

AUTHORSHIP AND COLLABORATION PATTERN IN THE FIELD OF COMMERCE: A STUDY OF DELHI SCHOOL OF ECONOMICS, UNIVERSITY OF DELHI

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ABSTRACT

The present investigation examined the doctor of philosophy theses in the discipline of commerce used by research scholars. 39.38% of citations are contributed by single authors. The rest of the citations are contributed by multiple authors. Variations can be seen in the degree of collaboration. No consistent trend of increased or decreased collaboration in commerce has been observed over time.

Keywords: Authorship Pattern; Citation Analysis; Collaboration Research; Commerce Research; Doctoral Theses; and University of Delhi etc.

1. INTRODUCTION

Different characteristics of authorship patterns and related parameters are studied by the metrics approach of library and information science. More competitive and good-quality results in research work can be generated by collaborative research. The interdisciplinary nature of subjects has attracted experts from different disciplines, resulting in collaborative research within a limited time. (Debnath 2021) Authorship pattern and research in collaborative pattern can be studied by the area of bibliometric studies in library and information science. Collaborative research has been featured of recent time. (Tunga 2014)

2. SCOPE, OBJECTIVES AND PURPOSE OF THE STUDY

The scope of this investigation is to explore doctor of philosophy theses in the discipline of commerce awarded by the Delhi School of Economics (DSE), University of Delhi, from 2007 to 2016. The purpose of this investigation is to identify trends in authorship and collaboration patterns among doctoral research scholars of the Delhi School of Economics in the field of commerce. To find out the year-wise distribution of authorship patterns in commerce.

3. LIMITATIONS AND RESEARCH METHODOLOGY OF THE STUDY

The investigation explored doctor of philosophy theses in the discipline of commerce from 2007 to 2016. The investigation only examined journal citations to identify trends in authorship and collaboration patterns in the above field. The data of authors to identify patterns was collected from journal citations of doctoral of philosophy theses in the discipline of commerce. The data was examined using the MS Excel program.

4. REVIEW STUDIES

Pandey and Sahoo (2020) explored authorship patterns and collaboration in research in Semantic Digital Libraries. The downloaded data from the Scopus database for interpretation and analysis. They explained in detail about information retrieval, metadata ontology, the semantic web, and digital libraries. PU Manju and S Raja (2019) investigated trends in authorship patterns in rainwater harvesting during 2008-2017. They analyzed the downloaded data from Web of Science. They also investigated that the "Average Productivity Per Author" (APPA) was 0.28, and the "Average Author Per Publication" (AAPP) was 3.61. Verma et al. (2019) studied in detail and examined the authorship and collaboration patterns of the Researchers World: Journal of Arts, Science, and Commerce (RW-JASC) from 2010 to 2017. They also calculated Relative Growth Rate (RGR) and Doubling Time. Sahu (2018) studied the author's productivity and degree of collaboration (DC) in the Journal of Knowledge and Communication Management from 2011 to 2017. He downloaded and collected data from the website of Indian Journals (www.indianjournals.com).

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He also investigated and identified the maximum number of research articles published in 2015 and 2017. Singh (2017) analyzed the Scopus database to investigate authorship and collaborative research in biotechnology. He interpreted the data using metrics methods such as the Activity Index, Authorship Pattern, and Collaboration Coefficient. He identified that multi-authorship papers increased throughout the last 16 years. C. Velmurugan and D. N. Radhakrishnan (2015) examined the growth and trends of the collaborative research pattern of the Journal of Intellectual Property Rights (JIPR) from 2007 to 2014. The degree of collaboration in this publication was found to be 0.36. They investigated year-by-year author productivity, growth, authorship patterns, issue-by-issue and volume authorship, multi- and single-authored papers, page distribution, average citations, geographical and rank-by-rank publication distribution, etc. KT Naheem and KM Shibu (2015) investigated the Journal of Knowledge and Communication Management (JKCM) and calculated authorship patterns and research collaboration during 2011-2014. The average degree of author collaboration (C) in the source publication was 0.52, indicating that collaborative research in Library and Information Science (LIS) is becoming more common. According to Arya (2012), authorship patterns and collaborative research trends in veterinary medicine have been analyzed using data from the Indian Journal of Veterinary Medicine published between 1999 and 2007. He found that articles with more than one author outnumbered those with just one author. According to his research, veterinary medicine has an average author count of 2.92-4.08, with a degree of collaboration among authors of 0.96. He liked the notion that scientific study was done in a team effort. S M Esmail and S Jothi (2011) explored in detail authorship and collaboration trends of the Journal of the Extension System during 2000 to 2009. They found that the multi-authors outnumber single authors. In agricultural extension research, the authors observed a high degree of collaboration.

Table 4.1: Year-Wise Authorship-Pattern

S.N.	Years	Authors															Total
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
01	2014	02	02	04	01	-	-	-	-	-	-	-	-	-	-	-	09
02	2013	10	09	08	03	-	-	-	-	-	-	-	-	-	-	-	30
03	2012	16	29	13	06	02	-	-	-	-	-	-	-	-	-	-	66
04	2011	29	36	23	12	02	01	-	-	-	-	-	-	-	-	-	103
05	2010	34	51	44	13	04	01	-	-	-	-	-	-	-	-	-	147
06	2009	40	72	51	09	-	-	-	-	-	-	-	-	-	-	-	172
07	2008	44	82	55	08	02	-	-	-	-	01	-	-	-	-	-	192
08	2007	72	82	59	08	03	01	01	-	-	-	-	-	-	-	-	226
09	2006	86	95	45	09	-	01	-	01	-	-	-	-	-	-	-	237
10	2005	97	84	70	10	01	03	-	-	-	-	01	-	-	-	-	266
11	2004	89	128	71	13	-	-	-	-	-	-	-	-	-	-	-	301
12	2003	95	97	61	12	01	01	-	-	-	-	-	-	-	-	-	267
13	2002	124	110	49	21	04	01	01	-	-	-	-	-	-	-	-	310
14	2001	103	104	59	21	04	-	-	-	-	-	-	-	-	-	-	291
15	2000	85	127	69	11	-	-	01	-	-	-	-	-	-	-	-	293
16	1999	101	98	42	10	01	02	-	01	-	-	-	-	-	-	-	255
17	1998	90	104	53	11	01	-	-	-	-	-	-	-	-	-	-	259
18	1997	102	85	42	10	-	01	01	-	01	-	-	-	-	-	-	242
19	1996	91	99	42	03	02	-	-	-	-	-	-	-	-	-	-	237
20	1995	71	89	26	02	02	-	-	-	-	-	-	-	-	-	-	190
21	1994	68	85	32	07	-	01	-	-	-	-	-	-	-	-	-	193
22	1993	75	75	24	04	01	-	-	-	-	-	-	-	-	-	-	179
23	1992	52	78	27	03	-	-	-	-	-	-	-	-	-	-	-	160
24	1991	74	71	20	03	-	01	-	-	-	-	-	-	-	-	-	169
25	1990	70	86	17	02	02	-	-	-	-	-	-	-	-	-	-	177

26	1989	69	54	17	02	01	-	-	-	-	-	-	-	-	-	143
27	1988	65	66	22	-	01	-	-	-	-	-	-	-	-	-	154
28	1987	45	45	18	02	-	-	-	-	-	-	-	-	-	-	110
29	1986	50	29	04	01	02	-	-	-	-	-	-	-	-	01	87
30	1985	24	44	10	05	01	-	-	-	-	-	-	-	-	-	84
31	1984	44	37	07	01	-	-	-	-	-	-	-	-	-	-	89
32	1983	38	58	03	01	-	-	-	-	-	-	-	-	-	-	100
33	1982	44	31	05	-	-	-	01	-	02	-	-	-	-	-	83
34	1981	29	19	02	01	-	-	-	-	-	-	-	-	-	-	51
35	1980	45	23	02	01	-	-	-	-	-	-	-	-	-	-	71
36	1979	30	22	07	-	-	-	-	-	-	-	-	-	-	-	59
37	1978	34	27	02	-	-	-	-	-	-	-	-	-	-	-	63
38	1977	44	18	02	03	-	-	-	-	-	-	-	-	-	-	67
39	1976	29	37	06	-	-	-	-	-	-	-	-	-	-	-	72
40	1975	24	21	09	02	-	-	-	-	-	-	-	-	-	-	56
41	1974	17	13	04	01	-	-	-	-	-	-	-	-	-	-	35
42	1973	25	07	01	01	-	-	-	-	-	-	-	-	-	-	34
43	1972	28	11	03	-	-	-	-	-	-	-	-	-	-	-	42
44	1971	19	08	01	-	-	-	-	-	-	-	-	-	-	-	28
45	1970	31	07	01	-	-	-	-	-	-	-	-	-	-	-	39
46	1969	20	08	01	01	01	-	-	-	-	-	-	-	-	-	31
47	1968	08	14	01	-	-	-	-	-	-	-	-	-	-	-	23
48	1967	15	06	02	-	-	-	-	-	-	-	-	-	-	-	23
49	1966	18	09	02	-	-	-	-	-	-	-	-	-	-	-	29
50	1965	17	06	-	-	-	-	-	-	-	-	-	-	-	-	23
51	1964	08	01	01	-	-	-	-	-	-	-	-	-	-	-	10
52	1963	12	05	01	-	-	-	-	-	-	-	-	-	-	-	18
53	1962	05	01	-	-	-	-	-	-	-	-	-	-	-	-	06
54	1961	04	03	-	-	-	-	-	-	-	-	-	-	-	-	07
55	1960	09	-	-	-	-	-	-	-	-	-	-	-	-	-	09
56	1959	06	02	-	-	-	-	-	-	-	-	-	-	-	-	08
57	1958	05	05	-	-	-	-	-	-	-	-	-	-	-	-	10
58	1957	03	01	-	-	-	-	-	-	-	-	-	-	-	-	04
59	1956	11	02	-	-	-	-	-	-	-	-	-	-	-	-	13
60	1955	04	02	-	-	-	-	-	-	-	-	-	-	-	-	06
61	1954	04	01	-	-	-	-	-	-	-	-	-	-	-	-	05
62	1953	02	01	-	-	-	-	-	-	-	-	-	-	-	-	03
63	1952	07	-	-	-	-	-	-	-	-	-	-	-	-	-	07
64	1951	08	05	-	-	-	-	-	-	-	-	-	-	-	-	13
65	1950	03	-	-	-	-	-	-	-	-	-	-	-	-	-	03
66	1949	-	01	-	-	-	-	-	-	-	-	-	-	-	-	01
67	1948	-	01	-	-	-	-	-	-	-	-	-	-	-	-	01
68	1947	01	-	-	-	-	-	-	-	-	-	-	-	-	-	01
69	1945	02	-	-	-	-	-	-	-	-	-	-	-	-	-	02
70	1944	01	-	-	-	-	-	-	-	-	-	-	-	-	-	01
71	1943	03	-	-	-	-	-	-	-	-	-	-	-	-	-	03
72	1941	01	-	-	-	-	-	-	-	-	-	-	-	-	-	01
73	1940	01	-	-	-	-	-	-	-	-	-	-	-	-	-	01
74	1939	01	-	01	-	-	-	-	-	-	-	-	-	-	-	02

75	1938	-	-	01	-	-	-	-	-	-	-	-	-	-	-	01
76	1937	04	01	-	-	-	-	-	-	-	-	-	-	-	-	05
77	1935	01	-	-	-	-	-	-	-	-	-	-	-	-	-	01
78	1932	-	01	-	-	-	-	-	-	-	-	-	-	-	-	01
79	1931	01	-	-	-	-	-	-	-	-	-	-	-	-	-	01
80	1927	01	-	-	-	-	-	-	-	-	-	-	-	-	-	01
81	1923	01	-	-	-	-	-	-	-	-	-	-	-	-	-	01
82	1921	01	-	-	-	-	-	-	-	-	-	-	-	-	-	01
83	1920	01	-	-	-	-	-	-	-	-	-	-	-	-	-	01
84	1917	01	-	-	-	-	-	-	-	-	-	-	-	-	-	01
85	1910	02	-	-	-	-	-	-	-	-	-	-	-	-	-	02
86	Not Identified	-	-	-	-	-	-	-	-	-	-	-	-	-	-	01
	Total	2646	2631	1142	234	38	14	05	02	03	01	01	-	-	-	6719

Source: Author's Own Work

Year- Wise Citation-Pattern in Commerce

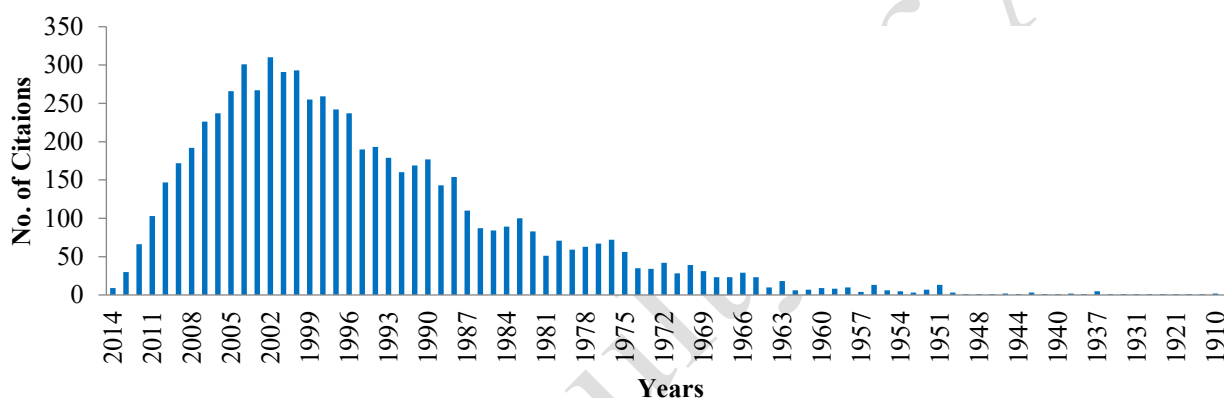


Fig. 4.1: Year- Wise Citation -Pattern

It is indicated from Table 4.1 and Fig. 4.1 that single-authored citations are cited highest with 2646 (39.38%) citations, while two-authored citations are second highest with 2631 (39.16%) citations, followed by three-authored citations accounting for 1142 (17.00%) citations, followed by more than three-authored citations accounting for 299 (4.45%) citations. It is concluded from the analysis that multi-authored papers are cited in greater numbers as compared to single-authored papers.

Table 4.2: Citations Distribution and Degree of Collaboration

S. N.	Years	Authors	Citations	Average No. of Authors Per Citation	No. of Single Authored Papers [NS]	No. of Multi Authored Papers [NM]	Degree of Collaboration
01	2014	22	09	2.44	02	07	0.78
02	2013	64	30	2.13	10	20	0.67
03	2012	147	66	2.23	16	50	0.76
04	2011	234	103	2.27	29	74	0.72
05	2010	346	147	2.35	34	113	0.77
06	2009	373	172	2.17	40	132	0.77
07	2008	425	192	2.21	44	148	0.77
08	2007	473	226	2.09	72	154	0.68
09	2006	461	237	1.95	86	151	0.64
10	2005	549	266	2.06	97	169	0.64
11	2004	610	301	2.03	89	212	0.70
12	2003	531	267	1.99	95	172	0.64

13	2002	608	310	1.96	124	186	0.60
14	2001	592	291	2.03	103	188	0.65
15	2000	597	293	2.04	85	208	0.71
16	1999	488	255	1.91	101	154	0.60
17	1998	506	259	1.95	90	169	0.65
18	1997	460	242	1.90	102	140	0.58
19	1996	437	237	1.84	91	146	0.62
20	1995	345	190	1.82	71	119	0.63
21	1994	368	193	1.91	68	125	0.65
22	1993	318	179	1.78	75	104	0.58
23	1992	301	160	1.88	52	108	0.68
24	1991	294	169	1.74	74	95	0.56
25	1990	311	177	1.76	70	107	0.60
26	1989	241	143	1.69	69	74	0.52
27	1988	268	154	1.74	65	89	0.58
28	1987	197	110	1.79	45	65	0.59
29	1986	149	87	1.71	50	37	0.43
30	1985	167	84	1.99	24	60	0.71
31	1984	143	89	1.61	44	45	0.51
32	1983	167	100	1.67	38	62	0.62
33	1982	146	83	1.76	44	39	0.47
34	1981	77	51	1.51	29	22	0.43
35	1980	101	71	1.42	45	26	0.37
36	1979	95	59	1.61	30	29	0.49
37	1978	94	63	1.49	34	29	0.46
38	1977	98	67	1.46	44	23	0.34
39	1976	121	72	1.68	29	43	0.60
40	1975	101	56	1.80	24	32	0.57
41	1974	59	35	1.69	17	18	0.51
42	1973	46	34	1.35	25	09	0.26
43	1972	59	42	1.40	28	14	0.33
44	1971	38	28	1.36	19	09	0.32
45	1970	48	39	1.23	31	08	0.21
46	1969	48	31	1.55	20	11	0.35
47	1968	39	23	1.70	08	15	0.65
48	1967	33	23	1.43	15	08	0.35
49	1966	42	29	1.45	18	11	0.38
50	1965	29	23	1.26	17	06	0.26
51	1964	13	10	1.30	08	02	0.20
52	1963	25	18	1.39	12	06	0.33
53	1962	07	06	1.17	05	01	0.17
54	1961	10	07	1.43	04	03	0.43
55	1960	09	09	1.00	09	-	0.00
56	1959	10	08	1.25	06	02	0.25
57	1958	15	10	1.50	05	05	0.50

58	1957	05	04	1.25	03	01	0.25
59	1956	15	13	1.15	11	02	0.15
60	1955	08	06	1.33	04	02	0.33
61	1954	06	05	1.20	04	01	0.20
62	1953	04	03	1.33	02	01	0.33
63	1952	07	07	1.00	07	-	0.00
64	1951	18	13	1.38	08	05	0.38
65	1950	03	03	1.00	03	-	0.00
66	1949	02	01	2.00	-	01	1.00
67	1948	02	01	2.00	-	01	1.00
68	1947	01	01	1.00	01	-	0.00
69	1945	02	02	1.00	02	-	0.00
70	1944	01	01	1.00	01	-	0.00
71	1943	03	03	1.00	03	-	0.00
72	1941	01	01	1.00	01	-	0.00
73	1940	01	01	1.00	01	-	0.00
74	1939	04	02	2.00	01	01	0.50
75	1938	03	01	3.00	-	01	1.00
76	1937	06	05	1.20	04	01	0.20
77	1935	01	01	1.00	01	-	0.00
78	1932	02	01	2.00	-	01	1.00
79	1931	01	01	1.00	01	-	0.00
80	1927	01	01	1.00	01	-	0.00
81	1923	01	01	1.00	01	-	0.00
82	1921	01	01	1.00	01	-	0.00
83	1920	01	01	1.00	01	-	0.00
84	1917	01	01	1.00	01	-	0.00
85	1910	02	02	1.00	02	-	0.00
86	Not Identified		01	-	-	-	-
	Total	12658	6719	-	2646	4072	-

Source: Author's Own Work

Citations Distribution and Degree of Collaboration in Commerce

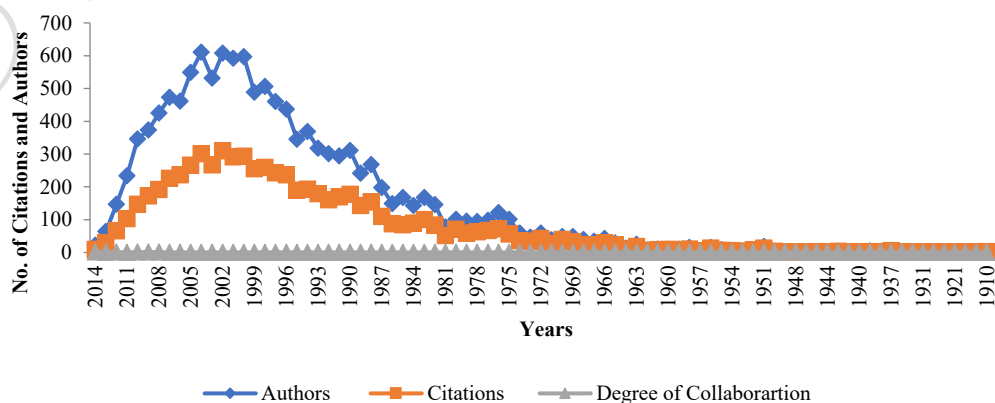


Fig. 4.2: Citations Distribution and Degree of Collaboration in Commerce

Table 4.2 and Fig. 4.2 show the average number of authors per citation and the degree of collaboration in Commerce calculated annually from 2014 to 1910. Additionally, it is shown that the average number of authors per citation ranges from 2.44 to 1.00 over the different periods. The degree of collaboration varies from 0.78 to 1.00. Fluctuations can be observed in the average number of authors per citation and the degree of collaboration over various periods. In other words, no consistent trend of increased or decreased collaboration in Commerce has been observed over time.

5. FINDINGS

It has been found that single-authored citations are highest, while two-authored citations are second highest, followed by three-authored citations, followed by more than three-authored citations. It has been concluded from the analysis that multi-authored papers are outnumbered compared to single-authored papers. The average number of authors per citation and the degree of collaboration in commerce were calculated annually from 2014 to 1910. Variations can be seen in the average number of authors per citation and degree of collaboration. Fluctuations can be seen in the value of the average number of authors per citation and the value of the degree of collaboration over various periods. In other words, no consistent trend of increased or decreased collaboration in Commerce has been observed over time.

6. CONCLUSION

The present investigation identified the trends of authorship and collaboration patterns in the field of commerce. The results of this investigation will help librarians and policymakers in the collection development and management in libraries and information centres. The multidisciplinary nature of fields and globalization of research stimulated team research and collaborative patterns.

REFERENCES

- Arya, C. (2012). Authorship Trends and Collaborative Research in the Field of Veterinary Medicine. *International Journal of Information Dissemination & Technology*, 2(1), 50-53.
- Debnath, R. (2021). Collaboration and Authorship Pattern of Research Outputs Published by Central Institute of Plastics Engineering & Technology from 2005 to 2020: A Scientometric Analysis. *Library Philosophy & Practice*.
- Esmail, S. M., & Jothi, S. (2011). Authorship Trend and Collaborative Research in Agricultural Extension. *Pearl: A Journal of Library and Information Science*, 5(1), 42-46.
- Manju, P. U., & Raja, S. (2019). Authorship Pattern of Rain Water Harvesting Research Management Publications. *Library Progress (International)*, 39(1), 31-37.
- Naheem, K. T., & Shibu, K. M. (2015). Authorship Patterns and Collaborative Research in the 'Journal of Knowledge and Communication Management', 2011–2014. *Journal of Knowledge & Communication Management*, 5(2), 203-211.
- Pandey, S., & Sahoo, S. (2020). Research Collaboration and Authorship Pattern in the Field of Semantic Digital Libraries. *DESIDOC Journal of Library & Information Technology*, 40(6), 375-381.
- Tunga, S. K. (2014). Authorship Pattern and Degree of Collaboration in Journal Articles: A Citation Study of Doctoral Dissertations 1991–2010. *Information Studies*, 20(2), 85-96.
- Velmurugan, C., & Radhakrishnan, D. N. (2015). Collaborative Research and Authorship Pattern of Intellectual Property Rights. *Journal of Information Management*, 2(2), 77-87.
- Verma, M. K., Shukla, R., & Yadav, S. K. (2019). Authorship Pattern and Collaboration Coefficient of the Researchers World: Journal of Arts, Science and Commerce (RW-JASC) During 2010-2017. *International Journal of Information Dissemination and Technology*, 9(2), 61-65.