

Inter Institutional & Inter Gender Collaboration in IJODLS & IJLIS Journals –A Comparative Scientometrics

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ABSTRACT

The paper examines 287 articles published in two journals IJODLS & IJLIS, Volume I-4 years 2011-2014. Finds both journals published approximately 50% articles each. Analyses authorship patterns & find both have almost similar percentages of single & joint author papers. Both have average 0.68 C.C. & 1.76 and 1.81 C.I. calculates inter institution collaborations & inter gender collaborations & find their percentages almost identical.

Keywords: Inter gender collaboration, Intra gender collaboration, inter institution collaboration, collaboration coefficient, collaboration index.

1. Introduction:

Government of India is concerned about under representation of women in higher education. Many steps have been taken to increase their number by way of representation to women in universities & other institutes of higher learning & research. Now a days higher number of women LIS professionals can be seen in libraries but their presence as author of research papers is still less. Their presence as co author with male colleagues is still less due to many social stigmas. Now a days technology has broken barriers of gender differences have been broken .A male & female can write together, even without physical presence by use of internet & such other gadgets .Indian society is now more adoptive to their togetherness.

The aim of this paper is to assess the presences of men & plus women as authors of one single paper in two above journals. The paper studies the presence of women with men in an article. The presence of male & female authors in one single journal article can provide interesting data in the creation of new knowledge. The paper analyses percentage of collaborated papers by men+men only, women+women only & men & women. The later is called inter gender collaboration which is also called cross gender collaboration.

The paper also analyses inter-institutional collaboration .The inter institutional collaboration is actually collaborative participation commonly interchanged with cooperation & coordination .It is a formal agreement between the two institutions for some common goal .In such circumstances research papers may be available with authors from two different

organizations. On the other hand two authors can informally but deliberately cooperate & coordinate together to do some research without any formal collaboration of the institutions .They may join hands in writing a research paper for publication .In future they may or may not collaborate together . The authors may either belong to the same institution or belong to different institutions .These are called intra institutional collaboration & inter institutional collaboration respectively. The paper studies intra & inter institutional collaboration in these two journals.

International Journal of Digital Library Services (IJODLS): ISSN 2349-302X (Print) ISSN: 2250-1142 (Online).IJODLS is an international peer reviewed journal .It is a quarterly publication .It publishes survey reports, reviews and original research papers. It is published by Geetanjali Research Publication from Patiala (Punjab). IJODLS is also available on DOAJ (Directory of Open Access Journal) & ROAD (Directory of Open Access Scholarly Resources).At present subscription rates for the institutions are Rs.3000/ & for individuals Rs.2000/ per annum .Impact Factor of this journal is 3.21.

International Journal of Library & Information Studies(IJLIS): ISSN 2231-4911.IJLIS is an international online peer reviewed journal in English indexed in CrossRef, Google Scholar, Indian citation Index, InfoBase Index and Open J-Gate .Its published from Hyderabad .It is quarterly journal ,published in March ,June ,September, and December. This journal has been initiated by another reputed journal is –PEARL. Its email is editor @ ijlis.org.

2. Objectives:

The study has been completed with the following objectives

1. To compare authorship patterns of journals;
2. To compare the collaboration pattern of authors;
3. To compare inter & intra institutional collaboration in the journal; and
4. To study inter & intra gender collaboration in the journal;

3. Literature review:

Many literature reviews on collaboration have been studied for this study. A few of them are studied here;

Kumar and Kumar (2004)¹ have analysed performance of scientists of ICAR's National Research Centre of Soyabean on their publications and studied ranking of authors and collaboration pattern. Kumar and Kumar (2008)² have also analysed collaboration pattern in five institutions of ICAR. Jain and Kumar (2011)³ have analysed Indian contributions to world soyabean research studying collaboration pattern etc. Swain (2011)⁴ analysed 4274 citations from 266 articles during 2004-2009 Paper had also analysed 59.02% papers of single authorship while 40.98% are of joint authorship & degree of collaboration ranges from 0.22 to 0.52. Hussain, Fatima and Kumar (2011)⁵ analysed 578 articles during 2000-2010 & found 46.54% single author papers & 32.87% two authors papers .Paper also found D.C.0.256. Warraich and Ahmad (2011)⁶ made of Pakistan Journal of Library and Information Science and finds author productivity and authorship collaboration. Kavitha (2013)⁷ has studied 307 articles from 2007 to 2011 & found high degree of collaboration. Chaurasia (2016)⁸ analyses 107 articles & found 68.20% papers of joint authors while 31.78% are of single author .Found degree of collaboration 0.68%. Very small inter gender differences in the collaborative behavior of authors are studied in LIS. A few studies on

women presence have been made abroad such as by Kennedy et al (2007)⁹ Morton et al (2007)¹⁰ Amrein et al (2011)¹¹ etc .The paper of Czajkowski¹² have studied gender analysis of published papers in 8 mathematical journals available on web of science data base.

4. Methodology:

It is part of PhD thesis & studies two journals for the years 2011 – 2014 volume 1-4.The data have been collected from DOAJ. For data collection each paper has been consulted & their authorship has been searched to ascertain details of authors & institutions. The data have been loaded on MS-Excel worksheet for further analysis.

Following bibliometric formulae have been used in this study.

(a) Degree of collaboration (DC) or collaboration Coefficient (C.C.) (Subramanyam, 1983)¹³

$$C.C. = \frac{Nm}{Nm+Ns} \quad \text{Where, } N_s = \text{Single authored publications}$$

Nm = Multiple authored publications

(b) Collaboration Index: - Lawaani¹⁴

$$C.I. = \frac{\text{No. of authors of total joint publications}}{\text{Total joint publications}}$$

5. Hypothesis:

For this study two hypothesis have been formulated:

1. Inter gender collaboration is higher in IJODLS than IJLIS.
2. Inter institution collaboration is higher in IJODLS than IJLIS.

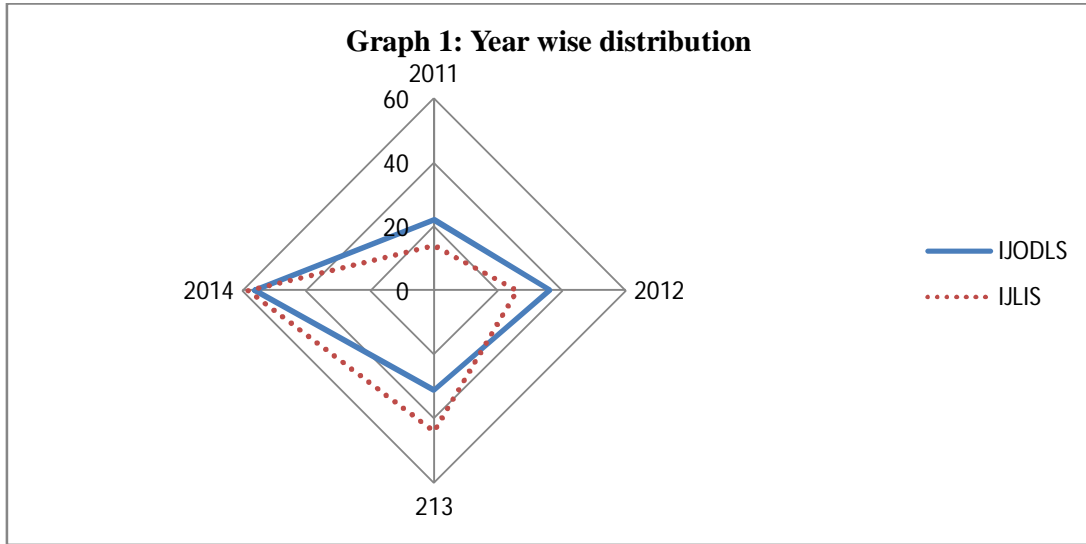
6. Data analysis: The collected data have been analysed as follows to find out collaboration pattern

6.1. Year wise distribution of articles:

Table 1 shows that both journals have published nearly 50% articles each during 4 years .Both of them show an increasing trend in number of articles year by year. On an average IJLIS published 36 articles & IJODLS 35 articles per year. Values of standard deviation are also given in the table. The figures are shown in graph 1.

Table 1: year wise distribution of articles

S.N.	Year	Vol. No.	Total		Grand total	%
			IJODLS	IJLIS		
1	2011	1	22	14	36	12.54%
2	2012	2	36	26	62	21.60%
3	213	3	31	44	75	26.13%
4	2014	4	56	58	114	39.72%
Total			145	142	287	100.00%
			50.52%	49.48%	100.00%	



6.2. Authorship pattern:

The distributions of authorship pattern are given in table 2, 3 & table 4 for two journals separately & also combined. They reveal that both have almost similar percentages of single authorship articles IJODLS has 40% while IJLIS has 32.5% single authored papers. Both have 60% & 67.5 % joint author papers respectively. The table 3 reveals that two author papers dominate in both journals with 45% & 54% respectively. There are very few papers with more than three authors in both the journals. In total out of 287 papers 183 papers are joint author papers (63.7%). This is shown in table 4.

Table 2 : Authorship pattern -IJODLS

S.N.	Year	1	2	3	4	5	5+	Total	%	Authorship
1	2011	10	9	3	0	0	0	22	15.17	37
2	2012	12	13	11	0	0	0	36	24.83	71
3	2013	12	16	3	0	0	0	31	21.38	53
4	2014	24	27	4	1	0	0	56	38.62	94
Total		58	65	21	1	0	0	145	100	255
%		40	44.83	14.48	0.69	0	0	100		

(Total collaborated papers 87)

Table 3: Authorship pattern -IJLIS

S.N.	Year	1	2	3	4	5	5+	Total	%	Authorship
1	2011	3	7	3	1	0	0	14	9.86%	30
2	2012	11	13	2	0	0	0	26	18.31%	43
3	2013	9	26	6	2	0	1	44	30.99%	87
4	2014	23	31	4	0	0	0	58	40.85%	97
Total		46	77	15	3	0	1	142	100.00	257
%		32.39	54.23	10.56	2.11	0.00	0.70	100.00		

(Total collaborated papers 96)

Table 4: Authorship pattern -comparison

S.N.	Year	Single author papers		Joint author papers		Total papers	
		IJODLS	IJLIS	IJODLS	IJLIS	IJODLS	IJLIS
1	2011	10	3	12	11	22	14
2	2012	12	11	24	15	36	26
3	2013	12	9	19	35	31	44
4	2014	24	23	32	35	56	58
Total		58	46	87	96	145	142
%		40.00%	32.39%	60.00%	67.61%		

6.3. Collaboration coefficient and collaboration index:

The table 5 calculates values of collaboration coefficients and collaboration index of both journals. The values are almost similar with an average of 0.6 & 0.68 respectively. The average values of collaboration indexes of both journals are also similar with 1.76 & 1.81 respectively. Thus we find that both the journals have almost similar authorship pattern. This is shown in graph 2 & graph 3.

Table 5 :Collaboration coefficient and collaboration index

S. N.	Year	C.C.		C.I.	
		IJODLS	IJLIS	IJODLS	IJLIS
1	2011	0.55	0.79	1.68	2.14
2	2012	0.67	0.58	1.97	1.65
3	2013	0.61	0.80	1.71	1.98
4	2014	0.57	0.60	1.68	1.67
Total		0.6	0.68	1.76	1.81

6.4 Inter gender collaboration:

In this era of gender similarity; inter gender collaboration is desirable to improve the quality of research papers. The barriers of gender differences are breaking. Here intra gender collaboration means collaboration of male & male or female & female authors in each article. In inter gender collaboration it is at least one author from opposite sex no matter at what number he/she is listed.

In the table 6 we find that in total 41.4 % 32.3% articles of total collaborated papers respectively are of inter gender collaboration in both journals. The figure varies year by year as shown in in the table. The percentages are still less then intra gender collaboration but the values are encouraging. Conclusively we can infer that inter gender collaboration in on rise.

Table 6: Inter gender collaboration

S.N.	Year	Number of collaborated papers					
		Total joint authors		Intra gender		Inter gender	
		IJODLS	IJLIS	IJODLS	IJLIS	IJODLS	IJLIS
1	2011	12	11	6(50.00%)	6(54.55)	6(50%)	5(45.45%)
2	2012	24	15	14(58.33%)	7(46.67%)	10(41.67%)	8(53.33%)
3	2013	19	35	12(63.16%)	25(71.43%)	7(36.84%)	10(28.57%)
4	2014	32	35	19(59.38%)	27(77.14%)	13(40.63%)	8(22.86%)
Total		87	96	51(58.62%)	65(67.71%)	36(41.38%)	31(32.29%)
Mean				12.75	16.25	9	7.75

6.4. Inter Institutional collaboration:

The paper has also studied whether collaborators of a paper belong same institution (Intra institution collaboration) or belong to different institutions (Inter institutional collaboration). Table 6 shows a comparative study of inter institution & intra institutional collaboration & finds that both journals have almost similar patterns. Inter institutional collaboration is very high in both journals & their percentages are 69% & 68% respectively. These values are similar in both the journals .Thus intra institutions collaboration among authors is less. Concludingly inter institutional collaborators is high & similar pattern can be seen in both the journals .This is shown in graph 4 & 5. The result show changing pattern of collaboration.

Table 7: Inter institutional collaboration

S.N.	Year	Number of collaborated papers					
		Total joint authors		Intra institution		Inter institution	
		IJODLS	IJLIS	IJODLS	IJLIS	IJODLS	IJLIS
1	2011	12	11	3 (25 %)	0(0%)	9(75%)	11(100%)
2	2012	24	15	4 (16.67%)	4(26.67%)	20(83.33%)	11(73.33%)
3	2013	19	35	8(42.11%)	11(31.43%)	11(57.89%)	24(68.57%)
4	2014	32	35	12(37.50%)	16(45.71%)	20(62.50%)	19(54.29%)
Total		87	96	27(31.03%)	31(32.29%)	60(68.97%)	65(67.71%)
Mean				6.75	7.75	15	16.25

6. Test of hypothesis:

Hypothesis 1:-

H₀: Inter gender collaboration is higher in IJODLS than IJLIS.

H₁: Inter gender collaboration is lesser in IJODLS than IJLIS.

Mathematically $H_0: M_a > M_b$
 $H_1: M_a \leq M_b$

M_a =mean of inter gender collaboration of IJODLS= 9
(The mean value have been given in table 6)

M_b = mean of inter gender collaboration of IJLIS = 7.5

Here $9 > 7.75$

So, $M_a > M_b$

So, the mean value of inter gender collaboration in IJODLS is more than mean value of IJLIS.

So, hypothesis is accepted.

Hypothesis 2: -

H₀: Inter institution collaboration is higher in IJODLS than IJLIS. (The mean value have been in given table 7)

H₁: Inter institution collaboration is lesser in IJODLS than IJLIS.

Mathematically $H_0: M_c > M_d$

$H_1: M_c \leq M_d$

M_c =mean of inter institution collaboration of IJODLS=15

M_d =mean of inter institution collaboration of IJLIS = 16.25

Here $15 < 16.25$

So, $M_c < M_d$

So the mean value of inter institutional collaboration of IJLIS is more than IJODLS.

So, hypothesis is rejected.

8. Conclusion:

It is understood that collaboration improves the quality of the work. So is true in case of research. Collaborative research articles may often have better qualitative work especially in sciences .In library & information science this trend is comparatively new. Now a days more collaborative papers are published in the LIS also.

The paper has mainly stressed on inter gender collaboration which is new feature in the era of more free society breaking gender differences .More & more women are adopting LIS profession .So more research articles are also being published with inter gender collaboration .This study confirms the practice since we see good percentages of inter gender collaborated papers .In future there may be higher number of women authors & more inter gender collaboration may be seen in research papers .Inter institutional collaboration also prevail in many articles .In this era of internet the distance are no more hindrances .The inter gender & inter institution collaboration in LIS is healthy trends .Similar studies can be made in other journals also.

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