

# Indian Journal of Library and Information Science: A Bibliometric Study

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## ABSTRACT

Bibliometrics, a research method in Library and Information Science (LIS), is using quantitative measures for written and documented communication. Bibliometric studies have already described and evaluated countries, universities, research institutes, journals, specific research topics and specific disciplines. The purpose of present research is to do a bibliometric study on the Indian Journal of Library and Information Science (IJLIS) through examining the quantitative growth of articles by volume; examining authorship characteristics/pattern of LIS literature published in IJLIS; discovering the country of origin of the IJLIS authors or their geographical affiliations; studying the type of research published in IJLIS; and analyzing LIS literature published in IJLIS so that areas of interest for LIS researchers and current trends may be explored. Findings show that there is an increase in the number of articles per issue appeared in IJLIS during the period of study; 50 articles (57.5%) were written by two or more authors, while the number of single-authored articles (37 = 42.5%) is fewer; most of the articles appeared in IJLIS have been written by Indian authors. 141 Indian authors have participated in IJLIS (91.6%); documentary method is the most used research method (48.3%) and the survey (34.5%) is at the second rank; and information technology and library technology (24.1%), users literacy and reading (24.1%), management (11.5%) and information use and sociology of information (9.2%) are the most popular subjects among IJLIS contributors. Finally, the research provides recommendations for improving the IJLIS.

**Key words:** Bibliometrics, Indian Journal of Library and Information Science, IJLIS, Library and Information Science, LIS, Journals

## INTRODUCTION

Bibliometrics is not a new research method in Library and Information Science (LIS). But, it is an important and effective method followed by many researchers in information field. Years ago, when there was no understanding of metrical studies in libraries, F. W. Hulme used the term *statistical bibliography* as a concept for application of quantitative techniques in libraries (1923). In 1948, Shiyali Ramamrita Ranganathan used the term *Librametry* to apply statistics in librarianship. Finally, Alan Pritchard

in 1969 coined the term *bibliometrics* for those studies that consider quantities in written and documented communication. Since then, many researchers have contributed in bibliometric studies and according to Sam (2008) the concept was developed to describe and evaluate countries, universities, research institutes, journals, specific research topics and specific disciplines.

Journals are among the most important items reviewed in bibliometric studies. Journals are the main media for communicating ideas among scientists and researchers. Every researcher needs a channel to be able to publish his/her findings. Scholars can establish a permanent and strong relationship with other colleagues through appearance of their studies in journals. Besides communicating ideas, publishing research findings, and establishing academic relations, journals are also considered as information sources in information field. The present work, in specific, tries to do a

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bibliometric study on the Indian Journal of Library and Information Science (IJLIS).

## RELATED WORKS

To find out related studies, researcher did a deep search in bibliographic and citation databases. LISTA is a bibliographic database in the Library and Information Science (LIS) area published by EBSCO which covers many specialized magazines and academic journals from all over the world. Journals covered by the LISTA are mainly published in English. Nevertheless, there are a large number of articles indexed in this database in other languages such as French, Dutch, Portuguese, Italian, Russian, and etc. With the purpose of this research in mind, LISTA was searched through its advanced search interface for identifying relevant studies. Beside the LISTA, another search was made in Google Scholar (GS) simultaneously. GS, powered by Google, is in fact a citation database that gathers thousands and thousands of records every month. Searching and indexing a large collection of academic journals published by main and global scientific publishers has been allowed in Google Scholar. Through GS, one would be able to search and identify relevant items and then trace their citation chain. Tracing citations provides searchers with a more collection of bibliographic information on articles, reports, books, theses, and etc.

However, English records were extracted next to the searches. Then, we tried to download them through the same databases or other available information resources such as the archives on the journals' web sites and authors' home pages. In some cases, we had even contacts with authors to get a copy of their articles. After studying these resources, we continued the process by gathering bibliographic information of the related references and acquiring them to complete the literature review phase.

It should also be noted that there were many bibliometric studies on scientific productivity of a given professor, a given department/school, a given university/research institute, papers of

a given conference, papers in non-LIS journals, and theses/dissertations. These studies were not accounted as a part of the literature, reviewed for the purpose of the present research. Since we intended to do a metrical measurement on a given LIS journal, studies were considered that concentrated on one LIS / Computer Science journal or a collection of LIS journals. The following list includes items selected among results retrieved during submitting queries to the abovementioned databases. They have been arranged chronologically and their main findings have been provided.

1. Dimitroff (1992) performed a thorough content analysis of articles published between 1966 and 1990 in the *Bulletin of the Medical Library Association* (BMLA). She identified 363 research articles out of a possible 1218 published articles (29.8%).

2. Alemna (1996) analyzed the articles published in *The African Journal of Library, Archives and Information Science* (AJLAIS) during 1990-1995 and found that the major areas of interest were information technology, rural libraries and status/image of librarians. The study noted an increase in publications from Africa and another increase in the number of female contributors.

3. Kajberg (1996) conducted a content analysis of Danish LIS serial literature to determine the subject focus of the literature from 1957-1986. Analysis of two non-research journals, *Bibliotek 70* and *Bogens Verden*, was conducted. The most popular subject areas in the profession were Individual Libraries and National Library System, or the geographical location of libraries and library systems. Areas of major concern in the profession were Cooperation, Networks, and Resource Sharing. This study revealed that theoretical aspects of librarianship and information science received little attention.

4. Khan and Samdani (1997) analyzed the literature published in *Pakistan Library Bulletin* (PLB) during 1968-1997. They presented subject review of the literature along with authorship characteristics and analysis of citations. Major areas of interest for the authors of PLB, according to this study, were academic libraries, librarianship, information and computer

technologies, bibliography and bibliographic control.

5. Al-Ghamdi and et al. (1998) examined the authorship patterns of articles published in *Journal of the American Society for Information Science* (JASIS) from 1970 to 1996. The trends in authorship were analyzed in terms of authorship frequency, co-authorship pattern, author distribution by gender, geographical location and institutional affiliation. Lotka's law of author dispersion was confirmed when the results showed that the majority of authors contributed not more than two articles and only a small percentage of authors were highly productive. The majority of articles were also single-authored (61%) indicating a field that is not highly collaborative although the number is increasing in recent years. The study also found an increasing trend of female authors, non-American authors and authors from Library and Information Science (LIS) schools.

6. Zemon and Bahr (1998) examined the articles published by college librarians in two journals, *College & Research Libraries* and *Journal of Academic Librarianship*, during 1986-1996 and concluded that college librarians contributed less number of articles to professional literature than their counterparts in universities. Study showed that college librarians wrote less about technology, systems-related issues and cataloging. Roughly equal number of articles was contributed by both male and female authors.

7. Koehler and et al. (2000a) examined three e-journals and one paper journal begun in the 1990s within the information science genre. In addition, these journals were compared to what was perhaps the leading information science journal, one that has been published continuously for fifty years. The journals examined were *CyberMetrics*, *Information Research*, the *Journal of Internet Cataloging*, *Libres*, and the *Journal of the American Society for Information Science*. There were a number of important differences among the journals. These included frequency of publication, publication size, number of authors, and the funding status of articles. Differences among journals for distributions of authors by gender and corporate authors by region were also found. Some of the

regional differences could be explained by journal maturation – the more mature the journal the greater the dispersion. Women were more likely to publish in the newer journals than in JASIS. The fact that a journal was or was not an e-journal did not appear to affect its presence or "behaviour" as an information science journal.

8. Koehler and et al. (2000b) revisited and referred to the *Journal of the American Society for Information Science and Technology* (JASIST) as an influential archival document that had influenced the LIS discipline over a long period. The study analyzed 2257 articles by 3518 authors published between 1950 (in *American Documentation*, previous name of JASIST) to 1999. The authors observed changes in terms of article characteristics (length, number of footnotes, types of footnotes), the authorship characteristics (number of authors, gender, corporate authorship, co-authorship and transnational authorship). It was observed that there was a shift from articles derived from non-funded research by single authors to articles which were increasingly funded and multi-authored from various regions or countries. The researchers suggested that this reflected a more complex and cross-fertilized research activity. The study found among others that (a) the number of issues and the number of articles per volume had increased over the period being studied; (b) there was change in the authorship pattern with increasing multi-authored works and more contributions from authors affiliated to academic institutions (66%) compared to those from corporations (17/79%); (c) the number of citations within the articles had increased, with a higher percentage referencing journals than to books and the number of Internet resources began to emerge after the 1990s; (d) there were more male authors (69.0%) compared to female (24.7%); and (e) there was an increase in foreign authored articles, even though American contributions still predominated.

9. Hawkins (2001) studied bibliometric characteristics of electronic journals (e-journals) covering the field of information science. Twenty-eight e-journals were identified and ranked by number of articles on the subject they

published. A Bradford plot revealed that the core was not well developed yet, but it will likely contain six journals. The publication of information science articles in e-journals began about 1990. In 1995 (the starting date for this study), a modest 26 articles appeared, but publication has now risen to approximately 250 articles per year. The most prolific authors were identified. The vast majority of them were located in the United States or United Kingdom. Only 26 articles had authors from more than one country, showing that electronic technology has not yet strongly influenced international collaboration. About 2/3 of the articles originated in academic institutions. Common topics of e-journal articles in information science included electronic information, electronic publishing, virtual (digital) libraries, information search and retrieval, and use of the Internet. Seven online databases covered these e-journals; *Information Science Abstracts* (ISA) was the only one to cover all 28 journals, and it had the highest number of abstracts from them - over 1,100.

10. Schoepflin and Glanzel (2001) assessed whether bibliometrics have evolved from a soft science field towards harder sciences or whether it could be characterized as a social science field or a heterogeneous field. They have classified all 75 papers from the years 1980, 1989 and 1997 published in *Scientometrics* into six categories representing the main fields of approaches to bibliometrics. The indicators taken as measurement were all references cited in articles, notes and letters, and age of the references. The references were categorized into serials and non-serials. The price index per paper was calculated, that is the percentage of references not older than 5 years old and commonly used as a measure between the hard and soft sciences, the percentage of references to serials, the mean reference age (that is the age of references cited) and the mean reference rate (the ratio of the number of references cited by a journal and the total number of papers published in the journal). Case studies and empirical papers contributed 35 (47%) papers out of 75 and methodological papers which included applications were also well represented (25 articles). The results showed that most papers

in *Scientometrics* were 'harder' and the serial's share of distribution indicates a characteristic similar to that of a hard social science journal.

11. Atinmo and Jimba (2002) analyzed *The African Journal of Library, Archives and Information Science* (AJLAIS) over seven years by gender, collaboration and institutional affiliation. A total of 95 research articles contributed by 118 authors were analyzed. Results indicated male dominance of single-authored articles, 83.2% to 16.8%. Of the 16 co-authored articles nine (56.25%) were co-authored by men only, one article (6.25%) was co-authored by women only, and gender mixture was found in six (37.5%) of the articles. A cross-tabulation of institutional affiliation with gender revealed that no woman contributed any article from special and public libraries while there was a relative gender mixture in academic libraries and library schools.

12. He and Spink (2002) reported findings from a study of the geographic distribution of foreign authors in the *Journal of the American Society for Information Science and Technology* (JASIST) and *Journal of Documentation* (JDoc). Bibliographic data about foreign authors and their geographic locations from a 50-year publication period (1950-1999) were analyzed per 5-year period for both JASIST and JDoc. The distribution of foreign authors by geographic locations was analyzed for the overall trends in JASIST and JDoc. UK and Canadian authors were the most frequent foreign authors in JASIST. Authors from the United States and Canada were the most frequent foreign authors in JDoc. The top 10 geographic locations with highest number of foreign authors and the top 10 most productive foreign authors were also identified and compared for their characteristics and trends.

13. Tiew, Abrizah and Kiran (2002) did a bibliometric examination of all the journal articles published in the *Malaysian Journal of Library and Information Science* from 1996-2000. The range of articles published per volume was between 14 and 17; the average number of references per article was 22.5; the average length per article was 41.2 pages; 53 (69.74%)

articles were research-oriented; the percentage of multi-authored papers was slightly higher at 52.6% or 40 papers out of a total of 76; the most prolific author contributed 12 articles; 36 (45%) authors were geographically affiliated to Malaysia; authors affiliated to library schools were well represented (55.2%); the most productive institution was Faculty of Computer Science and Information Technology, University of Malaya with 26 out of 80 author's affiliation; the most popular subject was Scientific and Professional Publishing; 30 (39.5%) articles contained author's self-citation, while the rate of journal self-citation was found to be 27.6% and most of the articles (67.1%) contained no formal acknowledgement.

14. Bharvi, Garg and Bali (2003) analyzed 1317 papers published in *Scientometrics* between 1978 and 2001. They revealed that the journal had focused on scientometric assessment, that American contributions in terms of papers seemed to be on the decline and those from the Netherlands, India, France and Japan was increasing. Single-authored works predominated but multi-authored works were increasing. The number of collaborative papers was also increasing.

15. Liu (2003) revisited *Journal of the American Society for Information Science and Technology* (JASIST) to find out the author productivity and co-authorship pattern of 208 research articles published between 2001 and 2002. There were 364 authors contributing articles in the two years under study, out of which 321 (88.2%) wrote only one article. Liu also found that the observed ratio of authors with two or more articles was lower than expected according to Lotka's law of author productivity. Also, single-authored works predominated (42.3%) followed by two authors (28.8%) and three or more authors (28.8%). However, the tendency for articles to be co-authored is increasing.

16. Sin (2004) examined journal publications in the field of library and information science (LIS) to assess the level of internationalization in their publications authorship pattern. This study analyzed the geographical affiliations of authors in 20 international LIS journals to track the longitudinal changes in LIS authorship

pattern. Findings suggested an increase in the internationalization of LIS authorships over the years. However, the LIS authorship distribution was still highly uneven in 2003 (Gini coefficient = 0.95). Economic power was still found to be a moderate predictor of publication performance. The findings of this study suggested that, at the moment of the writing, there was still room for the LIS field to be more internationalized.

17. Naqvi (2005) visited *Journal of Documentation* to bibliometrically analyzed 251 articles obtained from issues published for ten years between 1994 and 2003. The results indicated that (a) the distribution of papers published per year ranged from 16 to 38, (b) over 55.8% articles were single-authored with two works about 27.9%; (c) authors affiliated to academic institutions contributed 87.6% articles; (d) the number of references used by the authors were high with 45% citing 21 to 50 references, and 33.4% citing 1 to 20 references; (e) 51.4% papers were from the United Kingdom (country in which the journal is published) and the rest came from other parts of the world.

18. Tiew (2006) studied the authorship characteristics in *Sekitar Perpustakaan*, one of the earliest Library and Information Science (LIS) periodicals published by the National Library of Malaysia (PNM - Perpustakaan Negara Malaysia) since 1977. A total of 148 articles published in 20 issues of *Sekitar Perpustakaan* covering the period 1994-2003 were analyzed. Author characteristics such as name, gender, status, institutional affiliation, language preference of articles and authorship of articles were obtained, studied and analyzed. The findings revealed single-authored articles far outnumbered multi-authored articles at 79%; female contributors (65.74% or 71 authors) predominates male contributors (34.26% or 37 authors); middle-level professionals were the largest contributors of articles (59.3%); 83 (56%) articles published were in *Bahasa Melayu*, the national language, while 65 (44%) articles were in English; the top ranked contributor is Ding Choo Ming, Senior Research Fellow of Institute of the Malay World & Civilization, Universiti Kebangsaan Malaysia with nine contributions; and the most prolific institute is PNM with 41 contributing authors.

19. Haridasan and Kulshrestha (2007) studied *Knowledge Organization (KO)*; a quarterly journal published by the International Society for Knowledge Organization in 1974 under the title *International Classification* and in 1993 under the new title by K.G. Saur Verlag of Munchen. It is indexed by Information Science Abstracts, INSPEC, LISA, Library Literature and Sociological Abstracts. The authors analyzed the citations referenced in articles to understand the information needs, use pattern and use behaviour of library and information science researchers who were engaged in the field of knowledge organization. The sample comprises a total of 2462 references from each article published in KO from 1993 to 2001. The study revealed that the average number of citations was around 21 per article and the main source of citations was books and resources which were published between 1982 and 1991 (19 years). Authors from the United States, United Kingdom and Germany were the major contributors and among the Asian countries India ranked seventh in terms of contributions. English was the main language used by contributors even though the journal is published in Germany. The cited half-life of literature cited was 14 years. Authorship pattern showed a tendency towards single authorship (76.2%). The study had worked out a model citation index for the first seven cited authors and revealed the historical relationship between cited and citing documents. The authors indicated that the index could be used to identify the most cited authors as researchers currently working on special problems, to determine whether a paper has been cited, whether there has been a review of a subject, whether a concept has been applied, a theory confirmed or methods improved.

20. Bakri and Willett (2008) analyzed publication and citation patterns in the *Malaysian Journal of Library and Information Science (MJLIS)* from 2001-2006, and compared the results with those obtained in an earlier study by Tiew, Abrizah and Kiran (2002) covering the period 1996-2000. Results showed that the number of publications has increased from the 76 articles in the Tiew, Abrizah and Kiran study to 85 articles, with statistically

significant changes in the types of article, in the numbers of references per article and in the lengths of the articles. The complete set of 161 articles attracted a total of 87 citations, 52 of which were self-citations, with 14% MJLIS articles having been cited at least once.

21. Chaurasia (2008) studied *Annals of Library and Information Studies (ALIS)*. This journal is published by the National Institute of Science Communication and Information Resources in New Delhi. ALIS is indexed by the Library and Information Science Abstracts and Indian Library and Information Science Abstracts, India. Chaurasia studied a total of 20 issues published between 2002 and 2006 and measures analyzed were the number of articles per volume, authorship pattern, degree of collaboration, subject coverage of articles, institutional and geographical contributions in the journal, dispersion and types of references cited by articles. The average number of contributions per volume was 21.4 and the majority of papers were authored jointly. Chaurasia used the degree of collaboration formulated by Subramaniam to determine the extent of collaboration in quantitative terms. Most of the papers were contributed by library professionals affiliated to university and college libraries and the majority of contributions were from India (96.2%). The sources cited were mainly journals (50.1%) followed by books (19.9%). The small sample of issues limits the validity of the results and may not represent LIS journals published in India.

22. Sam (2008) examined library and information science research in Ghana from 2000 to 2006 by conducting a bibliometric analysis of papers published in the *Ghana Library Journal (GLJ)*. It described the number of articles published, the material type cited, the number of references listed, the subject coverage, the type of authorship, authorship affiliation, and whether the articles published were written through local or international collaboration. A total of 43 articles were produced by 51 authors over the period among which 41 works were from Ghanaian authors and the other two papers came from Nigeria. Also, the subject categorization of articles published in the GLJ, shows that the major subjects of the articles

published were academic libraries (16) and general librarianship (9). Others were technical services including collection development, cataloguing and classification (3), special libraries (3), public libraries (3) and preservation (3).

23. Bakri and Willett (2009) analyzed publication and citation patterns in the *Malaysian Journal of Computer Science* (MJCS) from 1996-2006. The articles in MJCS were mostly written by Malaysian academics, with only limited inputs from international sources. Comparisons were made with the companion *Malaysian Journal of Library and Information Science* (MJLIS) in terms of the type, number of references, length and numbers of authors for individual papers. Searches of Google Scholar showed that 53 MJCS articles attracted a total of 86 citations, of which 43 were self-citations.

24. Gore and et al. (2009) did an analysis of research publications in the *Bulletin of the Medical Library Association* and *Journal of the Medical Library Association* from 1991 to 2007 in order to discover trends in health sciences library and information science research. To carry out the study, research articles were identified from the *Bulletin of the Medical Library Association* and *Journal of the Medical Library Association* (1991-2007). Using content analysis and bibliometric techniques, data were collected for each article on the (1) subject, (2) research method, (3) analytical technique used, (4) number of authors, (5) number of citations, (6) first author affiliation, and (7) funding source. The results were compared to a previous study, covering the period 1966 to 1990, to identify changes over time. Of the 930 articles examined, 474 (51%) were identified as research articles. Survey (n=174, 37.1%) was the most common methodology employed, quantitative descriptive statistics (n=298, 63.5%) the most used analytical technique, and applied topics (n=332, 70%) the most common type of subject studied. The majority of first authors were associated with an academic health sciences library (n=264, 55.7%). Only 27.4% (n=130) of studies identified a funding source. This study's findings demonstrated that progress was being made in health sciences librarianship research. There was, however, room for improvement in terms

of research methodologies used, proportion of applied versus theoretical research, and elimination of barriers to conducting research for practicing librarians.

25. Mukherjee (2009a) using 17 fully open-access journals published uninterrupted during 2000 to 2004 in the field of library and information science, investigated the impact of these open-access journals in terms of quantity of articles published, subject distribution of the articles, synchronous and diachronous impact factor, immediacy index, and journals' and authors' self-citation. The results indicated that during this 5-year publication period, there are as many as 1,636 articles published by these journals. At the same time, the articles have received a total of 8,591 Web citations during a 7-year citation period. Eight of 17 journals have received more than 100 citations. *First Monday* received the highest number of citations; however, the average number of citations per article was the highest in *D-Lib Magazine*. The value of the synchronous impact factor varies from 0.6989 to 1.0014 during 2002 to 2005, and the diachronous impact factor varies from 1.472 to 2.487 during 2000 to 2004. The range of the immediacy index varies between 0.0714 and 1.395. *D-Lib Magazine* has an immediacy index value above 0.5 in all the years whereas the immediacy index value varies from year to year for the other journals. When the citations of sample articles were analyzed according to source, it was found that 40.32% citations came from full-text articles, followed by 33.35% from journal articles. The percentage of journals' self-citation was only 6.04%.

26. Mukherjee (2009b) investigated the trend of 17 LIS open access e-journals' literature by analyzing articles, authors, institutes, countries, subjects and references during 2000-2004. Quantitative content analysis was carried out on the data, data were analyzed in order to project literature growth, authorship pattern, gender pattern, cited references pattern and related bibliometric phenomena. The analysis indicated that there were as many as 1636 articles published during 2000-2004 with an average increment of 23.75 articles per year. The authorship pattern indicated that team research has not been very common in LIS OA publishing

and male authors were keener than female authors. Authors from academic institutions were paid more interest in OA publishing and most of them were from developed nations. The subject coverage of these OA e-journals was very vast and almost all facets of information and library science were covered in these articles. There were 90.10% articles of these e-journals contained references and on an average an article contained 24 references. Of these, 38.53% references were hyperlinked and 87.35% hyperlinked references were live during investigation. The analysis of data clearly indicated that OA e-journals in LIS are rapidly establishing themselves as a most viable media for scholarly communication.

27. Naseer and Mahmood (2009) did an analysis of the subjects covered and authorship characteristics of literature published in *Pakistan Library and Information Science Journal* (PLISJ) during 1998-2007. Type of research publications and publication output of PLISJ were also analyzed. A total of 236 articles from 30 issues of PLISJ were examined in this research. They found that industry, profession and education (39.4%), libraries as physical collections (17.8%), and information technology and library technology (10.2%) were the most popular subjects among authors. In contrast, management (3.4%), publishing and legal issues (3.0%), information use and sociology of information (2.1%), and housing technologies (0.4%) were found to be the subjects of least interest for authors of the PLISJ. Pakistani authors (66.9%) were the main group of submitters; and USA, Saudi Arabia, UK, Canada, Kuwait, and Bangladesh citizens were at the next ranks. 88.6% articles were written by single authors; while the rest of the works were multi-authored. It was also found that descriptive (61.0%), historical (17.8%), empirical (12.3%), and case study (8.9%) comprised the research methodology followed by authors.

28. Thanuskodi (2010) did a bibliometric analysis on the *Library Philosophy and Practice* (LPP) during 2005-2009. Research purposes were to identify the number of contributions published during the period of study, to determine the year-wise distribution of articles, to study the authorship pattern, to find out the

ranking of leading contributors, to study the subject coverage of articles, to study the length of articles, to discover the number of cited documents and the average number of references per article, to identify the number and forms of documents cited, to identify the year-wise distribution of cited journals, and to study the age of cited journals. Findings showed that 249 articles published during the period 2005-2009. The maximum number of articles published in 2009 (82) and minimum in 2005 (10) articles. The journal published on an average of 50 articles per year. A majority of a contributions appeared under library and Internet 54 (21.69%). The next position was taken by user studies 50 (20.10%). This was followed by library and information science 37 (14.85%) and special libraries 23 (9.23%). The largest number of articles had two authors 94 (37.75%). This was followed by single author 78 (31.32%), three authors 51 (20.48%) and four authors with 26 (10.44%) of the total articles. Out of 249 articles single authors contributed 78 (31.32%) while the rest 171 (68.68%) articles were contributed by joint authors. A majority of the articles 149 (59.83%) were contributed by Universities. This was followed by colleges with 67 (26.90%) and research institutions 28 (11.24%) articles. The remaining 5 (2.03%) articles were contributed by other institutions. Most articles - 129 (51.80%) - are 4-6 pages long, followed by 72 (28.93%) articles with 1-3 pages, and the remaining 48 (19.27%) articles had the length of 7 and more pages. Nearly all contributions had references (91.16 %). A majority of the contributors preferred journals as the source of information which occupied the top position with the highest number of citations 1,026 (53.03%) of the total 1,935 citations. The second highest position was occupied by books with 432 (22.32%) citations. It was followed by seminar /conference proceedings with 243 (12.55%).

In general, reviewing the literature shows that number of articles per volume, type of articles, subject coverage of articles, gender of authors, co-authorship pattern and degree of collaboration, nationality or geographical location of authors, institutional affiliation of authors, language preferences of authors, dispersion and types of references by articles,



and funding source were the main measures analyzed. The current study, hence, follows a similar approach and deals with some of these measures. Among the abovementioned items, gender of authors, institutional affiliation of authors, language preferences of authors, dispersion and types of references by articles, and funding source were not considered at all; because we were not able to identify gender of authors by their names, English was the only language used to write articles, and we were not trying to discover anything about institutional affiliation of authors, dispersion and types of references by articles, and funding source.

### OBJECTIVES OF THE RESEARCH

The objectives of this study, covering the period 2007-2010, were:

1. To examine the quantitative growth of articles by volume;
2. To examine authorship characteristics/ pattern of LIS literature published in IJLIS;
3. To know the country of origin of the IJLIS authors or their geographical affiliations;
4. To study the type of research published in IJLIS; and
5. To analyze LIS literature published in IJLIS so that areas of interest for LIS researchers and current trends may be explored.

### SIGNIFICANCE OF THE RESEARCH

Professional and academic development of a journal in any field can be gauged through analyzing the literature produced in that journal. As IJLIS published a part of LIS research output during the period of the study, analysis of this research output is important to understand status of LIS research in India. Articles published in a journal could reflect the trends and emerging areas of research in a discipline. Also, the study of a journal addresses a range of variables and the changes that occur to the variables over time. These include changes in the authorship pattern, the emergence of multi-

authored works, as well as the distribution of authors in accordance to country. Journal articles offer many explicit and several implicit variables that point to the evolution of the Journal as well as the discipline it represents. Results of this study will help the researchers to identify the prevailing trends and interests of LIS researchers in India. Areas of least interest can be focused for future research so that all areas of the profession can progress concurrently. Results for the growth of library and information science literature published in IJLIS will illustrate how library and information profession has progressed over the years in India.

### RESEARCH METHODOLOGY

Using bibliometric method, a total of 87 articles and book reviews from 11 issues of IJLIS were examined for discovering authors' country of origin, collaboration among authors, research type, and subjects covered. Author index, subject index, conference calendar, news, and advertisements were not included in the study. An identification and coding frame was prepared for identification and reliable coding of articles to be analyzed. Data were then entered in Microsoft Excel software package and analyzed to observe different characteristics of the published literature.

Different classification schemes including DDC, LCC, and JITA have yet been considered for subject categorization of the articles in such studies. JITA - a specialized scheme for LIS field that was created to classify the documents of E-prints in Library and Information Science (E-LIS) - was selected. It is a comprehensive classification of different LIS subjects and at the same time very simple. It was, therefore, decided to use JITA for subject categorization of articles in this study.

### FINDINGS OF THE RESEARCH AND DISCUSSION

To find out authorship characteristics, we first enumerated the number of articles in any issue of each volume. As it has been shown in

table 1, there is an increase in the number of articles per issue appeared in IJLIS during the period of study. According to Koehler and et al, the size and frequency of each issue is in large part a function of acceptable submissions to each journal (2000b). Because of unfamiliarity among

LIS professionals and not receiving adequate submissions, the journal could not publish more than two issues in the first volume (Table 1).

Through comparing the total numbers at the most below row, one could find that IJLIS had probably a plan for development and naturally

**Table 1: Number of articles appeared in IJLIS during 2007-2010**

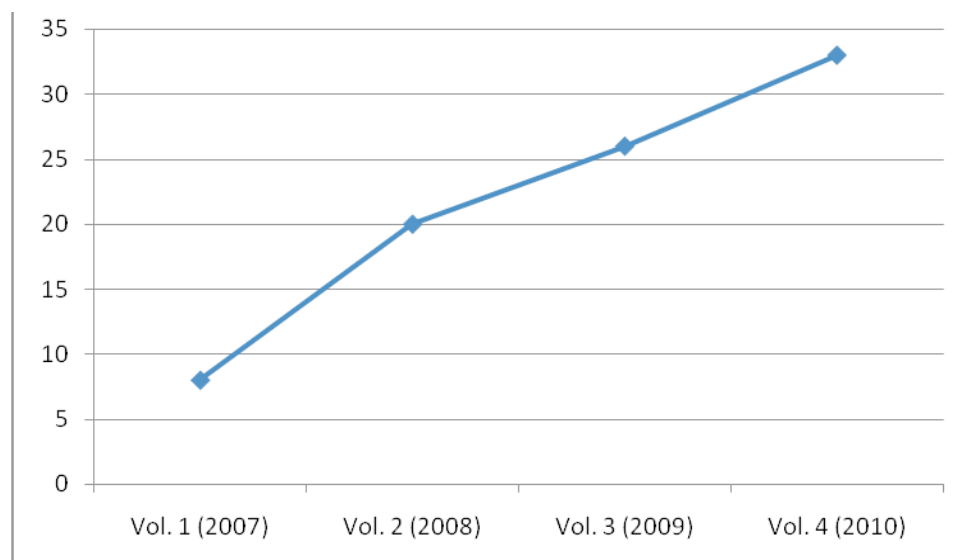
Volume Issue	Vol. 1	Vol. 2	Vol. 3	Vol. 4	Total
No. 1	3	7	7	11	28
No. 2	5	7	7	10	29
No. 3	-	6	12	12	30
Total	8	20	26	33	87

an obvious growth can be seen (Figure 1). These results are similar to the results of the study conducted by Naseer and Mahmood (2009). They observed a sharp increase during the last two years of their study. Such a steady growth was shown in 17 LIS OA e-journals (Mukherjee, 2009a; 2009b). Also, Tiew, Abrizah and Kiran (2002) found that in the third last volumes of the MJLIS 14 articles were published by volume on average. In the case of *Ghana Library Journal* which was studied by Sam (2008), the average number of articles by volume was 7. Mukherjee

(2009a; 2009b) found that the average number of articles per issue is about 5. Of course, it should be kept in mind that growth in the number of articles appeared in each volume won't be continued forever. Like any other academic journal, IJLIS, has absolutely a policy about the bulk of any issue. For this reason, it will likely continue with the existed plan and will publish around 10 articles in each issue.

Collaboration with other researchers is always an indicator of the quality of scientific communication in an academic field. Koehler

**Figure 1: Growth in the number of articles published in each volume of the IJLIS**



and et al suggest that multi-authorship is a sign of a mature discipline, publishing complex articles addressing complex issues (2000a). In spite of being a new journal, IJLIS has a good record in this area. 50 articles (57.5%) were

written by two or more authors, while the number of single-authored articles (37 = 42.5%) is fewer.

However, there is a powerful tendency among authors to have collaboration with each other. Bakri and Willett (2008, 2009) provided similar

**Table 2: State of collaboration among authors contributing to the IJLIS**

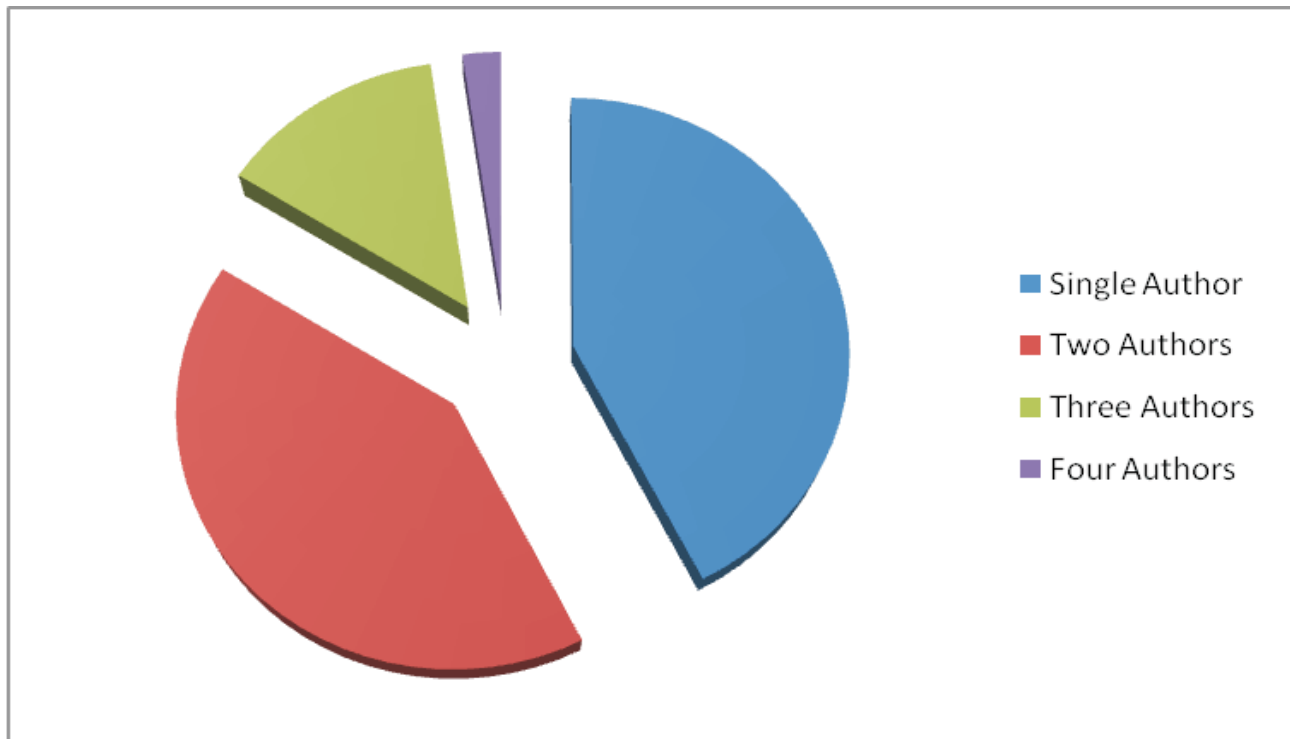
Number of Collaborating Authors	Frequency	Percentage
Single Author	37	42.5%
Two Authors	36	41.4%
Three Authors	12	13.8%
Four Authors	2	2.3%
Total	87	100%

data (63.5% and 82.2% for multi-authored articles respectively). Thanuskodi showed 68% for multi-authorship in *Library Philosophy and Practice* (2010). In Terry's study on *College and Research Libraries* (CRL) 59.5% articles were multi-authored (Atinmo and Jimba, 2002). Tiew, Abrizah and Kiran (2002) have also found that 52.6% articles are multi-authored. Chaurasia (2008) indicated that the majority of papers were authored jointly in *Annals of Library and Information Studies*. This research, however, found results opposite to the results of the study done by Naseer and Mahmood (2009). There are just three years of time interval between the period investigated in their study (1998-2007) and the period surveyed in the present study (2007-2010). Nasser and Mahmood (2009) found 88.6% articles as single-authored and 11.4% articles as multi-authored. For the case of *African Journal of Library, Archives and Information Science* (AJLAIS), Atinmo and Jimba (2002) showed 83.2% for single-authorship. In *Knowledge Organization*, Authorship pattern showed a tendency (76.2%) towards single authorship (Haridasan and Kulshrestha, 2007). Almost 71% articles appeared in 28 information science e-journals published during 1995-2001 were under single authorship (Hawkins, 2001). The majority of articles (61%) appeared in JASIST were single-authored (Al-Ghamdi and et al, 1998). Buttlar found that about 60 percent of articles appeared in 16 LIS journals were single-authored (Atinmo and Jimba, 2002). In 17 LIS OA e-journals, 56.29% articles were by single authors (Mukherjee, 2009b). For *Scientometrics*,

there was a similar result (Bharvi, Garg and Bali, 2003). In Naqvi's study (2005) on the *Journal of Documentation* over 55.8% articles were single-authored. Koehler and et al clarified that 52.7% articles of the five selected LIS journals were single-authored (2000a). Again on JASIST, 42.3% articles were single-authored (Liu, 2003). Zemon and Bahr (1998) showed 33.3% for co-authorship. Tiew (2006) also indicated that 79% articles are single-authored. Cline (1982), Rapits (1992), and Sam (2008) results are opposite to the findings of this study too (Figure 2).

Most of the articles appeared in IJLIS have been written by Indian authors<sup>1</sup>. Table 3 shows that 141 Indian authors have participated in IJLIS (91.6%). Indian authors are followed by Nigerian (5.2%) and Botswana (2%) researchers. Iranians are at the end of the list with just two articles (1.2%).

Chaurasia (2008) showed that majority of contributions (96.2%) in *Annals of Library and Information Studies* were from India. Findings of this section are in accordance with the findings of Bakri and Willett (2009). They found that 70.6% of contributors in MJCS were from Malaysia. In another research, Naseer and Mahmood (2009) showed that 66.9% articles were from Pakistan; and Pakistani authors were followed by Americans with 4.2%. Sam (2008) indicated that 95% contributors in *Ghana Library Journal* were Ghanaian. Meadow and Zaborowsk (1979) also discovered that most of the authors (79.6%) contributed in *Journal of the American Society for Information Science* (JASIS)

**Figure 2: State of collaboration among authors**

came from the United States of America. Koehler and et al. (2000b) provided similar result for the same journal. He and Spink (2002) found that most of the contributions in JASIST and

JDoc were respectively from USA and UK. They also showed that UK and Canadian authors were the most frequent foreign authors in JASIST; and authors from the United States and

**Table 3: Country of origin of authors**

Country of Origin	Frequency	Percentage
India	141	91.6%
Nigeria	8	5.2%
Botswana	3	2%
Iran	2	1.2%
Total	154	100%

Canada were the most frequent foreign authors in JDoc. But Al-Ghamdi and et al (1998) clarified that most of the JASIS authors were non-American. In 20 top ISI indexed LIS journals, 66.99% authors were from US and UK (Sin, 2004). Siddiqui plotted the geographic distribution of authors in four LIS journals and found that most of them were based in the United States (He and Spink, 2002). Among 28 LIS e-journals 56.1% contributors were from USA (Hawkins, 2001). Also, in 17 LIS OA e-journals, highest number of publications (51.70%) was reported from North America

(Mukherjee, 2009b). 51.4% papers appeared in *Journal of Documentation* were from the United Kingdom (country in which the journal is published) and the rest came from other parts of the world (Naqvi, 2005). Koehler and et al clarified that most of the articles appeared in the five selected LIS journals were written by national citizens of the countries publish the journals (2000a). Nevertheless, Lipetz compared the trend in percentage of U.S. and non-U.S. JASIS authors from 1955 to 1995. He found that JASIS authorship had become more international, and concluded that JASIS was

more reflective than in the past of foreign contributions in information science research (He and Spink, 2002). In all cases, however, there is too distance among national contributors and their followers. The results of the geographical distribution of authors demonstrate that the journal (IJLIS) reflects the view of most Indian librarians and information scientists, with only 13 authors from other countries. This may be an indication that the journal is not well-known outside India and is therefore not attracting authors from other countries. It may also be as a result of the fact that though the publication frequency is almost quarterly, there may be no indication of the month in which it is to be published. This lapse would probably discourage authors from outside the country. In contrast, Bakri and Willett (2008) found that 42.4% contributors in MJLIS were Malaysian; and they are followed by Indians (25.5%). Bangladesh, Africa, Australia, and Sri Lanka citizens were at the next levels. In their study, national and international contributors had not too much distance according to their contribution ratio. Tiew, Abrizah and Kiran (2002) provided the same data on geographical affiliation of authors. In their study, (45%) authors were geographically affiliated to Malaysia, followed by India with 25 (31.25%) and Bangladesh with 9 (11.25%) contributions. Two authors each were from the United Kingdom and Taiwan. USA, Tanzania,

Singapore, Botswana and Australia all had one author each.

In table 4, an analysis on the articles published in IJLIS was done according to the type of research methodology adopted. Before we discuss the table 4, it should be emphasized that there was not any article adopting some of the popular methods such as content analysis, Delphi, empirical, scientometrics, and Webometrics as research methodology.

According to the findings of this table, documentary method is the most used research methodology (48.3%). Using other methods for doing research has obviously difficulties and hence there is not an attitude among LIS professionals to take advantage of other methods. Moreover, they are likely not familiar with new research methods, such as the Webometrics. Survey (34.5%) is at the second rank, as it is a well-known research method in the LIS field. Since social science research methodology have been instructed in the LIS departments for several decades, librarians and LIS tutors are mainly acquainted with survey. This chain continues with bibliometrics, case study, citation analysis, and historical methods. In contrast, there is a shortage in using qualitative research methods. Among qualitative research methods, case study and historical methods (totally 8%) have just been used; while ethnography, grounded theory, phenomenology, action research, focus group,

**Table 4: Types of research published in IJLIS**

Research Methodology	Frequencies	Percentage
Documentary	42	48.3%
Survey	30	34.5%
Bibliometrics	6	6.9%
Case Study	6	6.9%
Citation Analysis	2	2.3%
Historical	1	1.1%
<b>Total</b>	<b>87</b>	<b>100%</b>

discourse analysis, biography studies, and life history remained as non-used or may be undiscovered methodologies among IJLIS contributors. Methods with managerial root such as system analysis and mathematical basis like operations research have not also been adopted. These results are similar to the results

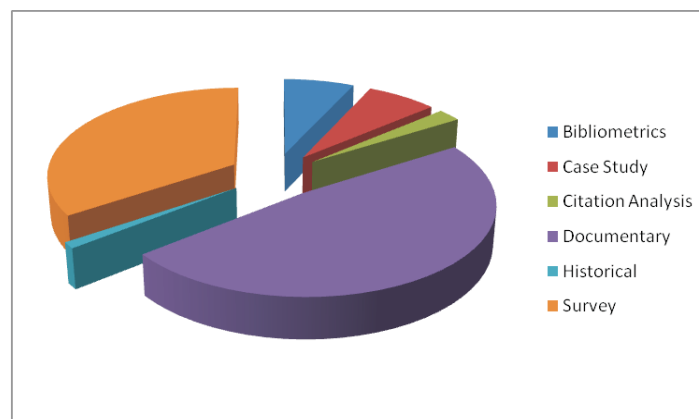
of Naseer and Mahmood (2009), in that descriptive or documentary is the main research method followed by contributors. At the same time, Pakistani contributors are more familiar with empirical method than Indians. Comparison of these results with that of Khan and Samdani (1997) shows that percentage of

descriptive writings in PLISJ has decreased (from 77.27% to 61%) in last decade; while percentage of articles based on empirical research has increased (from 4.15% to 12.3%). It is definitely a healthy sign for LIS profession in Pakistan and needs to continue in future also. Ratio of case studies has also decreased (from 13.43% to 8.9%) during the last decade. In *Scientometrics*, Case studies and empirical papers contributed 35 (47%) papers out of 75 (Schoepflin and Glanzel, 2001). Gore and et al found the survey as the most used research method (2009). In a research on the *Bulletin of the Medical Library Association*, Dimitroff found 29.8% research articles (1992). Tiew, Abrizah and Kiran (2002) used another categorization for research methodologies. In their view point, survey and empirical studies comprise the concept of research as a whole. In addition to the research, they used review and concept as two other categories. Their definition of review and concept articles overlaps with what we mean by documentary method. In other words, they used research and documentary methods to classify articles. In their case, MJLIS, 53 of the 76 articles (69.74%) were research in nature and documentary articles with 23 articles (29.26%) were at the second place. Bakri and Willett (2008) also found that most of the articles (97%) were research. Such a finding shows an obvious difference among IJLIS and PLISJ contributors on the one hand and IJLIS and MJLIS contributors on the other hand. Figure 3 illustrates an overall perspective of this fact.

Table 5 indicates the subject interests among IJLIS contributors. As said, JITA scheme from E-LIS database adopted for the purpose of this research.

According to the figure 4, Information technology and library technology and Users, literacy and reading (24.1%), Management (11.5%) and Information use and sociology of information (9.2%) are the most popular subjects among IJLIS contributors. In contrast, Libraries as physical collections and Technical services in libraries, archives, museum (2%) were found to be the subjects of least interest for authors of the journal. Bakri and Willett (2008) also found information technology as the most prominent subject among MJLIS authors. IT was also the predominant subject (18.8%) among contributors of 17 LIS OA e-journals (Mukherjee, 2009a; 2009b). These findings are not in accordance with the findings of Naseer and Mahmood (2009) in that in their study Industry, profession and education, Libraries as physical collections, and Information technology and library technology were the most popular subject areas for research. The present research shows that the third item in Naseer and Mahmood (2009) study is at the second rank in ours. Alemna (1996) indicated that Information technology was the most popular subject among AJLAIS authors. Furthermore, IJLIS authors are more interested in management as a research topic than PLISJ contributors. In both studies, housing technologies category was at the end of the list. In a research on *Library Philosophy and Practice* (LPP), Thanuskodi identified library

**Figure 3: Ratio of each research methodology in IJLIS contributions**



and Internet as the most important subjects covered by the LPP contributors (2010). The abovementioned studies, however, are completely differed from the studies conducted

by Sam (2008) in that in his study, various types of libraries were the research themes; Tiew, Abrizah and Kiran (2002) and Hawkins (2001) in that scientific and professional publishing

**Table 5. Subject interests among IJLIS contributors**

Rank	Subject Categories	Frequency				Total
		Vol. 1	Vol. 2	Vol. 3	Vol. 4	
1	Industry, profession and education	-	1	1	2	4
2	Libraries as physical collections	-	1	-	1	2
3	Information technology and library technology	2	4	7	8	21
4	Theoretical and general aspects of libraries and information	2	3	-	1	6
5	Users, literacy and reading	-	5	7	9	21
6	Information sources, supports, channels	1	1	2	-	4
7	Technical services in libraries, archives, museum	-	-	1	1	2
8	Information treatment for information services	1	3	1	1	6
9	Management	-	1	3	6	10
10	Publishing and legal issues	-	-	2	1	3
11	Information use and sociology of information	2	1	2	3	8
12	Housing technologies	-	-	-	-	0
<b>Total</b>	-	87				

(14.5%) and Electronic Publications (20.7%) were the most popular research areas among IJLIS and 28 LIS e-journals' contributors respectively; Zemon and Bahr (1998) whose findings showed that administration (44.4%) and public services (24%) were the most referred subject areas; and also from the research conducted by Kajberg (1996) in that Individual Libraries was the most important subject.

Figure 5 shows the topical progress in research areas during 2007-2010. Series 1 (Blue) indicates the topical progress in volume 1. Series 2 (Red) reflects the same in volume 2. Series 3 (Green) proves the flow of studies in volume 3. Finally, series 4 (Violet) marks the progress in volume 4.

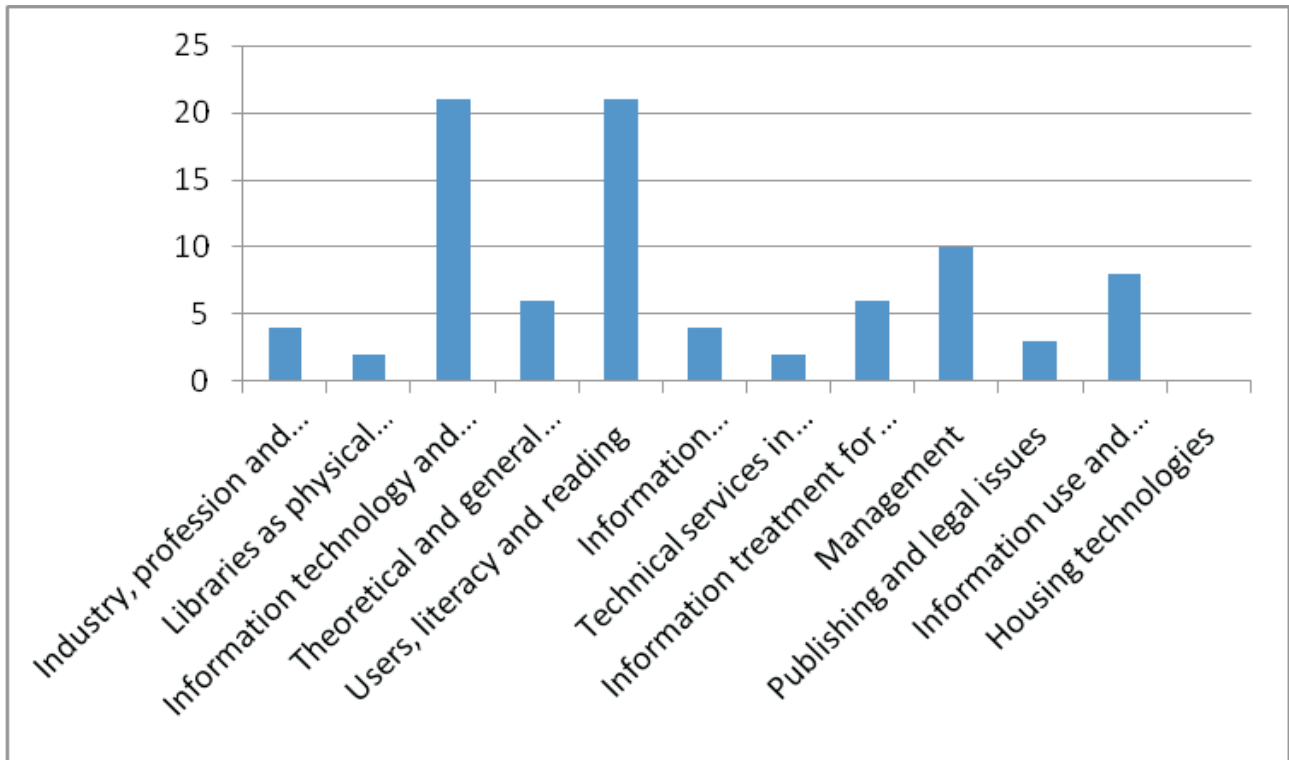
## CONCLUSION

This research did a bibliometric study on *Indian Journal of Library and Information Science* (IJLIS) to examine the quantitative growth of articles by volume; to examine authorship characteristics/pattern of LIS literature published in IJLIS; to know the country of origin of the IJLIS authors or their geographical

affiliations; to study the type of research published in IJLIS; and to analyze LIS literature published in IJLIS so that areas of interest for LIS researchers and current trends may be explored.

The results of this study provide insight into different characteristics of literature published in IJLIS during 2007-2010. A quantitative growth of articles by volume was discovered. Of course, the journal is currently has a stable publication pattern. The authorship pattern tends to team works. The journal is expected to reinforce the co-authorship culture. Most of the contributors were from India. This means that the journal is not well-known in other countries and does not attract non-Indian authors. It may also be as a result of the fact that though the publication frequency is almost quarterly, there may be no indication of the month in which it is to be published. From the research methodology viewpoint, a majority of articles were documentary and survey works. The journal should publish special issues based on different research methodologies. Publishing special issues would also make subject coverage of articles more variable.

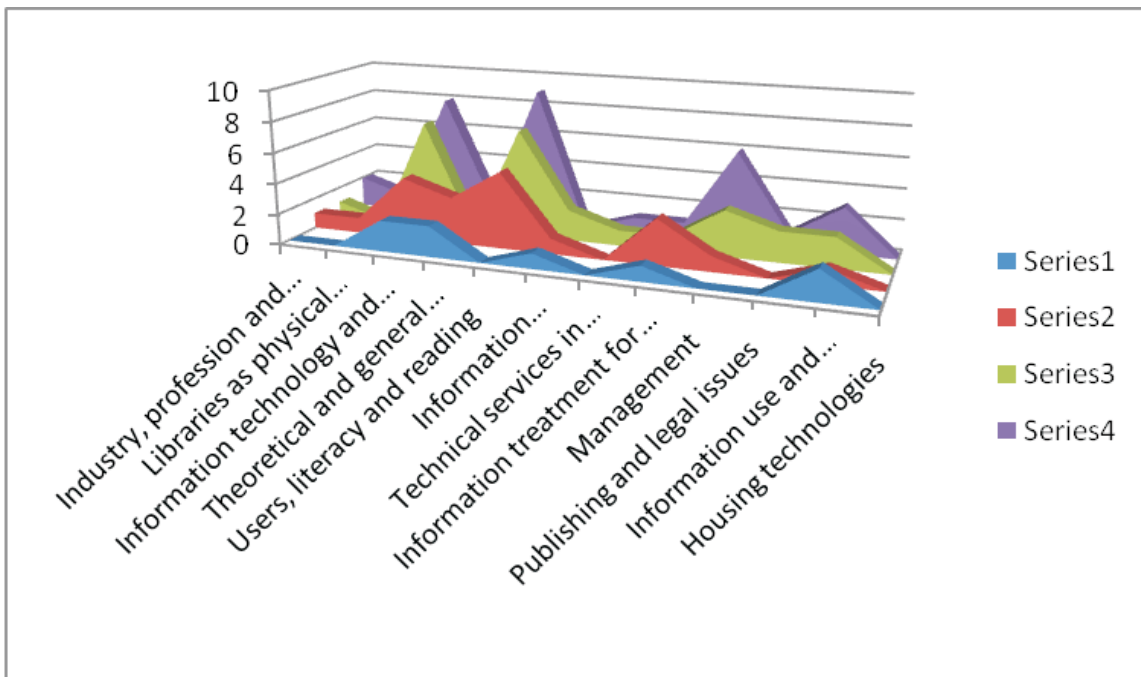
Figure 4: Subject interests of contributors



RECOMMENDATIONS

1. Team work should be encouraged though facilitating review and acceptance procedures for multi-authored works;

Figure 5: Topical progress in research areas





2. IJLIS should make itself more visible to the outside world by identifying international indexing and abstracting agencies to cover its publication. Therefore, the editorial board should ensure some degree of international visibility by providing details and other necessary information required by major services such as *LISA*, *LISTA*, and *Library Literature* in order to seek coverage. Once this is accomplished, this information must be clearly noted in future publications; to make known the fact to future contributors. IJLIS should also present itself through mailing lists, discussion groups, collaboration in social networks, and having presence in national and international LIS festivals, workshops, seminars, conferences, congresses and symposiums;

3. The journal should clarify in its publication policy that authors receive an acceptance letter - indicating a given issue in which the article expected to be appeared - once the review process finished satisfactory;

4. The journal should publish special issues on topics which imply using other research methods including case study, historical, ethnography, grounded theory, phenomenology, action research, focus group, discourse analysis, biographical, life history, system analysis and operations research; and

5. LIS researchers, especially faculty members, should also pay attention to the neglected areas of research like profession, collections, theoretical foundations, information sources, technical services, publishing and Housing technologies.

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## REFERENCES

1. Alemna, A. A. The periodical literature of library and information in Africa: 1990-1995. *International Information and Library Review*, 1996; 28: 93-103.
2. Al-Ghamdi, A. and et al. Authorship in JASIS: A quantitative analysis. *Katherine Sharp Review*, 6. 1998. Available at: <http://www.cindoc.csic.es/cybermetrics/pdf/333.pdf>
3. Atinmo, M. I. and Jimba, S. W. Gender and authorship pattern in an African librarianship journal, 1991-1997. *Library Review*, 2002; 51(9): 458-463.
4. Bakri, A. and Willett, P. *The Malaysian Journal of Library and Information Science 2001-2006: a bibliometric study. Malaysian Journal of Library and Information Science*, 2008; 13(1): 103-116.
5. Bakri, A. and Willett, P. The Malaysian Journal of Computer Science: a bibliometric study. *Malaysian Journal of Library and Information Science*, 2009; 14(2): 39-49.
6. Bharvi, D.; Garg, K. C. and Bali, A. Scientometrics of the international journal Scientometrics. *Scientometrics*, 2003; 56(1): 81-93.
7. Chaurasia, K. K. Bibliometric analysis of Annals of Library and Information Science (2002-2006). In *Proceedings MANLIBNET 9th Annual National Convention*, New Delhi, India. 2008.
8. Cline, G. S. College & Research Libraries: Its first years. *College and Research Libraries*, 1982; 43: 208-232.
9. Dimitroff A. Research in health sciences library and information science: a quantitative analysis. *Bulletin of the Medical Library Association*. 1992; 80(4): 340-346.
10. Gore, A. and et al. Trends in health sciences library and information science research: an analysis of research publications in the Bulletin of the Medical Library Association and Journal of the Medical Library Association from 1991 to 2007. *Journal of the Medical Library Association*, 2009; 97(3): 203-211.
11. Haridasan, S. and Kulshrestha, V. K. Citation analysis of scholarly communication in the journal Knowledge Organization. *Library Review*, 2007; 56(4): 299-310.
12. Hawkins, D. T. Bibliometrics of electronic journals in information science. *Information Research*, 2001; 7(1). Available at: <http://informationr.net/ir/7-1/paper120.html>
13. He, S. Y. and Spink, A. A comparison of foreign authorship distribution in JASIST and the Journal of Documentation. *Journal of the American Society for Information Science and Technology*, 2002; 53(11): 953-959.
14. Kajberg, L. A content analysis of library & information science serial literature published in

- Denmark, 1957-1086. *Library and Information Science Research*, 1996; 18: 25-52.
15. Khan, M. and Samdani, R. A. Library resources and publishing: 50 years analysis. *Pakistan Library Bulletin*, 1997; 28(4): 29-39.
  16. Koehler, W. and et al. A Bibliometric Analysis of Select Information Science Print and Electronic Journals in the 1990s. *Information Research*, 2000a; 6(1). Available at: <http://informationr.net/ir/6-1/paper88.html>
  17. Koehler, W. and et al. A profile in statistics of journal articles: Fifty years of American Documentation and the Journal of the American Society for Information Science. *Cybermetrics*, 2000b; 4(1): paper 3. Available at: <http://www.cindoc.csic.es/cybermetrics/articles/v4i1p3.html>.
  18. Liu, J. A bibliometric study: author productivity and co-authorship features of JASIST 2001-2002. *Mississippi Libraries*, 2003; 67(4): 110-112.
  19. Meadow, C. T. and Zaborowski, M. A. Some statistical aspects of JASIS publications. *Journal of the American Society for Information Science*, 1979; 30(6) 368-371.
  20. Mukherjee, B. Do open-access journals in library and information science have any scholarly impact? A bibliometric study of selected open-access journals using Google Scholar. *Journal of the American Society for Information Science and Technology*, 2009a; 60(3): 581-594.
  21. Mukherjee, B. (2009b). Scholarly research in LIS open access electronic journals: A bibliometric study. *Scientometrics*, Vol. 80, No. 1: 167-194.
  22. Naqvi, S. H. Journal of Documentation: a bibliometric study. *International Information Communication and Education*, 2005; 24(1): 53-56.
  23. Naseer, M. M. and Mahmood, K. LIS Research in Pakistan: An Analysis of Pakistan Library and Information Science Journal 1998-2007, 2009. *Library Philosophy and Practice*. Available at: <http://unllib.unl.edu/LPP/naseer-mahmood.htm>.
  24. Raptis, P. Authorship characteristics in five international library science journals. *Libri*, 1992; 42(1): 35-52.
  25. Sam, J. An Analysis of Ghana Library Journal: A Bibliometric Study. *African Journal of Library, Archives and Information Science*, 2008; 18(1): 67-76.
  26. Schoepflin, U. and Glanzel, W. Two decades of Scientometrics: an interdisciplinary field represented by its leading journal. *Scientometrics*, 2001; 50(2): 301-312.
  27. Sin, S-C. J. Are library and information science journals becoming more internationalized? A longitudinal study of authors' geographical affiliations in 20 LIS journals from 1981 to 2003. In A. Grove (Ed.), 2004. *Proceedings of 68<sup>th</sup> Annual Meeting of the American Society for Information Science and Technology (ASIST)*, 42, Charlotte, US.
  28. Thanuskodi, S. Bibliometric Analysis of the Journal *Library Philosophy and Practice* from 2005-2009, 2002. *Library Philosophy and Practice*, Available at: <http://unllib.unl.edu/LPP/thanuskodi-lpp.htm>
  29. Tiew, W. S. Authorship characteristics in Sekitar Perpustakaan 1994-2003: A bibliometric study. *Malaysian Journal of Library and Information Science*, 2006; 11(1): 65-75.
  30. Tiew, W. S.; Abrizah, A. and Kiran, K. Malaysian Journal of Library and Information Science 1996-2000: A bibliometric study. *Malaysian Journal of Library and Information Science*, 2002; 6(2): 43-56.
  31. Zemon, M., and Bahr, A. H. An analysis of articles by college librarians. *College and Research Libraries*, 1998; 59: 421-431.

#### Further Readings

1. Carter, R. C. and Kascus, M. A. Cataloging & Classification Quarterly, 1980-1990: Content, change, and trends. *Cataloging and Classification Quarterly*, 1991; 12: 69-79.
2. Olsgaard, J. and Olsgaard, J. Authorship in five library periodicals. *College and Research Libraries*, 1980; 41: 49-54.
3. Schrader, A. M. A bibliometric study of the 'journal of Education for Librarianship,' 1979-1984. *Report No: ED 262 785*, 1985; 95.
4. Smiraglia, R. P. and Leazer, G. H. Reflecting the maturation of a profession: Thirty-five years of Library Resources & Technical Services. *Library Resources and Technical Services*, 1995; 38: 27-46.
5. Stephenson, M. S. The Canadian Library Journal, 1981-91: An analysis – Le Canadian Library Journal, 1981-91: Analyze. *CJILS/RCSIB*, 1993; 18: 1-18.
6. Terry, J. L. Authorship in College & Research Libraries revisited: Gender, institutional affiliation, collaboration. *College and Research Libraries*, 1996; 58: 377-383.