixed to various areas etc. A careful evaluation of periodical literature may indicate a complete picture of the discipline, the profession to which it is related and everything connected with them. Citation analysis is the examination of the frequency and patterns of citations in articles and books. It uses citations in scholarly works to establish links to other researchers' works. It is one of the most widely used methods of Bibliometrics. So far, a number of citation analysis studies have been conducted by eminent writers. There have been some notable studies by Garfield (1983), Slutz (1997), Aksnes (2006), Gooden (2001), Megnigbeto (2006), Okiy (2003), Ramesh & Nagaraju (2000), Rethlefsen (2007), Olatokun & Olayinka (2009), Baradar, Tajdaran, Musavi & Abedi (2009), Riahinia (2010), Sotudeh (2010), and Asefeh (2010). The present study deals with the citation analysis of various articles published in *IJISM*—an accredited journal on Library and Information Science in Iran.

### About IJISM

*IJISM* has been approved by the Ministry of Science, Research and Technology, I.R. of Iran. Being one of the most active research institutions of Iran, the Regional Information Center for Science and Technology (RICeST) disseminates its information services among the scientific society at national and international levels. RICeST is located in Shiraz, the cultural capital of Iran. This center was planning to put into print a journal discussing the latest developments in Information Management. As a result, in 2003 the *Iranian Journal of Information Science and Technology (IJIST)* was published. Later in 2008, this journal was renamed as *IJISM (International Journal of Information Science and Management)*. This is an international peer-reviewed biannual periodical completely dedicated to the field of Library and Information Science serving the professional community by publishing papers on the fields of Scientometrics, Webometrics, Library and Information Science, Information Management, Informatics and Information Technology, duly encouraging authors-young and old around the globe (Mehrad, 2008). This study aims to analyze the citations of such a leading journal in the field of Library and Information Science so as to know the ranking of authors, types of documents, geographical location of publication etc.

### Review of Literature

There are many citation and bibliometric studies published on single journals. Here, some studies in citation analysis of the single journals have been presented chronologically. Zemon & Bahr (1998), examined articles published by college librarians in *College & Research Libraries* and the *Journal of Academic Librarianship* from 1986 to 1996 to

provide a profile of authors and to identify factors that contributed to their success in publishing. Similarly, Bao (2000) evaluated 682 refereed articles from *College & Research Libraries (C&RL)* and *Journal of Academic Librarianship (JAL)* between 1990 and 1999. The study reveals that various research questions remain to be studied and reported. This also presents a challenge and an opportunity for academic librarians who wish to engage in research. Das & Sen (2001) analyzed 1049 citations appended to 34 research articles of the *Journal of Biosciences* for the year 2000. It was found that out of the total citations, a journal article comprises 85.89 percent and monographs 10.1 percent. Stern (2004), used graphs to show the number of citations a group of journal articles in the field of Ecological Economics received during 1989 to 2003.

In the RN Barr library, Rethlefsen & Wallis (2007) assessed the Minnesota Department of Health official publications' citation patterns to determine the publication types cited most often in public health. Also, the most heavily cited journal titles were studied. Javed & Shah (2008), analyzed 437 citations appeared in 32 research articles in two issues of the *Rawal Medical Journal*. The study revealed that 49.52 percent of citations concerned journal articles and the rest concerned other source types. Similarly, Kumara & Surendra (2008) studied 8093 citations given in the *Journal of Oilseeds Research* published during 1993 to 2004. The study covers the analysis of authorship patterns of citations along with calculation of collaboration coefficient. Geographical distribution of cited references has also been analyzed.

Another study was carried out on *Library Herald* by Riahinia (2009) who analyzed 120 articles published during 2003 to 2007. The study reveals that among 130 examined materials there was a mean of 26 for each year. Out of total publications 88 percent of contributors were from India and there were only 16 international contributions during the five years. Similarly, Rosy (2009) carried out citation analysis of 593 articles published in *Library Trends* during 14 years. The journal contained 15662 references for the study period of which 13783 are p-citations and 1879 are e-citations. Authors consulted 44.04 percent of p-journals as against 11.82 percent of e-journals. Study showed that 88.14 percent of other web references are used and also female contribution accounts more than male contributions. Thamaraiselvi & Kaliammal (2009) examined the citation linking of journal articles and the importance of citation linking was discussed with reference to the e-journal Knowledge Portal of ACM. Afshar, Abdulmajid & Danesh (2009) surveyed 386 articles from 21 journals having 4915 citations. Data was gathered using a check list and results were found with Bradford's law and collaboration rate formula. Results showed that authors of articles in the *Journal of Research in Medical Sciences* had the average number of collaboration rate and tended to teamwork. Also, citations to periodicals follow Bradford's law.

Ghane (2010) studied the Journals Impact Factor (JIF), Author Self-Citation (ASC),

and Journal Self-Citation (JSC). The study finds that the JIF is affected by both ASC and JSC for 51 Persian journals on Engineering during 2002 to 2006. The results show that mean rates for JSC and ASC are 41% and 66%, respectively. The correlation between JSC and ASC with IF is statistically significant. There was no correlation between JIF and the number of articles. The study suggests that Persian journals' editorial boards in the Engineering field implement a policy regarding article selection as well as authors' citation behavior. Hadimani & Rajgoli (2010) analyzed 10553 citations appended to 538 papers published during 2004 to 2008 in the *Journal of Applied Engineering in Agriculture*. The study examined year-wise distribution of papers, authorship patterns, length of papers, degree of collaboration among authors, year-wise appearance of citations, sources used by the authors and ranked list of authors by geographical location.

Other similar kinds of bibliometric studies were carried out on single journals. The first review of a single journal on bibliometric studies was written by Tiew in 1997 (Anyi, Zainab & Anuar, 2009). Another study was carried out by Tiew, Abdullah & Kaur (2002) on the *Malaysian Journal of Library & Information Science* from 1996 to 2000. It examined the average number of references per article, length of articles, type of articles, author collaborations, affiliations and geographical distribution of collaborators. The study reveals that 39.5 percent of articles contained author's self-citation while the rate of journal self-citation is found to be 27.6 percent and most of the articles contained no formal acknowledgement. Similar type of study was performed by Koley & Sen (2003) covering 457 citations appended to 26 research articles published in the four issues of the quarterly *Indian Journal of Physiology and Allied Sciences*. Of the citations, 76.81% relate to journal articles, 18.59% to monographs, and the rest to conference papers, theses, etc.

The bibliometric study on the *Journal of Food Science and Technology* (Vijay & Raghavan, 2007) analyzed 779 published articles along with five volumes (37 to 41). A similar study was also carried out for the maiden volume of the same journal for the year 1964. The number of contributions and their distribution in different volumes, authorship patterns, foreign and Indian author contributions, institution wise contribution, citations, type of publications cited, geographical distribution of contributions and physical growth of the journal have been analyzed. Bandyopadhyay & Nandi (2008) find out the result of a bibliometric study covering issues of the *Indian Economic Review*. They examine authorship patterns and the degree of collaboration between authors and geographical distribution. The study analyzed 1653 citations appended to 68 research articles. Anyi, Zainab & Anuar (2009) analyzed bibliometric studies on single journals published between 1998 and 2008. Their study covers journals in various fields which are considered important i.e., Arts, Humanities and Social Sciences, Medical and Health Sciences, Sciences and Technology, and Library and Information Science. An Asian and African contribution was high and the number of bibliometrists from India and consequently the

coverage of Indian journals were high; the quality of the journals and their importance either nationally or internationally were inferred from their indexation status. Kulkarni, Poshett & Narwade (2009) attempted to analyze the *Indian Journal of Pharmaceutical Education and Research*. Their study reveals that journals are the predominant citation sources followed by books. The majority of the scientists preferred to publish research papers in multiple authorships and there is considerable time lag in publication of articles from the date of receipt of the papers. The *Indian Journal of Pure and Applied Mathematics'* bibliometric study was carried out by Narang & Kumar (2010) who analyzed 4798 citations appended to 400 articles in five volumes-34 (2003) to 38 (2007) and maiden volume (1970) of the same journal was studied to observe the number of contributions and their distribution in different volumes, authorship patterns, foreign and Indian author contributions, citation analysis and number of pages used in each volume. A comparative study of articles published in 5 volumes vis-à-vis those in volume 1 has been done. Results show a decrease in the number of contributions in successive volumes. The most cited documents are articles from research journals. The numbers of foreign contributors were more than Indian contributors. Growth and popularity of the journal is showing mixed trends i.e., upward and downward progress.

### Objectives

The objectives of the study are as follows:

- To sketch the frequency of articles by volume.
- To examine the distribution of articles by contributors.
- To assess the authorship patterns by volume wise.
- To observe the length of papers.
- To study the chronological appearance of citations in the journal.
- To know the types of the documents cited.
- To understand the distribution of citations by volume.
- To analyze the citations of print and electronic sources.
- To find out the contributors by geographical location.

### Methodology

The required data for the study was collected from the open access online version of the journal for the period of 2003 to 2009. The articles were accessed from the [RiCeST-IJISM](#) website, which provides free online access to articles. The data obtained from the above website were recorded separately and a master spreadsheet containing 101 articles and 1808 bibliographical reference records were created manually with careful examination of duplicate records. This spreadsheet served as primary data input for analysis and interpretation. The references appended to each paper were carefully scanned and

tabulated. The following sections deal with the analysis of the data collected and presented under different table headings correlated to the objectives of the study. The formula used to calculate the degree of collaboration was formulated by Subramanyam (1983). It is a formula for determining the degree of author collaboration in a discipline.

The formula is as follows: 
$$C = \frac{N_m}{N_m + N_s} =$$

$N_m$  = number of multi-authored papers

$N_s$  = number of single- authored papers

Where, C= degree of collaboration in a discipline.

## Results and Discussion

### *Frequency-wise distribution of articles by volume*

Table 1 indicates the frequency wise distribution of articles in 7 volumes of the journal during 2003 to 2009. The table reveals that there are 101 articles from 14 issues out of which the highest number of articles (17, 16.83%) are published in volume 5 and the lowest number of articles are published (12, 11.88%) in the volume 3.

Table 1

*Frequency-wise Distribution of Articles by Volume*

Year	Volume*	No. of articles	Cumulative Total
2003	1	14 (13.86)	--
2004	2	14 (13.86)	28 (27.72)
2005	3	12 (11.88)	40 (39.60)
2006	4	14 (13.86)	54 (53.47)
2007	5	17 (16.83)	71 (70.30)
2008	6	15 (14.85)	86 (85.15)
2009	7	15 (14.85)	101 (100.00)
Total		101 (100.00)	101 (100.00)

\*Each volume consists of 2 issues (7x2= 14 issues)

Numbers in parentheses indicate percentage.

### *Distribution of articles by contributors*

Table 2 shows that volume-wise distribution of papers and the amount of contributions vary from year to year. In the year 2006, the highest numbers of 32 (16.84%) contributors had contributed 14 articles. In the year 2005, the minimum number of 22 (11.58%) authors had contributed 17 articles. As a whole, 190 contributors had contributed 101 articles which were published in the journal during 2003 to 2009.

Table 2

#### *Distribution of Articles by Contributors*

Year	Volume*	No. of articles	No. of contributors
2003	1	14 (13.86)	23 (12.10)
2004	2	14 (13.86)	24 (12.63)
2005	3	12 (11.88)	22 (11.58)
2006	4	14 (13.86)	32 (16.84)
2007	5	17 (16.83)	31 (16.32)
2008	6	15 (14.85)	30 (15.79)
2009	7	15 (14.85)	28 (14.74)
Total		101 (100.00)	190 (100.00)

\*Each volume consists of 2 issues (7x2= 14 issues)

Numbers in parentheses indicate percentage.

### *Distribution of authorship patterns volume-wise*

Table 3 presents data of the authorship patterns in different volumes of the journal. The study depicts that volume 5 has the highest number i.e. 17 (16.83%) and the lowest number of articles i.e. 12 (11.88) belongs to the volume 3. It also found that out of total 190 contributors, 94 (49.47%) contributors contributed two-authored papers which amounts to 47 (46.53%). The number of single-authored papers was 37 (37.00%) followed by three, four and five-authored papers, i.e., 10, 6 and one. The author's collaboration is found to be 0.80 and the degree of collaboration in two-authored papers (0.49) is the highest. Further, it was noted that the average number of authors per paper was 27.14.

Table 3

*Volume-wise Authorship Pattern*

No. of Authors	Authorship pattern per volume							Total papers	Total authors	Degree of collaboration
	2003	2004	2005	2006	2007	2008	2009			
One author	7	6	4	4	6	5	5	37 (36.63)	37 (19.47)	0.19
Two authors	6	6	6	6	9	7	7	47 (46.53)	94 (49.47)	0.49
Three authors	--	2	2	--	1	2	3	10 (9.10)	30 (15.78)	0.15
Four authors	1	--	--	4	1	--	--	6 (5.94)	24 (12.63)	0.12
Five authors	--	--	--	--	--	1	--	1 (0.99)	5 (2.63)	0.02
Total	14 (13.86)	14 (13.86)	12 (11.88)	14 (13.86)	17 (16.83)	15 (14.85)	15 (14.85)	101 (100.00)	190 (100.00)	--
Authors collaboration								0.80		
Average authors per volume								1.88		

Numbers in parentheses indicate percentage.

*Length of papers*

Table 4 presents the length of articles published in *IJISM* journal. Major portion of articles i.e., 52 (51.49%) is between 11 to 15 pages, followed by 6 to 10 pages in 28 (27.72%) articles. Whereas 16 papers are between 16 to 20 pages and 4 articles are more than 20 pages, only one article is between 1 to 5 pages with 15.84%, 3.96% and 0.99% respectively.

Table 4

*Length of the Papers*

No. of Pages	2003	2004	2005	2006	2007	2008	2009	Total	Percentage
1-5	0	0	0	0	1	0	0	1	0.99
6 to 10	2	6	4	4	5	4	3	28	27.72
11 to 15	11	6	6	7	6	6	10	52	51.49
16 to 20	1	1	2	2	4	4	2	16	15.84
More than 20	0	1	0	1	1	1	0	4	3.96
Total	14	14	12	14	17	15	15	101	100.00

*Distribution of citations by types*

The various types of sources used by the authors are shown in Table 5. It reveals the year-wise break-up of the sources. Among the cited references, 44.91% are journals and 16.04% are books followed by proceedings and theses 15.04%. The authors have preferred print information. The e-sources (13.00%) are also increasingly cited by authors. The remaining 11.01% are other reference sources in the form of magazines, newspaper articles, reports and unpublished work.



Table 5

*Distribution of Citations by Type*

Year	Books	Journal	Proceedings	Thesis	E-resources	Other*	Total citations
2003	67	81	40	11	17	37	253 (13.99)
2004	52	133	33	6	38	39	301 (16.65)
2005	37	107	11	4	35	23	217 (12.00)
2006	21	126	32	--	30	35	244 (13.50)
2007	38	106	53	9	44	31	281 (15.54)
2008	29	134	28	6	27	12	236 (13.05)
2009	46	125	28	11	44	22	276 (15.27)
Total	290 (16.04)	812 (44.91)	225 (12.44)	47 (2.60)	235 (13.00)	199 (11.01)	1808 (100.00)

Numbers in parentheses indicate percentage.

\*Others include magazines, newspaper articles, reports and unpublished work

*Distribution of citations by volume*

Table 6 shows the volume-wise distribution of references, which indicates that the 7 volumes (14 issues) of the journal contained 1808 references of which 1573 are print-citations and 235 are electronic-citations in 101 articles. It means that every issue published approximately 14.43 articles and each article has an average of 12.43 p-references and 1.86 e-citations. Year-wise analysis shows that the highest number of p-citations appeared in the year 2004 and the least in 2005. E-citations are frequently cited in the years 2007 and 2009 and the least in 2003.

Table 6

*Distribution of Citations by Volume*

Vol. No.	Year	No. of p-citations	No. of e-citations	No. of articles	% of p-citations/ Article	% of e-citations / Article	Total citations	Cumulative References
1	2003	236	17	14	13.05	0.94	253 (13.99)	--
2	2004	263	38	14	14.55	2.10	301 (16.65)	544 (30.64)
3	2005	182	35	12	10.07	1.94	217 (12.01)	771 (42.65)
4	2006	214	30	14	11.84	1.66	244 (13.50)	1015 (56.15)
5	2007	237	44	17	13.10	2.44	281 (15.54)	1296 (71.69)
6	2008	209	27	15	11.56	1.49	236 (13.05)	1532 (84.74)
7	2009	232	44	15	12.83	2.43	276 (15.26)	1808 (100.00)
Total		1573	235	101	87.00	13.00	1808 (100.00)	1808 (100.00)
Average		--	--	14.43	12.43	1.86	--	--

\*Each volume consists of 2 issues (7x2= 14 issues)

Numbers in parentheses indicate percentage.

*Distribution of print-citations*

Table 7 shows that journals are the preferred (812, 51.62%) cited sources among print references. The highest percent (8.52) of citations was from journals in 2008. Books are cited marginally (290, 18.44%) among the citations, with the highest percent (4.26) consulted in 2003. The greatest numbers of conference proceedings are consulted for citation in the year 2007 and the least in the year 2005. Similarly, more numbers of theses are cited in the year 2003 and 2009; no thesis was consulted in the year 2006. The other references were also most consulted in 2004 and least in 2008.

Table 7

*Distribution of Print-Citations*

Year	p-citations					
	Total citations	Books	Journal	Proceedings	Thesis	Other*
2003	236	67 (4.26)	81 (5.15)	40 (2.54)	11 (0.70)	37 (2.35)
2004	263	52 (3.31)	133 (8.46)	33 (2.10)	6 (0.38)	39 (2.48)
2005	182	37 (2.35)	107 (6.80)	11 (0.70)	4 (0.25)	23 (1.46)
2006	214	21 (1.34)	126 (8.01)	32 (2.03)	--	35 (2.23)
2007	237	38 (2.42)	106 (6.74)	53 (3.37)	9 (0.57)	31 (1.97)
2008	209	29 (1.84)	134 (8.52)	28 (1.78)	6 (0.38)	12 (0.76)
2009	232	46 (2.92)	125 (7.95)	28 (1.78)	11 (0.70)	22 (1.40)
Total	1573	290 (18.44)	812 (51.62)	225 (14.30)	47 (2.90)	199 (12.65)

Numbers in parentheses indicate percentage

\*Others include magazines, newspaper articles, reports and unpublished work

*Distribution of electronic-citations*

The various types of electronic sources used by authors for citation are shown in Table 8, which reveals the year-wise break-up of the e-sources. There are 78.30 percent of e-journals used by the researchers. Meager number of 2.98 percent of e-books is cited against 18.72 percent of other sources (magazines, newspaper articles, reports and unpublished work) cited in 7 years. However, 15.32 percent of e- journals are cited in 2009 and the least percent (5.96) was used in 2003. Similarly, 4.26 percent of citations are other types of references in 2004 and only 1.28 percent of total citations are during the year 2003 to 2006.

Table 8

*Distribution of Electronic-citations*

e-citations				
Year	Total citations	Journals	Books	Others*
2003	17	14 (5.96)	--	3 (1.28)
2004	38	28 (11.91)	--	10 (4.26)
2005	35	27 (11.49)	2 (0.85)	6 (2.55)
2006	30	25 (10.64)	2 (0.85)	3 (1.28)
2007	44	34 (14.47)	1 (0.43)	9 (3.83)
2008	27	20 (8.51)	1 (0.43)	6 (2.55)
2009	44	36 (15.32)	1 (0.43)	7 (2.98)
Total	235	184 (78.30)	7 (2.98)	44 (18.72)

Numbers in parentheses indicate percentage

\*Others include magazines, newspaper articles, reports and unpublished work

***Country-wise distribution of contributions***

Data related to the geographical distribution of articles from 17 countries is presented in Table 9. Out of total 190 contributions the highest number of 157 has been contributed by Iran, which stands in the first rank among the contributors. Next comes UK with 10 articles standing in the second rank. Germany stands in the third place with 4 papers followed by India, Nigeria, China, Bangladesh and Malaysia which rank fourth with 2 articles each. Similarly, the remaining 9 countries stand in the fifth rank with each country contributing only one article.

Table 9

*Country-wise Distribution of Contributions*

Country	Journal published by year and volume														Total	Rank
	2003		2004		2005		2006		2007		2008		2009			
	I	II	I	II	I	II	I	II	I	II	I	II	I	II		
Iran	10	8	8	10	11	9	14	17	9	18	10	13	10	10	157	1
UK	-	-	2	1	-	-	-	1	1	-	-	1	2	2	10	2
Germany	-	1	-	-	-	2	-	-	-	-	-	1	-	-	4	3
India	-	-	-	-	-	-	-	-	-	2	-	-	-	-	2	4
Nigeria	2	-	-	-	-	-	-	-	-	-	-	-	-	-	2	
China	-	-	-	2	-	-	-	-	-	-	-	-	-	-	2	
Bangladesh	-	-	-	-	-	-	-	-	-	-	2	-	-	-	2	
Malaysia	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	5
Czech republic	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1	
Australia	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1	
Sri Lanka	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1	
Oman	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1	
UAE	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	
Yemen	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1	
Sweden	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1	
Botswana	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1	
USA	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	
Total	12	11	11	13	11	11	14	18	11	20	13	17	13	15	190	

**Findings of the Study**

- The study reveals that 101 articles were published in 14 issues of 7 volumes from 2003 to 2009. The highest numbers of articles are published in 2007. It was noted that the average number of articles per volume was 14.42.

- In the year 2006, highest numbers of 32 (16.84%) contributors had contributed 14 articles. It was found that totally 190 contributors had contributed 101 articles during 2003 to 2009.

- The study depicts that volume 5 has the highest number of contributed articles. It reveals that 49.47 percent of contributors contributed two-authored papers and author collaboration was 0.80. Further, it was noted that the average number of authors per volume was 27.14.

- The majority of articles (51.49%) are between 11-15 pages. Only one article is between 1 to 5 pages.

- *IJISM (International Journal of Information Science and Management)* contained 1808 references of which 1573 were print-citations and 235 were electronic-citations in 101 articles, which means that every issue published approximately 14.43 articles and each article has an average of 12.43 percent of print references and 1.86 percent of electronic citations. It was noted that authors have preferred print information for citation.

- Study reveals that journals were the preferred citations among the print and electronic sources compared to books, proceedings, theses and others.

- The geographical distribution of contribution is from 17 countries. Out of total 190 contributions the highest number of 157 has been contributed by Iran, which stands in the first rank among the contributors. UK with 10 articles stands in the second rank. Germany stands in the third place with 4 papers followed by India, Nigeria, China, Bangladesh and Malaysia which are in the fourth rank with 2 articles each. Similarly, the remaining 9 countries stand in the fifth rank with each country contributing only one article.

### Conclusion

The study is based on 1808 citations appended to 101 research articles published in 7 volumes of 14 issues appeared in *IJISM* from 2003 to 2009. Citation analysis is the examination of the frequency and patterns of citations in articles and books. It uses citations in scholarly works to establish links to other researchers' works. It is one of the most widely used methods of Bibliometrics. This is an important field of Information Science because it represents a unique set of techniques for the monitoring and analysis of information sources and for the management of knowledge in social and organizational contexts. Citation analysis was used in studies for properties and behavior of recorded knowledge, analysis of the structure of scientific and research areas and for evaluation of research activity and administration of scientific information. Various statistical methods are applied to study the measure of authorship, citation and publication pattern and the relationship with scientific domains, research communities and the structure of specific fields. In this sense, citation analysis is also relevant for researchers, policy makers and also researchers outside the field of Library and Information Science. Today, numbers of studies are being done on citation study on various subjects. In this context, this study may provide new information emerging out of the citation study particularly of *IJISM* journal. This journal is one of the leading international peer-reviewed biannual periodicals completely dedicated to the field of Library and Information Science serving the professional community by publishing papers in the fields of Scientometrics, Webometrics, Library and Information Science, Information Management, Informatics and Information Technology in Iran. The findings must reveal various aspects of the characteristics and patterns of contributions of this journal. It is suggested that the journal's publication frequency be increased and authors from other parts of the world be encouraged to contribute their research work to the journal.

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