

Research Output on Paediatric Surgery in Global: A Scientometric Study

R. Senthilkumar¹ and S Abirami²

¹Librarian (SG) & Head (Research), ¹Department of Library and Information Science,
Kongunadu Arts & Science College (Autonomous), Coimbatore, Tamil Nadu, India

²Research Scholar, Department of Library and Information Science, Bharathiar University, Coimbatore, Tamil Nadu, India
E-Mail: tsanoolagam@gmail.com

Abstract - This research paper deals with an analysis on Bibliometric study from the results of the International Journal of Paediatric Surgery. The entire data were retrieved from the database called Web Of Science (WOS) during the period 1989-2016. During this period of 28 years the Paediatric Surgery Journal (PSJ) has published 5,528 numbers of research papers. Based on this, the year 1998 has got the highest score of 273 research records. According to the ranking of author Puri P has produced his highest contribution of 243 research records which is about 4.4% of the total contribution.

Keywords: Bibliometric, Scientometrics, Thomson-Reuters, Database

I. INTRODUCTION

Bibliometric is a research method used in library and information science. The term "Bibliometric" was coined by Pritchard in 1969. This method is used to trace relationship amongst academic journal citations. Citation analysis which involves examining an item's referring documents, is used in searching for materials. Nowadays it is used in quantitative research assessment exercise of academic output which is starting to threaten practice based research. Data from citation indexes can be analysed to determine the popularity and impact of specific articles, authors, and publications. Information scientists also use citation analysis to quantitatively assess the core journal titles and watershed publications in particular disciplines; interrelationships between authors from different institutions and schools of thought and related data about the sociology of academia.

The major purpose of the journal is to promote postgraduate training and further education in the surgery of infants and children. This journal contains articles about clinical and experimental surgery, as well as related fields. Paediatric surgery provides an up-to-date and comprehensive analysis of current practice in the field. It is divided into three volumes, with a total of seven sections that focus on general principles, newborn surgery, general paediatric surgery, tumour surgery, trauma, transplantation and paediatric urology surgery.

II. REVIEW OF LITERATURE

Kurpaa.K¹, MD, PhD, "Psychological Manifestations of Celiac disease autoimmunity in young children". This is

study about "Environmental Determinants of Diabetes in the Young". During the study period 8676 children were to identify causes of type I diabetes and celiac disease. Children at the age of two years were tested for Transglutaminase auto antibodies (TGA). Psychological performance starts at the age of 4.5 years, an Achenbach child identified and assessed by its activities. Most mothers are unaware-CDA mothers even though their statement based on "child anxiety, depression, withdrawn behaviour, aggressive behaviour and sleep problems", and the status of aware CDA mothers (all $P_s \leq .04$). Paediatrics Child's CDA problem is aware of parents knowledge is associated with some reports of psychological symptoms. (Volume 139, number 3, March 2017: e 20162848.)

Moira Szilagy², "Cumulative Adverse Childhood Experiences (ACE)", and parents those experienced with various ACE have bigger challenges in adapting their own children's stress management and assist them to get used to life stressors. Based on the analysis of pediatric follow-up in inquiring about parents the data was used from 85th periodic survey of AAP. This study concluded with the results of positive parenting on a kid's life-course trajectory with 96%, parenting skills got 79%, social emotional risk have 81% and pediatricians 61%. (Volume 16, number 7, May 2016.)

Andrew J Davidson³ MD, neuro developmental outcome occurs at the age of 2 years, after general anaesthesia and awake-regional anaesthesia in infancy. This analysis based on the cohort studies explains that the young children revealed to anaesthesia may get high risk of neurodevelopment disorders. This is a major outcome in neurodevelopment disorder at the age of 5 years, and also at the age of 2 years this is noted as secondary outcome. The analysis concluded with the composite cognitive score of Bayley Scales of Infant and Toddler Development. The general anaesthesia affects the brain development-by preclinical data. (Vol. 387, No.10015, 16 January 2016. P.239-250.)

Sarah McCue Horwitz, ⁴ to inspect the "Prevalence/Predictors" of mental health (MH) troubles and services used in 12 to 36 months old children who had been studied for ill treatment. The source data retrieved from NSCAW II (National Survey of Child and Adolescent Well-

Being). A detailed study held about under the age of 17.5 was submitted to U.S. child welfare agencies. The results of Sociodemographic, Social services, Developmental and health data sources were gathered from children and custodian. The outcome of BITSEA (Brief Infant Toddler Social and Emotional Assessment) gives its range for 12-18 months old and the CBCL (Child Behaviour Checklist) had given its score for 19-36 months old. (Vol. 51, Issue 6, pp. 572-581, June 2012.)

Christian Schloegl⁵ “Impact and relevance of LIS journals: A scientometric analysis of international and German-language LIS journals – citation analysis versus reader survey”. The objective of the scientometric study gives the scrutinized results of international and regional periodicals in the field of Library and Information Science (LIS). This article explained by the way of citation analysis and a reader survey. The reputed indicators like citation analysis, citing half-life, references per article, and the impact factor. The source data downloaded from ISI’s Social Sciences Citation Index (SSCI) and Journal Citation Reports (JCR). In this study the experimental based citation analysis contains around 90,000 citations from 6203 articles published between the years 1997-2000. The questionnaire used for this analysis is prepared by the information professionals from Germany, Austria and Switzerland. (“Practitioners vs. scientists, librarians vs. documentalists vs. LIS scholars, public sector vs. information industry vs. other private company employees”).

Bluma C. Peritz⁶, graduate school of library and archive studies, Hebrew University has demonstrated about bibliometrics under the title “The sources used by bibliometrics – Scientometrics as reflected in reference”, the intention of this observation to extend to which the field of “bibliometrics and scientometrics makes the use of sources outside the field”. This study brought out the results of scrutinizing the references of articles presented between the years 1990-2000 in scientometrics and the outcome shows in 1990 and 2000 as 47.3% and 56.9% respectively. (Published in June 2002, vol.54, issue-2 p.29-284.)

III. OBJECTIVE OF THE STUDY

The present study has undertaken with the objective of analysing in the following aspects:

1. To analyse the results of specific journal’s publications published during 1989 to 2016
2. To find out the highest contribution of the author
3. To find out the institution wise collaboration
4. To find out the document wise publications.

TABLE I YEAR-WISE GROWTH OF RESEARCH OUTPUT

S.No.	Year	Records	Percentage	TLCS*	TGCS**
1	1989	98	1.8	45	365
2	1990	132	2.4	73	630
3	1991	130	2.4	72	803
4	1992	146	2.6	110	736
5	1993	170	3.1	81	603
6	1994	217	3.9	103	566
7	1995	206	3.7	104	690
8	1996	217	3.9	92	548
9	1997	159	2.9	133	1614
10	1998	273	4.9	221	2732
11	1999	191	3.5	193	1747
12	2000	176	3.2	110	1673
13	2001	195	3.5	154	1765
14	2002	201	3.6	158	1998
15	2003	199	3.6	152	1945
16	2004	242	4.4	159	2264
17	2005	263	4.8	156	2121
18	2006	234	4.2	199	2007
19	2007	207	3.7	154	1884
20	2008	259	4.7	195	2105
21	2009	190	3.4	121	1538
22	2010	216	3.9	127	1579
23	2011	238	4.3	98	1254
24	2012	218	3.9	77	884
25	2013	209	3.8	73	681
26	2014	204	3.7	44	364
27	2015	181	3.3	22	157
28	2016	157	2.9	3	18
Total		5528	100	3229	35271

TLCS* - Total Local Citation Score, TGCS** – Total Global Citation Score

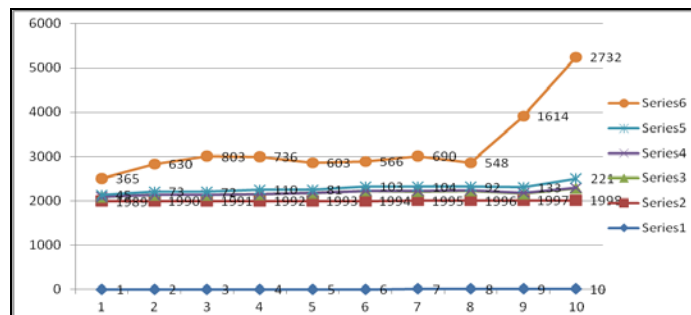


Fig. 1 Year-wise growth of research output

TABLE II PRODUCTIVE AUTHORSHIP PATTERN

S.No.	Author	Records	Percentage	TLCS	TLCS/t	TLCSx	TGCS	TGCS/t	TLCR
1	Puri P	243	4.4	336	37.61	120	1809	189.61	395
2	Yamatoka A	120	2.2	113	15.74	55	630	70.4	117
3	Lane GJ	100	1.8	100	13.26	47	521	58.02	95
4	Coran AG	76	1.4	50	4.74	17	879	78.08	43
5	Hutson JM	68	1.2	96	6.35	59	854	61.16	49
6	Okazaki T	64	1.2	74	9.9	31	348	40.54	76
7	Miyano T	55	1	71	5.49	43	495	38.23	27
8	Taguchi T	51	0.9	36	5.28	15	228	32.47	52
9	Kobayashi H	50	0.9	74	6.1	39	438	35.96	32
10	Beasley SW	49	0.9	71	3.77	62	443	23.22	29
11	Gupta DK	49	0.9	35	2.8	24	255	23.17	46
12	Doi T	45	0.8	53	9.63	10	143	24.88	81
13	Koga H	43	0.8	31	7.12	11	129	21.4	67
14	Mitra DK	39	0.7	40	2.18	24	262	14.98	17
15	Tovar JA	38	0.7	54	3.67	22	326	24.98	84
16	Scharli AF	37	0.7	27	1.15	26	229	10.68	3
17	Sen S	37	0.7	13	1.21	10	114	9.5	13
18	Sukhotnik I	37	0.7	20	2.36	4	353	37.05	23
19	Miyano G	36	0.7	25	6.29	8	82	17.58	48
20	Pierro A	36	0.7	21	2.72	15	228	32.93	34
21	Agarwala S	35	0.6	31	2	17	249	17.33	25
22	Millar AJW	35	0.6	33	1.77	21	243	18.42	31
23	Hadley GP	34	0.6	19	1.57	10	237	19.9	26
24	Tam PKH	32	0.6	29	4.22	27	295	29.99	22
25	Bhatnagar V	31	0.6	21	1.25	15	202	13.09	11
26	Friedmacher F	31	0.6	33	8.68	10	116	29.3	126
27	Gangopadhyay AN	31	0.6	11	0.61	9	88	6.58	13
28	Myers NA	31	0.6	39	1.9	33	185	8.94	6
29	Fukuzawa M	30	0.5	19	2.17	6	260	31.26	23
30	Meuli M	30	0.5	33	4.69	1	259	37.82	33
31	Okawada M	30	0.5	31	5.79	8	71	12.76	47
32	Spitz L	30	0.5	33	1.69	30	218	11.62	5
33	Chacko J	29	0.5	10	1.01	8	119	8.03	7
34	Lakhoo K	29	0.5	27	2.74	19	206	23.35	30
35	Moore SW	29	0.5	60	5.07	37	411	35.9	62
36	Rode H	29	0.5	40	1.96	24	267	15.7	15
37	Takahashi T	29	0.5	11	2.53	3	83	14.83	35
38	Usui N	29	0.5	25	1.79	5	209	19.6	28
39	Hasegawa T	28	0.5	16	1.35	9	213	17.1	19
40	Teitelbaum DH	28	0.5	21	2.8	10	347	36.17	21
41	Dewan PA	27	0.5	10	0.47	3	118	5.86	10
42	Kubota A	27	0.5	24	2.19	16	229	20.05	10
43	Bianchi A	26	0.5	37	2.01	33	269	14.56	10

S.No.	Author	Records	Percentage	TLCS	TLCS/t	TLCSx	TGCS	TGCS/t	TLCR
44	Tanaka Y	26	0.5	13	1.65	6	102	14.28	15
45	Oue T	25	0.5	32	2.67	16	293	31.05	14
46	Suita S	25	0.5	10	0.69	8	94	6.44	11
47	Yagi M	25	0.5	19	1.65	13	162	13.75	14
48	Hollwarth ME	24	0.4	18	1.66	15	236	21.09	13
49	Shima H	24	0.4	29	1.99	17	182	13.36	18
50	Srinivas M	24	0.4	29	1.83	15	172	10.47	21
TOTAL		2136							

TLCS* - Total Local Citation Score, TGCS** – Total Global Citation Score, TLCS/t – Total Local Citation Score per year TLCSx – Total Local Citation Score Excluding self citations TGCS – Total Global Citation Score, TGCS/t – Total Global Citation Score per year, TLCR – Total Local Cited References.

Through the table I and the above Fig. 1 the Paediatric Surgery International Journal’s yearwise growth output has given clearly. By this study period the growth rate between the period 1989 and 2016, the Paediatrics Surgery International Journal has its rises and falls in providing the

research records for each and every year. In 1998 the rate of publication output was very high compared to other years. Secondly the year 1998 the total research record is 273 with 4.9 percentages, its Local Citation Score is 221 and the Global Citation Score is 2732.

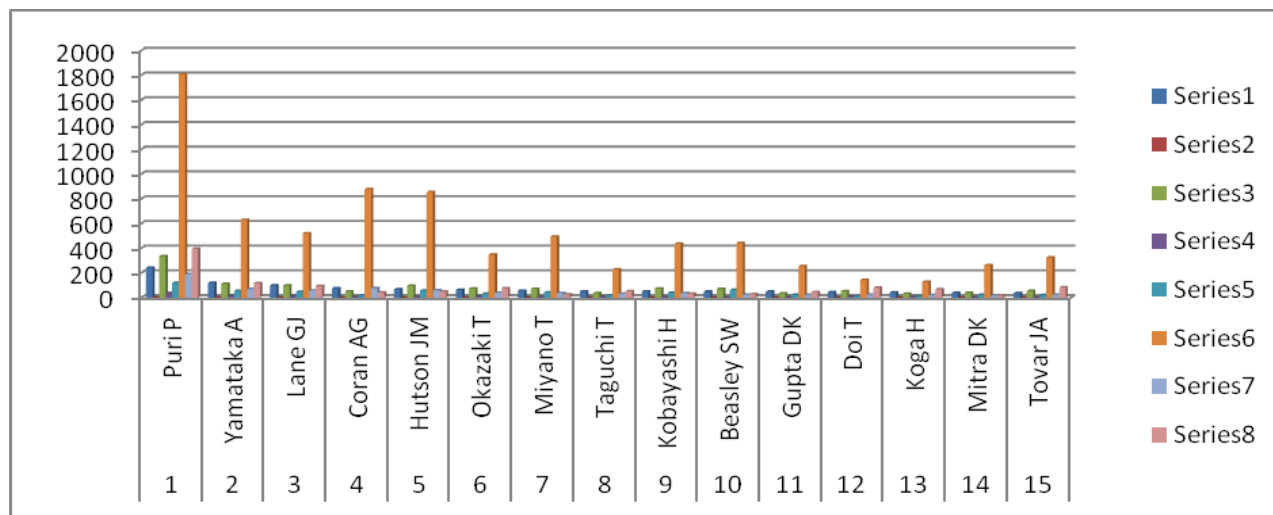


Fig. 2 Productive Authorship Pattern

Table II and Fig. 2 shows that the results of 50 authors’ contribution during the study period 1985 – 2016 one Mr. Puri. P has contributed the maximum research records of 243 (4.4%) the local citation score is 336 and the global citation score is 1809, followed by Mr. Yamataka. A total of 120 records (2.2%) the local citation score is 113 and the global citation score is 630, thirdly by Mr.Lane.GJ of 100 records (1.8%) the local citation score is 100 and the global citation score is 521.

From the belowtable III, “Paediatric Surgery International” journal has the collaboration with many institutions, in that Our Lady’s Hospital Sick Children, Children’s Research Centre produced the highest score of 122 research records

which has 2.2% of the total publication and the second highest Juntendo University, School of Medicine has the score of 109 research records with 2% out of total publications.

The above table IV expresses that the communication of this specified journal’s research findings took the method to show by the way of articles presented in this journal. The highest number of research records are 4518 (81.7%) with the total of 5528 citations, the place of second highest is taken by review papers with 271 (4.9%) citations, proceeding paper with 228 citations and 4.1% of total contributions.

TABLE III INSTITUTION WISE COLLABORATION OF RESEARCH PUBLICATIONS

S. No.	Institutions	Records	Percentage	TLCS	TGCS
1	Our Lady's Hospital Sick Children, Children's Research Centre	122	2.2	209	1219
2	Juntendo University, School of Medicine	109	2	108	629
3	Unknown	66	1.2	21	192
4	Our Lady's Children Hospital, National Children Research Centre	61	1.1	44	192
5	Royal Children's Hospital, Dept Gen Surgery	55	1	44	497
6	University Michigan, CS Mott Children's Hospital	50	0.9	32	447
7	All India Institute of Medicine Science, Dept Paediatric Surgery	40	0.7	25	189
8	All India Inst Med Science, Dept Paediatric Surgery	36	0.7	37	284
9	University College Dublin, School Med & Med Science	35	0.6	43	158
10	Royal Children's Hosp, Dept Surgery	31	0.6	31	196
11	University Michigan, School of Medicine	30	0.5	23	493
12	Royal Hosp Sick Children, Dept Paediatric Surgery	28	0.5	17	163
13	Hacettepe University, Faculty of Medicine	26	0.5	22	251
14	Kyushu University, Grad School of Medical Science	24	0.4	16	131
15	Women's & Children's Hospital, Dept Paediatric Surgery	24	0.4	16	185
16	Osaka University, Grad School of Medicine	23	0.4	12	199
17	University Melbourne, Dept Paediatric	23	0.4	18	230
18	Banaras Hindu University, Institute of Medical Science	21	0.4	10	61
19	Children's Hosp, Dept Paediatric Surgery	21	0.4	18	109
20	Christian Medical College & Hospital, Department of Paediatric Surgery	20	0.4	6	49
21	University College Dublin, Conway Institute of Bio molecular & Biomedical Research	20	0.4	21	69
22	University of Helsinki, Children's Hospital	20	0.4	32	189
23	Hospital Universitario La Paz, Department of Paediatric Surgery	18	0.3	7	115
24	Royal Manchester Children's Hospital, Department of Paediatric Surgery	18	0.3	17	110
25	Christchurch Hospital, Department of Paediatric Surgery	17	0.3	32	229
26	Osaka Medical Centre and Department of Paediatric Surgery	17	0.3	10	113
27	Graz University, School of Medicine	16	0.3	13	98
28	Juntendo University, Department of Paediatric General & Urogenital Surgery	16	0.3	10	40
29	Medical University Graz, Department of Paediatric & Adolescent Surgery	16	0.3	7	86
30	Osaka University, School of Medicine	16	0.3	14	173

TABLE IV TYPES OF DOCUMENTS

S. No.	Document Type	Records	Percentage	TLCS	TGCS
1	Article	4518	81.7	2684	29735
2	Review	271	4.9	210	2594
3	Article; Proceedings Paper	228	4.1	243	2275
4	Note	213	3.9	47	292
5	Letter	179	3.2	22	175
6	Editorial Material	98	1.8	21	178
7	Correction	8	0.1	1	3
8	Biographical-Item	6	0.1	1	2
9	Correction, Addition	3	0.1	0	0
10	Item About an Individual	3	0.1	0	0
11	Hardware Review	1	0	0	17
Total		5528	100		

IV. FINDINGS

The study period of (1989-2016) 28 years' results have come out in the form of mapping the researchers' research output. From this derived results the year 1998 is ranked as the top position with 273 research records with 4.9%, 221 TLCS (Total Local Citation Score) along with 2732 TGCS (Total Global Citation Score) were published in this Paediatric Surgery International Journal. The top productive author is Mr. P. Puri, who has provided totally 243 numbers of research records with 4.4%, the total local citation score is 336 and total local citation score per year is 37.61, the total citation score excluding self citation is 120, the total global citation score is 1809 and the total global citation score per year is 189.61, finally the total local cited reference is 395. A majority of the researchers contributed their research output by the way of articles with the highest number of 4518 (81.7%) out of 5528 records.

V. CONCLUSION

This is a statement that packed up with the results of year wise growth, authorship pattern, collaboration of research

publication, types of documents, main keywords are explained, languages used for publication and the name of the countries utilized collaboration. Between the years 1989-1990 the productivity results are rises, the years between 1990 -1991 the productivity results are decreases, and finally the years between 1991-1994 and 1994 – 1997 the productivity results are rises and decreases respectively.

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