

**AUTHORSHIP PATTERNS AND COLLABORATIVE RESEARCH IN THE  
'INFORMATION RESEARCH AN INTERNATIONAL ELECTRONIC JOURNAL'  
2011–2014**

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**ABSTRACT:** - *The study highlights the authorship pattern and research collaboration of the Information Research an International Electronic Journal. The study is based on research articles appeared in the journal during the period from 2011 to 2014. It illustrates various important aspects like –growth of contributions by year and volume, authorship patterns, author productivity, single- and multi-authored papers by year and degree of collaboration. The findings of the study revealed that almost half of the articles are single-authored, i.e. 40 (30.07%). The average productivity per author is 0.02 and average number of authors per paper of all the articles is 0.99. The average degree of author collaboration in the source journal is 0.70 which clearly indicates that the growing tendency of collaborative research in the field of library and information science (LIS).*

**KEY WORDS –** *Bibliometrics, Authorship patterns, Author productivity, Degree of collaboration, Average author per paper, Productivity per author, Growth of authors*

## INTRODUCTION

Bibliometrics is a thrust area of research in different branches of human knowledge since its inception (Singh and Chander, 2014). It is a kind of study that measure all forms of published literature. It throws light on the pattern of growth of literature, inter-relationship among different branches of knowledge, productivity, authorship pattern, degree of collaboration and their uses. It is still,

somehow, acting as a core area of research in the LIS field. It is an application of statistical and mathematical methods to bibliographical studies. It can be defined as the study and measurement of the publication patterns of all forms of written communication and their authorship (Potter, 1981).

A bibliometric study of articles published in journals shows the status of advancement and research in a subject field.

Single journals have been the focus of many bibliometric and scientometric studies. A number of studies have been conducted using bibliometric techniques on individual journals in different subject fields including LIS and still it is a relatively new and valuable area of research. Authorship patterns and degree of author collaborations on writing articles is one of the indicators of reliability in scientific articles. There was no study conducted regarding the authorship patterns and degree of collaboration among the authors of articles published in the Information Research an International Electronic Journal.

#### **SOURCE JOURNAL**

The Information Research an International Electronic Journal is a peer-reviewed journal in the field of LIS. Information Research is an open access international peer-reviewed, scholarly journal, dedicated to making accessible the result of research across wide range of information related disciplines. It is privately published and edited by professor T.D. Wilson. It is hosted and given technical supported by Lund University Libraries, Sweden and editorial support by the University of Boras, Sweden. The Study is based on 133 contributions appended to 16 issues of 4 Volumes of Information Research an International Electronic Journal.

#### **OBJECTIVES OF THE STUDY**

The study intends to comprehend the authorship patterns and research collaboration of the scholarly articles published in the source

journal Information Research an International Electronic Journal from 2011 to 2014 with the following objectives in the scope of its discussion:

1. To ascertain the year-wise distribution of articles published in Information Research an International Electronic Journal during the period under study.
2. To examine the authorship pattern of the contributions.
3. To study author productivity and single- and multi-authored articles by year.
4. To determine degree of collaboration.

#### **SCOPE AND LIMITATION OF THE STUDY**

The present study is based on the research articles published in the source Information Research an International Electronic Journal for a period of 4 years, i.e. 2011–2014. Only research articles published in the source journal during the period under study are considered, excluding book reviews.

#### **METHODOLOGY**

Keeping in view of the aforesaid objectives, the primary data for the study has been extracted from the publisher website of the Information Research an International Electronic Journal pertaining to the period of four years from 2011 to 2014. Each research article published in the journal selected for this study was carefully studied, and required details were entered in the MS-Excel format. A total of 77 authors and 46 research articles have been identified. For each

article details regarding number of articles, number of authorship, authorship pattern, author's productivity, single- and multi-authored articles by year were collected to fulfill the objectives of the study. The present study is a simple bibliometric analysis carried out to understand the authorship pattern and degree of collaboration of *JKCM*. The authorship pattern has been analysed by using Subramanayam's (1983) degree of collaboration in quantitative terms. Average author per paper and productivity per author have been calculated by using the formula given by Yoshikane *et al.* (2009). The collected data were organized, calculated, tabulated, analyzed and presented by using simple arithmetic and statistical methods in order to provide analysis.

## REVIEW OF RELATED LITERATURE

It is observed from the published literature that a number of studies have been carried out on authorship pattern and degree of collaboration in different subject fields. Here an attempt is made to discuss a few recently published studies in the field of LIS concentrating on the authorship pattern and degree of collaboration.

Suradkar and Khaparde (2012) analyzed that 12,263 articles published in the field of library management research were retrieved from the LISA database for the period 2000–2009. It was revealed from this study that the single-authored papers contributed 67.90% (8327 articles), and the degree of collaboration in library management research was 0.277. Walia and Kaur (2012)

revealed that out of 269 papers 127 (47.21%) papers are single-authored and 142 (52.74%) papers are multi-authored. Rattan and Gupta (2012) studied the *Malaysian Journal of Library & Information Science* from 2007 to 2011 and found that 'out of 100 articles, single authors contributed 27 (27%) articles while the rest 73 (73%) articles are contributed by many authors' (p. 307). Thavamani (2014a) analyzed 133 articles published in the *Journal of Chinese Librarianship* and found the average number of authors per paper is 1.661% and the average productivity per author is 0.601%.

The average degree of collaboration is 0.443. Thavamani (2014b) analyzed the authorship patterns and collaborative research of the 279 research articles published in *Malaysian Journal of Library and Information Science* for a period from 1996 to 2012 and found that the average number of authors per paper is 2.06. The highest number of author productivity is 72 (12.522%). Majority 180 (64.516%) of the total contributions represent collaborative research. The average degree of collaboration has been arrived at 0.64. However, the present study intends to portray interesting findings of the scholarly communications of the journal *JKCM*, which remains unexplored.

## ANALYSIS AND DISCUSSION

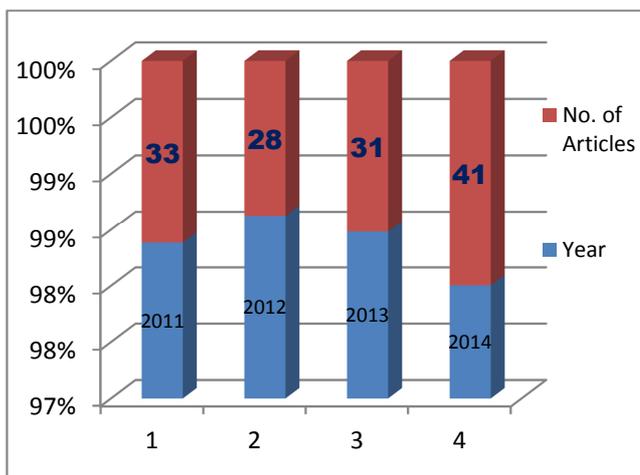
The following section discusses the analysis of the data collected and presented under

different table headings as per the objectives of the study.

**Table 1: Year-Wise Distribution of Articles**

Year	Vol. No.	No. of Issue	No. of Articles	Percentage
2011	16	4	33	24.81
2012	17	4	28	21.05
2013	18	4	31	23.30
2014	19	4	41	30.82
<b>Total</b>	<b>4</b>	<b>16</b>	<b>133</b>	<b>100</b>

Table 1 and Figure 1 present the data of the articles published in the source journal during 2011–2014. A total of 133 articles were identified in last four years. The highest number of research articles 41 (30.82%) were published in 2014 while the lowest number of research articles 28 (21.05%) was published in the year 2012. It indicates the growth of research articles during the recent years and also shows the acceptance of the journal among the scholars.



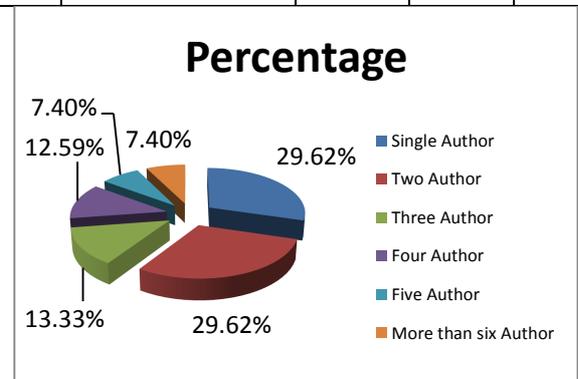
**Figure 1: Year-wise distribution of articles**

**Authorship Patterns**

Table 2 and Figure 2 show the authorship pattern of articles published during 2011–2014. It is obvious from Table 2 that the majority of the contributions were written by a single author and two authors 40 (29.62%), followed by three authors 18 (13.33%), four authors 17 (12.59%) and the lowest is five authors and more than six authors 10 (7.40%). It is clear that the proportions of three and more authored contributions are very less as compared to the single and two authored articles. Therefore, it is declared that the publications in the source journal are dominated by single-authored articles.

**Table 2: Authorship Pattern**

Sr. No.	Authors	No. of Contribution	Total No. of Authorship	Percentage
1	Single Author	40	40	29.62
2	Two Author	40	80	29.62
3	Three Author	18	54	13.33
4	Four Author	17	68	12.59
5	Five Author	10	50	7.40
6	More than six Author	10	60	7.40
<b>Total</b>		<b>133</b>	<b>352</b>	<b>100</b>



**Figure 2: Authorship Patterns**

**Table 3: Authorship Patterns by Year/Volume**

Sr. No.	Year	V ol u m e	Authors Per Article						Total No. Of Article	Total no. of Authors
			One	Two	Three	Four	Five	More than Six		
1	2011	16	14 (35.00%)	14 (35.00%)	3 (16.66%)	3 (17.64%)	3 (30.00%)	2 (20.00%)	33	39
2	2012	17	12 (30.00%)	9 (22.50%)	5 (27.77%)	2 (11.76%)	2 (20.00%)	3 (30.00%)	28	33
3	2013	18	5 (12.50%)	12 (30.00%)	4 (22.22%)	3 (17.64%)	2 (20.00%)	3 (30.00%)	31	29
4	2014	19	9 (22.50%)	5 (12.50%)	6 (33.33%)	9 (52.94%)	3 (30.00%)	2 (20.00%)	41	34
5	4	4	40 (100%)	40 (100%)	18 (100%)	17 (100%)	10 (100%)	10 (100%)	133	135

Table 3 shows the authorship pattern of articles by year and volume of the source journal during 2011– 2014. It is clear that the number of articles and authors has been increased over the years, indicating the dominance of single authored contributions. Volume 16 has the highest number of single-authored articles 14 (35.00%) while volume 18 has the lowest number 5(12.50%). Of the 40 articles contributed by two authors, volume 16 has the highest number 14(35.00%) while volume 19 has the lowest number 5 (12.509%). Of the 18 articles contributed by three authors, volume 19 has the highest number 6 (33.33%) while volumes 16 have the lowest number 3 (16.66%) in 2011. Of the 17 articles contributed by four authors, Volume 19 has the highest number 9 (52.94) while volumes 17 have the lowest number 2 (20.00%). Of the 10 articles contributed by five authors, volume 16 and 19 has the highest number 3(30.00%) while volume 17 and 18 have the lowest number 2 (20.00%). Of the 10 articles contributed by more than six authors, volume 17 and 18 has the highest number 3

(30.00%) while volume 16 and 19 have the lowest number 2(20.00%) in 2011 and 2014.

### Growth of Authors

Table 4 shows the growth of authors by year. The highest number of authors contribution 39 (28.88%) was in 2011, while the lowest number 29 (21.48%) of author contributions was in the year of 2013. It is clear that the numbers of authors are increasing during the recent years. This shows the acceptance of the journal among the scholars.

**Table 4: Growth in number of authors by year.**

Sr. No.	Year	No. of Authors	Percentage
1	2011	39	28.88
2	2012	33	24.44
3	2013	29	21.48
4	2014	34	25.18
<b>Total</b>	<b>4</b>	<b>135</b>	<b>100</b>

## Author Productivity

Data concerning the productivity of author and average author per paper are presented in Table 5 for the journal selected for this study. Yoshikane *et al.* (2009), in their paper published in *Scientometrics*, gave a formula to calculate average author per paper and productivity per author. This formula is used for the calculation of the average author per paper and productivity per author of the Information Research an International Electronic Journal.

The formula is mathematically represented below:

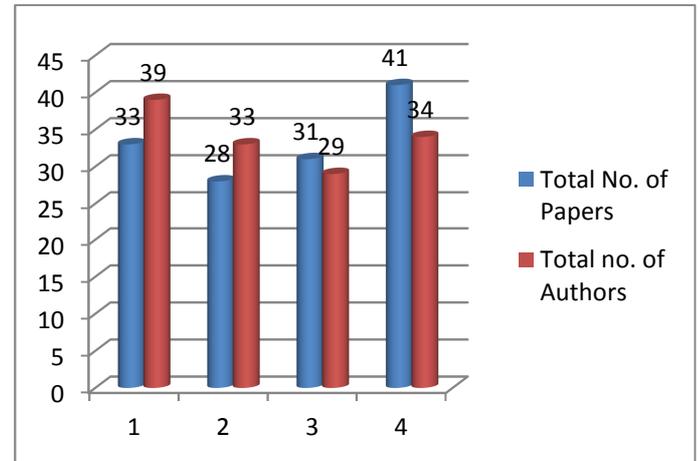
- Average author per paper = number of authors/number of papers.
- Productivity per author = number of papers/number of authors.

**Table 5: Author's productivity**

Year	Total No. of Papers	Total no. of Authors	AAPP	Productivity per Author
2011	33	39	0.85	1.18
2012	28	33	0.85	1.18
2013	31	29	1.07	0.93
2014	41	34	1.21	0.83
<b>Total</b>	<b>133</b>	<b>135</b>	<b>0.99</b>	<b>1.02</b>

It is revealed from Table 5 and Figure 3 that the total average number of authors per paper is 0.99 and the average productivity per author 1.02. The highest number of authors per paper 1.21 was observed in 2014 while the lowest 0.85 in 2011 and 2012. The highest percentage of

an e-author's productivity 1.18 was observed in 2011 and 2012 while lowest 0.83 in 2014.



**Figure 3: Author's productivity**

## Single- and Multi-Authored Research Articles by Year

Table 6 shows the single- and multi-authored articles by year. It is seen that in total, multi authored articles, i.e. 93 (69.92%) have an advantage over the single-authored articles, i.e. 40(30.07%). The highest number of multi authored articles i.e., 32 (34.40%) are published in the year 2014 and lowest in the year 2012, i.e. 16 (17.20%). With regard to the single-authored articles, highest number of articles 14 (35.00%) are found in the years 2011 while the lowest number 5 (12.50%) was found in the year 2013. This reveals that there has been a positive movement towards the collaborative research among the authors.

**Table 6: Single- and multi-authored research articles by year**

Year	Single Authored Articles	Percentage	Multi Authored Articles	Percentage	Total No. of Articles
2011	14	35.00	19	20.43	33
2012	12	30.00	16	17.20	28
2013	5	12.50	26	27.95	31
2014	9	22.50	32	34.40	41
<b>Total</b>	<b>40</b> (30.07%)	<b>100</b>	<b>93</b> (69.92%)	<b>100</b>	<b>133</b> (100%)

**Table 7: Degree of author collaboration**

Year	Single (Ns)	Multi (Nm)	Total (Nm + Ns)	Degree of Collaboration
2011	14	19	33	0.58
2012	12	16	28	0.57
2013	5	26	31	0.84
2014	9	32	41	0.78
<b>Total</b>	<b>40</b>	<b>93</b>	<b>133</b>	<b>0.70</b>

### Degree of Collaboration

The degree of collaboration among authors in the source journal selected for this study is presented in Table 7. To calculate the degree of collaboration among authors, the formula given by Subramanayam (1983) is used which is expressed mathematically as:

$$C = Nm / (Nm + Ns)$$

where

$C$  = degree of collaboration,

$Nm$  = number of multi-authored articles and  $Ns$  = number of single-authored articles.

Here

$$C = 93 / (93 + 40) = 0.70.$$

The result shows the average degree of author collaboration in the Information Research an International Electronic Journal is 0.70, which clearly indicate the growing tendency of collaborative research in the field of LIS. It also indicates that the highest degree of collaboration 0.84 was observed in 2013, while the lowest degree of collaboration 0.57 was in 2012.

### FINDINGS AND CONCLUSIONS

This study examines the authorship patterns and research collaboration of the scholarly articles in the Information Research an International Electronic Journal. Various important aspects like growth of contributions by year and volume, authorship patterns, author productivity, single- and multi-authored papers by year and degree of collaboration were examined. A total of 133 articles contributed by 135 authors were identified in the last four years from 2011 to

2014. The highest number of articles 41 (30.82%) were published in the year 2014.

Almost half of the articles are single-authored i.e. 40 (30.07%). The average number of authors per paper of the entire article is 0.99% and the average productivity per author is 1.02%.

The analysis of the data on single versus multi-authored articles shows that multi-authored articles has a slight advantage over single-authored articles and the number of authors are increasing during recent years. And the overall degree of collaboration during four years is 0.70%. Hence the study concludes with a point that the Information Research an International Electronic Journal has been receiving considerable attention among the scholars.

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