

Research Contributions in Malaysian Journal of Library and Information Science during 1996 - 2012

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Abstract

This article analyzed the various bibliometric components of the articles published in the Malaysian Journal of Library and Information Science from 1996 to 2012. Various quality aspects of the 279 articles published in the period were studied. The study demonstrates and elaborates on the various aspects of the journal, such as its distribution of article by year, authorship patterns, distribution of contributions by institution, subject distributions, citation patterns, length of article, and geographical distributions of authors. Analysis of data reveals that more number of research articles are published from Malaysia followed by India. Bibliometrics / Scientrometrics / Journal Studies and User Studies are leading subject areas have been carried out during this period. The highest number of contributions was published in the year of 2011. The maximum number of articles has been contributed by academic institutions. Citation analysis of 6779 citations includes finding out average number of citations per contribution. The average degree of author collaboration has been arrived at 0.645 during the study period.

Keywords: bibliometrics, Malaysian Journal of Library and Information Science, publication analysis, authorship patterns, journal studies, MJLIS, degree of collaboration

Introduction

Bibliometrics is a set of methods to quantitatively analyze academic literature. Citation analysis and content analysis are commonly used bibliometric methods. While bibliometric methods are most often used in the field of library and information science, bibliometrics have wide applications in other areas. Many research fields use bibliometric methods to explore the impact of their field, the impact of a set of researchers, or the impact of a particular paper. The term bibliometrics was coined by Alan Pritchard in a paper published in 1969, titled "Statistical Bibliography or Bibliometrics". He defined the term as "the application of mathematics and statistical methods to books and other media of communication".

An early example of a bibliometric study was statistical analysis of the literature of comparative anatomy from 1543 to 1860, done by counting book and journal titles, and grouping them by countries of origin and periods. In 1923, a study entitled "Statistical Analysis of the History of Science" was conducted by Hulme. His analysis was based on the entries in the English International Catalogue of Scientific Literature. Another study was the

work of Gross and Gross in 1927 in which they counted and analyzed the citations in articles from the Journal of the American Chemical Society and produced a list of journals deemed important to chemical education. Another prominent work was Bradford's 1934 article on the distribution of literature in lubrication research. It is an important part of the theoretical foundation of bibliometrics, "Bradford's Law of Scattering."

In 1948, Ranganathan, father of library science, coined the term "librametry", which historically appeared first and was intended to streamline the services of librarianship. Bibliometrics is analogous to Ranganathan's librametry, the Russian concept of Scientrometrics, Infometrics, and sub disciplines like Econometrics, Psychometrics, Sociometrics, Biometrics, Technometrics, Chemometrics, and Climetrics, where Mathematics and Statistics are applied to study and solve problems in their respective fields. Scientrometrics is now used for the application of quantitative methods to the history of science and overlaps with Bibliometrics to a considerable extent.

Malaysian Journal of Library and Information Science (MJLIS)

The Malaysian Journal of Library and Information Science is an international online journal. It is a scholarly journal in English devoted to the various fields of Library and Information Science that was first published bi-annually in 1996. The journal publishes original research articles in the field of Library and Information Science (LIS) as well related domains that encapsulate information and knowledge. It also encourages contribution about professional policies, practices, principles and progress in the LIS fields. The journal aims to provide a forum for communications amongst LIS professionals especially within the Asia Pacific region, to introduce new concepts, methodologies, systems and technology.

Literature Review

Karisiddappa, Maheswarappa, and Shirol (1990) studied the authorship pattern and collaborative research in psychology. Tiew, Abdullah, and Kaur (2002) analyzed citation patterns in the Malaysian Journal of Library and Information Science (MJLIS) from 2001-2006. Kamal Lochan (2006) traced and studied the trend of publications such as the year wise distribution of articles, bibliographical distribution of citations, authorship pattern, citation pattern, average length of articles, number of tables and figures used, time lag and geographical distribution of authors. Mahapatra and Padmanav (2006) studied, the growth of scientific research literature on Orissa published during 1985-2004. In this study, the authorship pattern, year wise growth, subject wise break up of papers, category of journals, place of origin, length of papers, and productivity of journals were evaluated. Verma, Tamrakar, and Sharma (2007) year wise, institutions wise, state wise distribution of contributions, authorship pattern, citation analysis, length of the contributions were found out in their research. Bakri and Willett (2008) studied the range of articles published per volume, average number of references per article, the average length per article pages, the percentage of multi-authored papers and geographically affiliation.

Assari and Ahmadyar (2009) carried out a bibliometric analysis of all electronically available dental literature in Iran from 1983 to 2006, in order to study availability and examine trends and found that 1,994 dental articles were electronically available, published in six different dental journals in Iran. Vimala and Pulla Reddy (2009) traced authorship pattern and collaborative research in zoology with a sample of 19,323 journal citations figured in the

theses on zoology accepted for the award of the doctoral degree by Sri Venkateswara University, Tirupati, India. Zafrunnisha, and Pulla Reddy (2009) studied authorship pattern and collaborative research in the field of Psychology. Akhtar and Nishat (2011) studied the Chinese Librarianship: an International Electronic Journal for the period of 2006-2010. Warraich and Ahmad (2011) traces the author productivity, extent of authors' collaboration, authors' institutional affiliation, authors' geographic affiliation, type of publication, language of papers, number of citations used per article, length of papers, and year-wise distribution of papers.

Pradhan, Panda, and Chandrakar (2011) studied the trends in authorship pattern and author's collaborative research in Indian chemistry literature with a sample of 53,977 articles during the period 2000-2009. Neeraj Kumar, Jyoti, and Kaur (2011) analyzed the citation analysis of all the journal articles published in the Journal of Documentation from 1996-2010 and found that 487 articles are published in the journal during 15 years. Rattan and Gupta (2012) traced the author productivity, extent of authors' collaboration, authors' institutional affiliation, authors' geographic affiliation, type of publication, language of papers, number of citations used per article, length of papers, and year-wise distribution of papers. Rashidi, Rahimi, and Delirrad (2013) also studied the productivity of Turkish and Iranian parasitologists' papers, average number of citation per article, most cited journal in both countries, most cited references.

Amsaveni and Vasanthi (2013) traced the trend in authorship pattern and collaborative research in network security with a sample of 8051 articles during 2002 to 2011. Alimi, Taslimi, Ghodsi, and Rahimi-Movaghar (2013) analyzed papers published by Iranian neurosurgeons and found a total of 1196 papers published by 422 Iranian neurosurgeons. Ramakrishnan and Thavamani (2013) studied the literature output in the field of Hepatitis C in the Journal of Gastroenterology between 2006-2010. Mousavi, Mansouri, and Ahmadvand (2013) assessed scientific output on rational use of drugs in Iran using a bibliometric analysis of publications. Thavamani and Velmurugan (2013) studied the publication trends of scholarly papers in Annals of Library and Information Studies published from New Delhi. The bibliometric analysis has been conducted with 310 contributions published in the journal during the year 2002 – 2012.

Objectives of the Study

The primary objective of this study is to understand the growth of Malaysian Journal of Library and Information Science and their research output in global during the period 1996 - 2012. More specific objectives are as follows:

- ❖ To study growth of research articles by year and issue,
- ❖ To study authorship patterns,
- ❖ To identify degree of author collaboration,
- ❖ To study authorship patterns by volume,
- ❖ To find out the contribution by subjects,
- ❖ To study contribution by institutions,
- ❖ To examine the average length of articles,
- ❖ To study average number of citations per article, and
- ❖ To study types of publications cited in the articles of the journal.

Methodology

The data was collected from the website (<http://ejum.fsktm.um.edu.my>) of the Malaysian Journal of Library and Information Science (MJLIS) that was first published bi-annually in 1996. It is currently publishing three times (2009 onwards) a year in April, August and December by the Department of Library and Information Science, University of Malaya. Thirty-eight issues from seventeen volumes from 1996 to 2012 have been selected for the study. The research article contributions by issue and year, number of authors, authorship patterns by volume, degree of author's collaboration, contributions by subject, institution, global and citations per article are studied. Citations have been categorized as journal articles, books, web based sources and miscellaneous documents (dissertations, theses, technical manuals, abstracts, patents and personal communication includes monographs and conference proceedings, etc.) were recorded. These data were organized, calculated, tabulated, analyzed, and presented by using simple arithmetic and statistical methods. The study limited to 279 articles and 6779 citations published in last seventeen years and data were noted down for the study.

Data Analysis

Data on the bibliographic records were collected from the online version of Malaysian Journal of Library and Information Science pertaining to the period 1996-2012. A total of 279 articles bibliographic records were collected, which formed the source data for this study.

Table 1

Contribution of Research Articles by Year and Issue

Sl. No.	Year	Volume	No. of Issues	No. of Contributions	Percentage (%)	Cumulative	Percentage (%)
1	1996	1	1 – 2	16	5.734	16	5.734
2	1997	2	1 – 2	16	5.734	32	11.469
3	1998	3	1 – 2	13	4.659	45	16.129
4	1999	4	1 – 2	15	5.376	60	21.505
5	2000	5	1 – 2	14	5.017	74	26.523
6	2001	6	1 – 2	14	5.017	88	31.541
7	2002	7	1 – 2	13	4.659	101	36.200
8	2003	8	1 – 2	16	5.734	117	41.935
9	2004	9	1 – 2	14	5.017	131	46.953
10	2005	10	1 – 2	14	5.017	145	51.971
11	2006	11	1 – 2	14	5.017	159	56.989
12	2007	12	1 – 2	14	5.017	173	62.007
13	2008	13	1 – 2	16	5.734	189	67.741
14	2009	14	1 – 3	18	6.451	207	74.193
15	2010	15	1 – 3	24	8.602	231	82.795
16	2011	16	1 – 3	28	10.035	259	92.831
17	2012	17	1 – 3	20	7.168	279	100.00
Total			38	279	100.00		

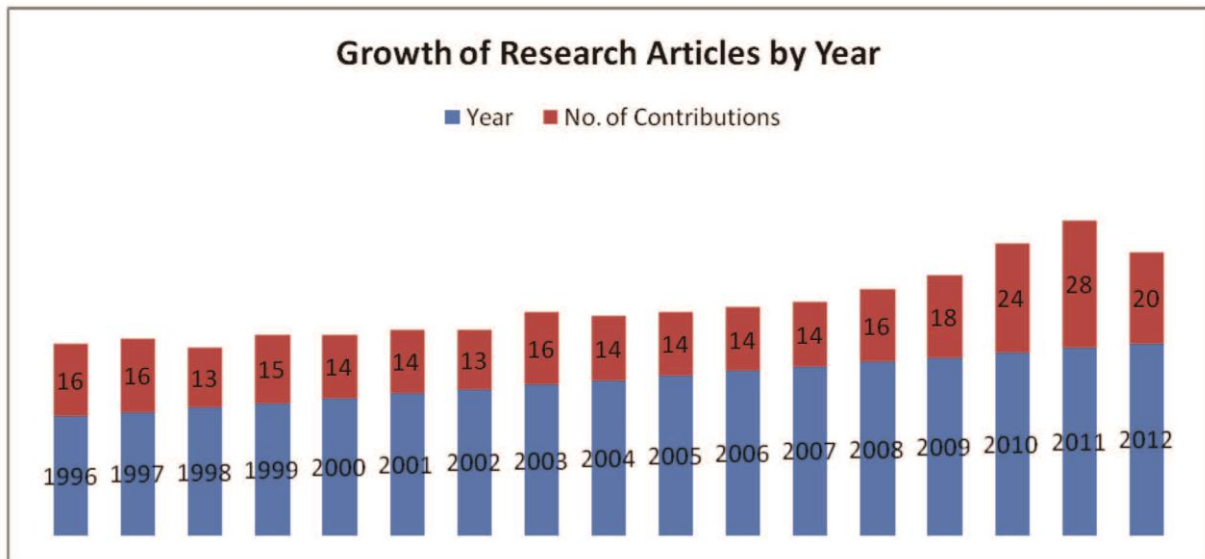


Figure 1. Contribution of research articles by year.

Table 1 and Figure 1 show the growth of research articles published in the Malaysian Journal of Library and Information Science journal from 1996 to 2012. Altogether, there are 279 research articles. The highest number of research articles 28(10.035%) was published in 2011 while the lowest number 13(4.659%) of research articles was published in the year of 2002 and 1998. The second highest number of articles 24(8.602%) was published in the year of 2010.

Table 2

Authorship Patterns by Year/Volume

Sl. No.	Year	Volume	Authors					Total	Percentage (%)
			One	Two	Three	Four	Four <		
1	1996	1	7	7	2			16	5.734
2	1997	2	7	4	4	1		16	5.734
3	1998	3	6	3	2	1	1	13	4.659
4	1999	4	10	3	1	1		15	5.376
5	2000	5	4	10				14	5.017
6	2001	6	6	4	4			14	5.017
7	2002	7	3	6	4			13	4.659
8	2003	8	9	5	2			16	5.734
9	2004	9	4	7	1	1	1	14	5.017
10	2005	10	6	6	1		1	14	5.017
11	2006	11	4	6	2	2		14	5.017
12	2007	12	5	6	2		1	14	5.017
13	2008	13	6	9	1			16	5.734
14	2009	14	9	4	2	3		18	6.451

Sl. No.	Year	Volume	Authors					Total	Percentage (%)
			One	Two	Three	Four	Four <		
15	2010	15	4	13	6	1		24	8.602
16	2011	16	3	14	6	3	2	28	10.035
17	2012	17	6	3	7	2	2	20	7.168
Total			99	110	47	15	8	279	100.00

Table 2 show the distribution of research articles by year, volume and the authorship patterns of the journal from 1996 to 2012. It is clear that the number of research articles has been increased over the years. It indicates also that of 99 contributions of single authors, volume 4 has the highest number 10(10.10%) while volumes 7 and 16 have the lowest number 3(3.03%). Of the 110 research articles contributed by two authors, volume 16 has the highest number 14(12.72%) while volumes 3, 4 and 17 have the lowest number 3(3.30%). Of the 47 research articles contributed by three authors, volume 17 has the highest number 7 (14.89%) while volumes 4, 9, 10 and 13 have the lowest number 3(2.12%).

Table 3

Authorship Patterns

Sl. No.	Author	Total	Percentage (%)
1	Single Author	99	35.483
2	Double Authors	110	39.426
3	Three Authors	47	16.845
4	Four Authors	15	5.376
5	Five Authors	3	1.075
6	Seven Authors	2	0.716
7	Eight Authors	1	0.358
8	Nine Authors	2	0.716
Total		279	100.00

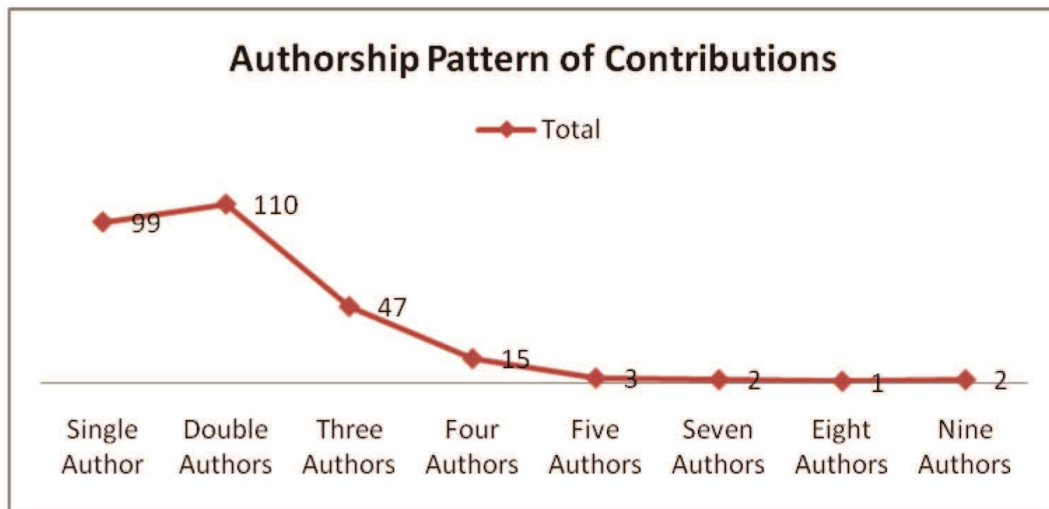


Figure 2. Authorship patterns of publications.

Table 3 and Figure 2 show that the majority of the research articles were written by double authors 110(39.426%), followed by single author 99(35.48%), three authors 47(16.845%), and four authors 15(5.376%). The lowest number of contributions was made by eight authors 1(0.358%).

Degree of Author Collaboration

To determine the degree of author collaboration in quantitative terms, the formula given by Subramanyam (1983) was used:

The formula is where C = Degree of collaboration NM = Number of multi authored papers NS = Number of single authored papers	C =	$\frac{NM}{NM + NS}$
	C =	$\frac{180}{180+99=279}$
In the present study the average value of C is	C =	0.645

It is found that the degree of author collaboration in the Malaysian Journal of Library and Information Science the average value of C is 0.645 during the period under study. Therefore, the collaborative works are quite remarkably observed in the MJLIS. In other words, multiple authors were dominating.

Table 4
Distributions by Subject

Sl. No.	Subjects	Total	Percentage (%)	Rank
1	Bibliometrics/ Scientrometrics/ Journal Studies	106	37.992	1
2	User Studies	27	9.318	2
3	Information Sources and Services	22	7.885	3
4	Digital Libraries	19	6.810	4
5	LIS Education	14	5.017	5
6	Academic Libraries	13	4.659	6
7	Internet Studies / Webology	11	3.942	7
8	Collection Development	10	3.584	8
9	Information Literacy	9	3.225	9
10	Cataloguing and Classification	6	2.150	10
11	Information Management	6	2.150	10
12	Information Professional and Librarians	6	2.150	10
13	Information Retrieval	6	2.150	10
14	Legal Issues in IS	6	2.150	10
15	School Libraries	6	2.150	10
16	Children Libraries	2	0.716	11
17	E-Commerce	2	0.716	11
18	Knowledge Management	2	0.716	11
19	Library Historiography	2	0.716	11
20	Public Libraries	2	0.716	11
21	Special Libraries	2	0.716	11
Total		279	100.00	

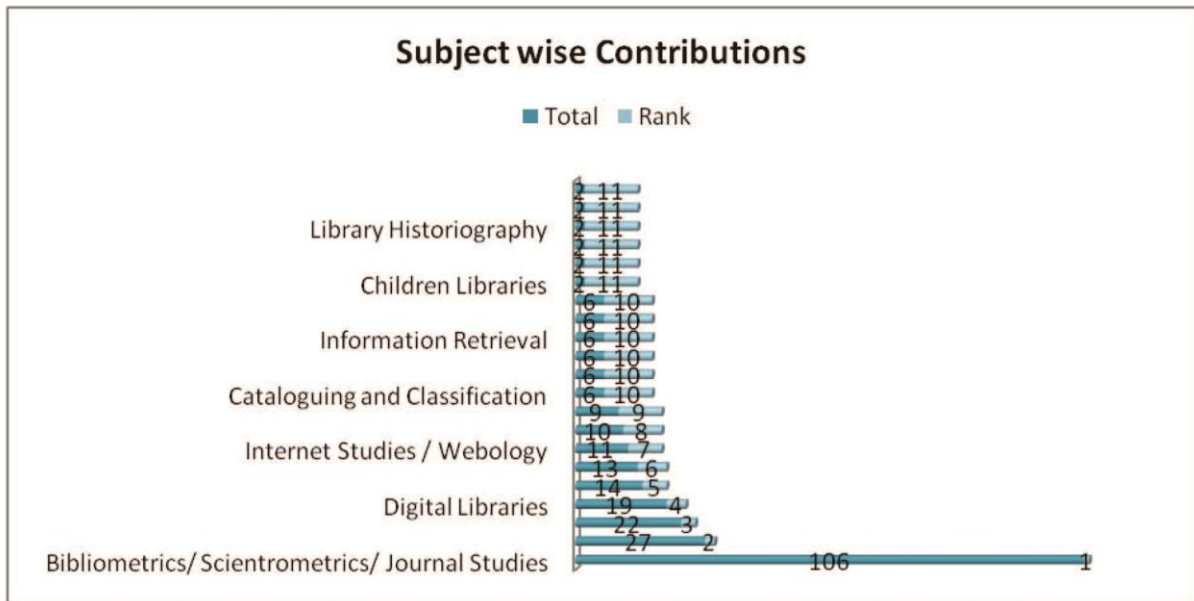


Figure 3. Distributions by subject.

Table 4 and Figure 3 show the distribution of subject areas of the articles. 106 articles (37.992%) were about Bibliometrics / Scientrometrics / Journal Studies. The least percentage 2 articles (0.716%) were about Children Libraries, E-Commerce, Knowledge Management, Library Historiography, Public Libraries and Special Libraries. The second highest percentage of study was done in the area of User Studies, i.e., 27(9.318%).

Table 5

Distribution of Articles by Institutions

Sl. No.	Year	Volume	Academic Institutions	Research Institutions	Special Institutions	Documentation Centers	Other Institutions	Total
1	1996	1	13	1	1		1	16
2	1997	2	15	1				16
3	1998	3	10	1			2	13
4	1999	4	9	1	4		1	15
5	2000	5	13				1	14
6	2001	6	10	3	1			14
7	2002	7	6	2	3	1	1	13
8	2003	8	15		1			16
9	2004	9	11	1	2			14
10	2005	10	12	1		1		14
11	2006	11	11	2			1	14
12	2007	12	11	1	1		1	14
13	2008	13	14	1			1	16
14	2009	14	16	1			1	18

Sl. No.	Year	Volume	Academic Institutions	Research Institutions	Special Institutions	Documentation Centers	Other Institutions	Total
15	2010	15	19	1	2		2	24
16	2011	16	25	1	2			28
17	2012	17	16	2		1	1	20
Total			226	20	17	3	13	279
Percentage (%)			81.003	7.168	6.093	1.075	4.659	100.00

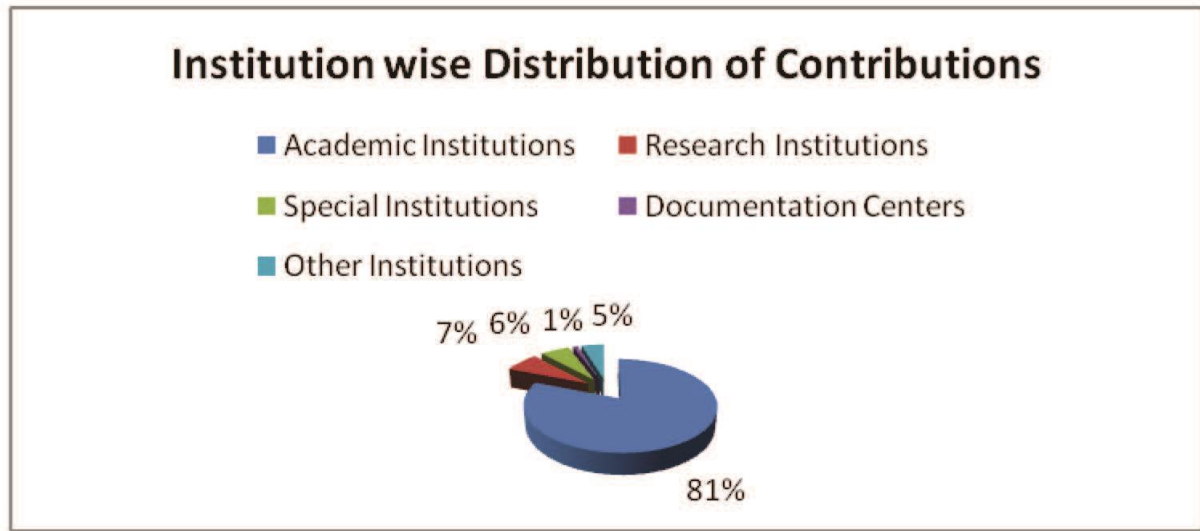


Figure 4. Distributions of articles by institutions.

Table 5 and Figure 4 show the type of institutions with which the authors of the articles were affiliated. 226 articles (81.003%) were from authors affiliated to the academic institutions, followed by research institutions with 20(7.168%), special institutions 17(6.093%). The lowest number 3(1.075%) has been contributed by documentation centers.

Table 6

Distribution of Authors by Country

Sl. No.	Global	Total	Percentage (%)	Rank
1	Malaysia	128	45.878	1
2	India	50	17.921	2
3	Bangladesh	13	4.659	3
4	Iran	10	3.584	4
5	Nigeria	8	2.867	5
6	Singapore	8	2.867	5
7	Sri Lanka	8	2.867	5
8	Taiwan	8	2.867	5
9	Botswana	6	2.150	6
10	China	5	1.792	7
11	Kuwait	5	1.792	7
12	Thailand	5	1.792	7

Sl. No.	Global	Total	Percentage (%)	Rank
13	Australia	4	1.433	8
14	Pakistan	3	1.075	9
15	UK	3	1.075	9
16	USA	3	1.075	9
17	Indonesia	2	0.716	10
18	Jordan	2	0.716	10
19	Belgium	1	0.358	11
20	Brunei	1	0.358	11
21	Kenya	1	0.358	11
22	New Zealand	1	0.358	11
23	South Korea	1	0.358	11
24	Spain	1	0.358	11
25	Sudan	1	0.358	11
26	Turkey	1	0.358	11
Total		279	100.00	

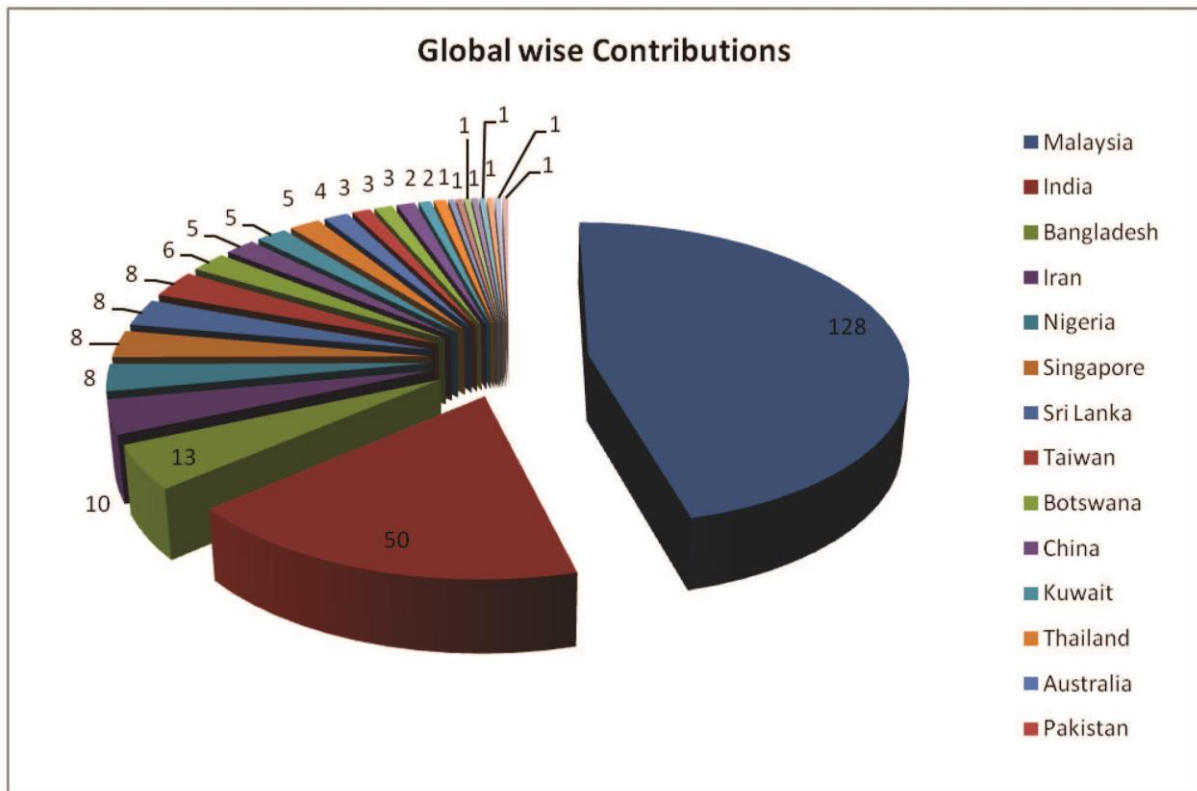


Figure 5. Contributions by global.

Table 6 and Figure 5 show the contribution of articles by country during the period under the study. Out of 279 articles, 128(45.878%) are from Malaysia, followed by India 50(17.921%), Bangladesh 13(4.659%), Iran 10(3.584%). Nigeria, Singapore, Sri Lanka, and Taiwan each 8(2.867%), by authors from China, Kuwait and Thailand each 5(1.792%), Australia 4(1.433%), Pakistan, UK and USA each 3(1.075%), and Indonesia and Jordan 2(0.716%). And least number 1(0.358%) have been contributed by authors from eight countries of Belgium, Brunei, Kenya, New Zealand, South Korea, Spain, Sudan, and Turkey.

Table 7

Length of Articles by Page

Sl. No.	Length of Pages	Total	Percentage (%)
1	No Page	1	0.358
2	1 – 5	5	1.792
3	6 – 10	41	14.695
4	11 – 15	106	37.992
5	16 – 20	86	30.824
6	21 – 25	28	10.035
7	26 – 30	5	1.792
8	31 – 35	3	1.075
9	36 – 40	3	1.075
10	41 – 45	1	0.358
Total		279	100.00

Table 7 show the length of articles by page in the period under study. One hundred and six articles (37.992%) are between 11 - 15 pages in length, 86 articles (30.824%) between 16 - 20 pages, 41 articles (14.695%) between 6 - 10 pages, 5 articles (1.792%) between 1 - 5 and 26 – 30 pages, and 1 article (0.358%) between 41 - 45 pages. Clearly, most articles 106 (37.992%) are between 11- 15 pages long. One contribution has no page number in 1997.

Table 8

Range of Citations per Article

Sl. No.	No. of Citations	Total	Percentage (%)
1	Nil	2	0.716
2	1 – 10	72	25.806
3	11 – 20	84	30.107
4	21 – 30	61	21.863
5	31 – 40	27	9.677
6	41 – 50	11	3.942
7	51 – 60	8	2.867
8	61 – 70	3	1.075

Sl. No.	No. of Citations	Total	Percentage (%)
9	71 – 80	2	0.716
10	81 – 90	3	1.075
11	91 – 100	3	1.075
12	191 – 200	1	0.358
13	201 – 210	1	0.358
14	211 – 220	1	0.358
Total		279	100.00

Table 8 show the range and percentage of citations per article. A total of 84 articles (30.10%) top the list with 11-20 citations, followed by 72 articles (25.80%) between 1-10, 61 articles (21.863%) with 21-30, and 27 articles (9.67%) with 31-40 citations. 11 articles (3.94%) with 41-50, 8 articles (2.86%) with 51-60, 3 articles (1.07%) with 61-71, 81-90 and 91-100 citations, 2 articles (0.71%) with 71-80, 1 article (0.35%) with 191-100, 201-210 and 211-220. Two (0.71%) articles have no citations.

Table 9

Distribution of Citations by Year

Sl. No.	Year	No. of Contributions	No. of Citations Used	Percentage (%)	Cumulative	Percentage (%)
1	1996	16	177	2.611	177	2.611
2	1997	16	488	7.198	665	9.809
3	1998	13	180	2.655	845	12.464
4	1999	15	361	5.325	1206	17.790
5	2000	14	428	6.313	1634	24.103
6	2001	14	350	5.163	1984	29.266
7	2002	13	230	3.392	2214	32.659
8	2003	16	235	3.466	2449	36.126
9	2004	14	329	4.853	2778	40.979
10	2005	14	287	4.233	3065	45.213
11	2006	14	227	3.348	3292	48.561
12	2007	14	296	4.366	3588	52.928
13	2008	16	395	5.826	3983	58.754
14	2009	18	550	8.113	4533	66.868
15	2010	24	811	11.963	5344	78.831
16	2011	28	816	12.037	6160	90.868
17	2012	20	619	9.131	6779	100.00
Total	17	279	6779	100.00		

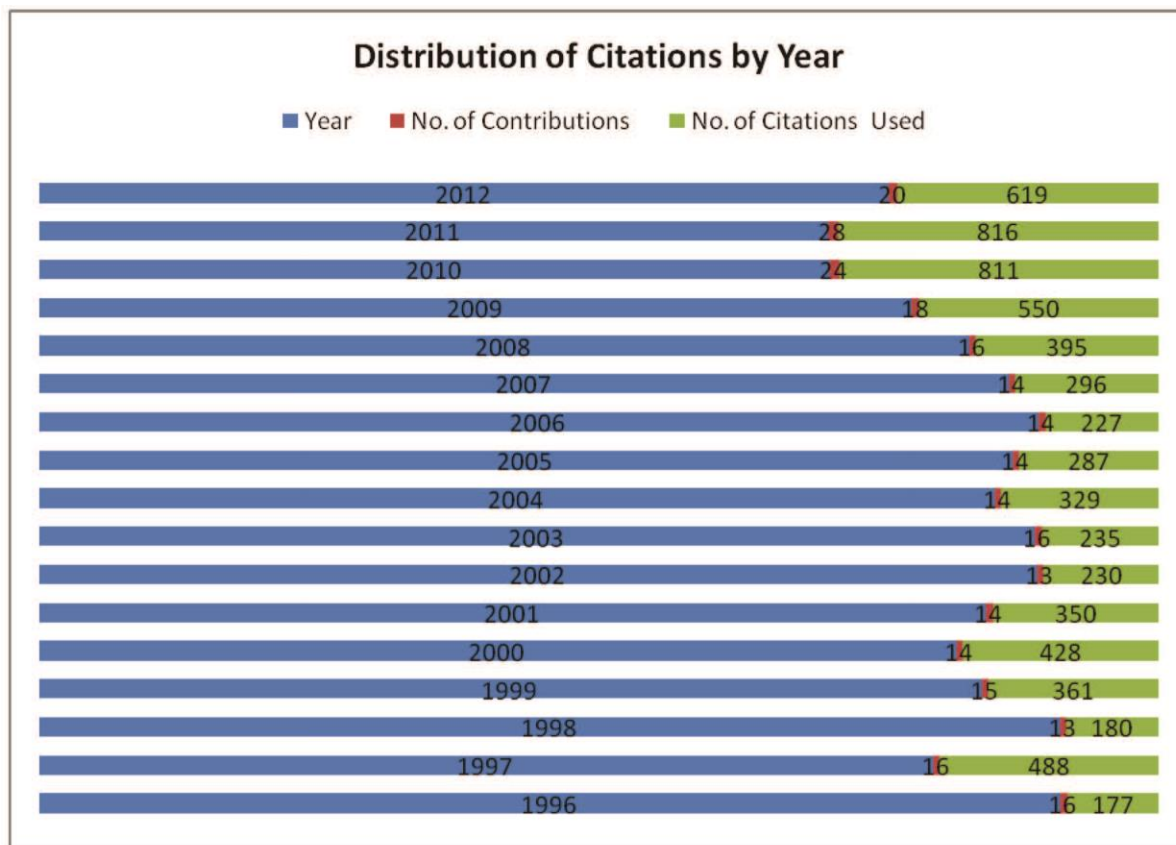


Figure 6. Citations by year.

Table 9 and Figure 6 present the distribution of citations per year. The 279 articles contained a total of 6779 citations and self-citations. The year 2011 has the most citations 816 (12.037%), followed by 811 (11.963%) in 2010. The year 1996 has the fewest citations 177 (2.611%).

Table 10

Sources of Citations

Sl. No.	Source	Total	Percentage (%)
1	Journals	3844	56.704
2	Books	1324	19.530
3	Websites	804	11.860
4	Miscellaneous (seminars, conferences, proceedings and workshops, theses and dissertations, reports and newspaper / newsletters, etc.,)	807	11.904
	Total	6779	100.00

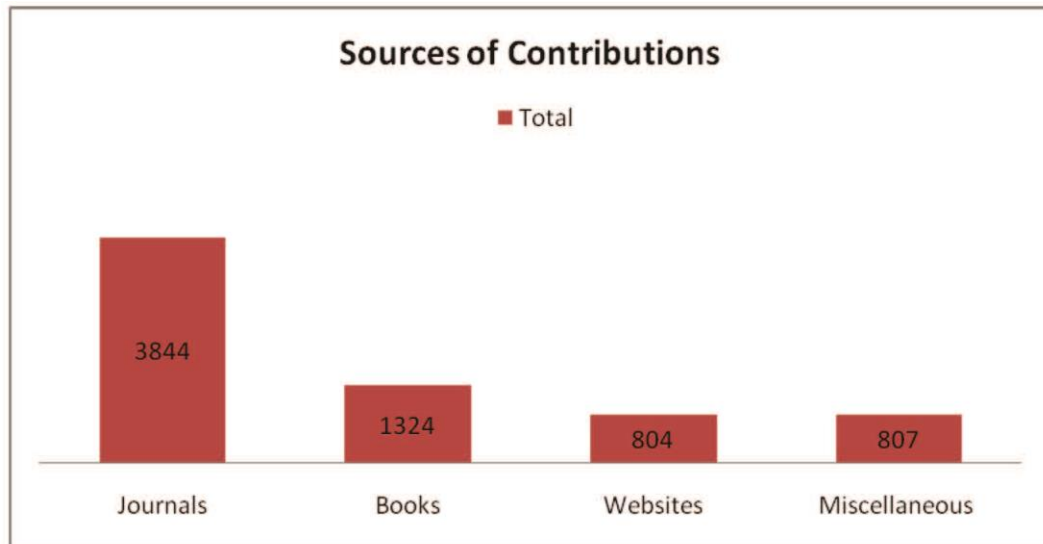


Figure 7. Sources of contributions.

Table 10 and Figure 7 show the majority of the authors preferred to use journal articles as the source of reference or citation, which accounts for a 3844 (56.704%) out of the total 6779 citations. The second highest used source is books with 1324 (19.530%) citations. It is followed by Online search/websites with 804 (11.860%) and miscellaneous (807) 11.904% are cited (seminars, conference, proceedings and workshops 356 (5.251%), theses and dissertations 171 (2.522%), reports 191 (2.817 %) and newspaper / newsletters 20 (0.295%).

Findings

- The present study has analyzed research contributions of the past seventeen years during 1996 - 2012.
- The highest number of research articles 28(10.035%) was published in 2011. The second highest number of articles 24(8.602%) was published in the year of 2010.
- The majority of the research articles were written by double authors 110(39.426%), followed by single author 99(35.48%).
- The degree of author collaboration in the Malaysian Journal of Library and Information Science is 0.645 during the period under study. Therefore, the collaborative works are quite remarkably observed in the MJLIS.
- Majority of 226 articles (81.003%) were from authors affiliated with academic institutions. This is followed by research institutions with 20(7.168%),
- Maximum of 106 articles (37.992%) are about Bibliometrics / Scientrometrics / Journal Studies. The second highest percentage of study was done in the area of User Studies, i.e., 27(9.318%).
- The highest number i.e., 128 (45.878%) has been contributed by authors from Malaya followed by India.
- 106 articles (37.992%) are between 11 - 15 pages in length, 86 articles (30.824%) between 16 - 20 pages.
- A total of 84 articles (30.10%) top the list with 11-20 citations, followed by 72 articles (25.80%) between 1-10 citations.

- The year 2011 has the most citations 816 (12.037%), followed by 811 (11.963%) which has the second most citations in 2010.
- Majority of the authors preferred to use journal articles as the source of reference or citation, which accounts for a 3844 (56.704%) out of the total 6779 citations. The second highest used source is books with 1324 (19.530%) citations. It is followed by Online search/websites with 804 (11.860%).

Conclusion

The Malaysian Journal of Library and Information Science (MJLIS) have successfully completed 17 years of publication. It is an open access journal in the field of library and information science. It is getting world-wide popularity and identification by publishing scholarly articles from authors across the world. This Bibliometric research reveals a remarkable difference between the number of single author and multiple authors. It identifies the thrust areas of research in Library and Information Science; and also suggests the grey areas that require attention from LIS researchers. The study concludes that multiple-authorship research is predominant as compare to single contributions in case of Malaysian Journal of Library and Information Science. The collaboration and team work are among the most important necessities of scientific and technological work today.

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