

Journal of Cognitive Neuroscience: A bibliometric Analysis

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ABSTRACT

Analysis of 1730 research papers published in the “Journal of Cognitive Neuroscience” during the period 2007-2016 has been carried out. The data was collected from the archives of the IEEE journal available in online form. This paper examines the articles for year wise growth of the articles published, authorship pattern, length of paper etc. The maximum number of papers published in 2007 and minimum in 2012. The highest number of research papers contributed by three authors during the study period. The average pages per paper are 7.3

Keyword: Bibliometrics, Scientometrics, Cognitive Neuroscience, Authorship Pattern

INTRODUCTION

Bibliometrics could be a set of ways wont to study or live texts and data (Wikipedia, 2011). Bibliometric studies are applied in the main to scientific fields and area unit based mostly primarily on various data elements like author, title, subject, citations, etc. associated with bookish publication at intervals a discipline. this kind of study provides helpful indicators of scientific productivity, trends, the stress of analysis in varied sides and researchers' preferences for publication (Jacobs, 2001). Sengupta has outlined bibliometric as organization, classification and quantitative analysis of publication pattern of macro-communication together with their authorships by mathematical and applied math calculations.

The word bibliometrics was first invented by Pritchard in 1969. An initiating example of a bibliometric study was statistical analysis of the literature of comparative anatomy from 1543 to 1860, done by including book and journal titles, and grouping them by countries of origin and periods. According to Hulme (1923) entitled "Statistical Analysis of the History of Science". His investigation was based on the entries in the English International Catalogue of Scientific Literature. Another third study was the work of Gross and Gross reported in 1927. They counted and analyze the citations in articles from the Journal of the American Chemical Society, and produced a list of journals estimates important to chemical education. Zipf's law (1949) relates to the frequency of word occurrence. Zipf derived his law from the empirical law of least effort. He said that there is relationship between the rank of the word and its frequency of textual matter, if the words are arranged in their decreasing order of frequency of occurrence in a long text. This law indicates that, "in a long textual matter if the words are arranged in their decreasing order of frequency then the rank of any given word of the text will be inversely comparative to the frequency of occurrence of the words". Another important work was Bradford's 1934 article on the distribution of literature in lubrication

research. It is an important part of the theoretical foundation of bibliometrics, "Bradford's Law of Scattering".

Journal of Cognitive Neuroscience investigates brain–behavior interaction and promotes lively interchange among the mind sciences. Contributions address both descriptions of function and underlying brain events and reflect the interdisciplinary nature of the field, covering developments in neuroscience, neuropsychology, cognitive psychology, neurobiology, linguistics, computer science, and philosophy. Journal is started from 1989 till to today, it is a monthly journal publishes 12 issues per year. Journal impact factor is 3.108. Journal website is <http://ieeexplore.ieee.org/xpl/aboutJournal.jsp?punumber=6720218>

REVIEW OF LITERATURE

Thanuskodi (2010) discussed the research output performance of social scientists on social science subjects. The analysis cover mainly the number of articles, authorship pattern, subject wise distribution of articles, average number of references per articles, forms of documents cited, year wise distribution of cited journals etc. Yeoh and Kaur (2008) analyses the publication output of Research in Higher Education for subject support in collection development in the light of growing interest in diversified domains of research in higher education. Consequently, analysis of 40 issues of publications revealed a diversified usage pattern of bibliographic reference sources by contributing researchers, with a cumulative total of citations being 8,374. A positive trend in research collaboration of contributing authors, and a steady growth in the use of reference sources, periodicals and web documents in the citations signify the trend of scholarly communication of research works in the electronic age. Similar to other disciplines of research findings, journals and books were the most cited source materials for researchers thrash out.

Santhi and Jeyachitra studied papers published in IEEE Transactions on Control systems Technology from 1998-2007. Study was carried out for each cited reference on following point – Number of authors, type of document, continent of origin of the document etc. The study revealed that one paper contribution constituted 85.4 percent of total output and the authors who have contributed 5-21 paper constitute 0.43% alone. The above study supports the fact that when the number of published paper increases, the number of contributed author decreases

Velmurugan Velmurugan (2013) study aims to explore the publication of papers in Annals of Library and Information Studies. The Scientometric analysis has been conducted with 203 contributions published in the journal for a period of selected six years i.e. 2007 – 2012. It was observed from the study that the highest number of contributions i.e., 43 (21.19%) were published in the year 2010. Most of the contributions are found by double authored i.e., 88 (43.35 %.). The degree of collaboration (i.e.131out of 203) was high in terms of authorship pattern was 0.64.

OBJECTIVES OF THE STUDY

- To find out the year wise distribution of articles in Journal of Cognitive Neuroscience
- To study the authorship pattern.
- To study the length of journal articles.

METHODOLOGY

Journal of Cognitive Neuroscience (JRN) for 10 years period contains 120 issues and 1730 papers published during the year 2007 - 2016 are considered for the study. The data collected has been studied by applying filters on basis of different criterion. Quantitative techniques have been adapted for the study. The journal is analyzed for number of issues and papers published, number of authors, year wise growth in papers for the period of study.

Results and Discussion

Year wise distribution of papers

Table-1 shows the distribution of research articles published in Journal of Cognitive Neuroscience 2007 – 2016. The total of 1730 research articles was published with an average of 173 articles per year. Out of 1730 articles, the highest number of research articles were published in the year 2007 with 212 research articles followed by 200 articles in 2015 ; 199 articles in 2014 ; 182 articles in 2016; 180 articles in 2008 ; 175 articles in 2009 ; 165 articles in 2011; 156 articles in 2013; 141 articles in 2010 ; 120 articles and the lowest number of articles were published in the year 2012 (10 articles per issue). The average number of papers per year is 173 during the study period.

Table-1: Year wise distribution of papers

S.No.	Year	No. of Articles	%
1	2007	212	12.25
2	2008	180	10.40
3	2009	175	10.12
4	2010	141	8.15
5	2011	165	9.54
6	2012	120	6.94
7	2013	156	9.02
8	2014	199	11.50
9	2015	200	11.56
10	2016	182	10.52
Total		1730	100

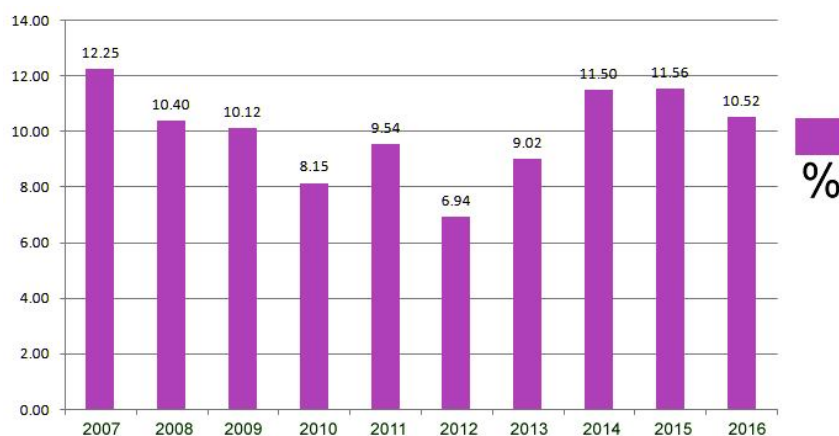


Fig.1 Year wise distribution of papers in Percentage

Year and Issue-wise Distribution of papers

Table-2 indicates the issue no-wise distribution of research articles published in Journal of Cognitive Neuroscience 2007–2016. The total of 1730 research articles was published within the 10 years, highest articles in issue no.5 and 11 in 2007, followed by 24 articles in issue no.11, in 2011; 24 articles in issues no.4 in 2014; 24 articles in issue no.4 in 2015 and 20 articles in issue no.5 in 2016 and remaining very least 7 articles in issue 5 in 2011.

Table-2: Year and Issue-wise Distribution of papers

S.No	Year	No.1	No.2	No.3	No.4	No.5	No.6	No.7	No.8	No.9	No.10	No.11	No.12	Total
1	2007	20	18	14	20	24	14	14	16	18	20	24	10	212
2	2008	11	12	10	16	14	15	24	14	14	16	16	18	180
3	2009	12	15	14	16	18	14	12	14	14	16	18	12	175
4	2010	10	14	16	18	9	18	10	11	9	8	9	9	141
5	2011	12	10	16	14	7	14	14	16	18	10	24	10	165
6	2012	10	9	11	10	11	10	11	9	9	8	12	10	120
7	2013	12	10	16	12	11	14	14	12	18	12	11	14	156
8	2014	18	14	20	24	14	14	16	18	16	12	16	17	199
9	2015	14	18	14	20	24	14	14	16	18	20	18	10	200
10	2016	14	14	16	18	20	14	16	18	16	18	10	8	182
Total		133	134	147	168	152	141	145	144	150	140	158	118	1730

Authorship Pattern

It is observed from the Table-3, out of 1730 papers, the highest number of papers was published by two authors and it accounts for 579 with (33.47%) followed by three authored articles account for 540 with (31.21%); 251 (14.51%) of articles were published by four authors. 202(11.68%) of articles were published by single authors. 118(6.82%) of articles were published by five authors. Only 40(2.31%) of articles were published by more than five authors. But the trend of the author pattern in the journal shows that the team size was three to two.

Table-3: Authorship Pattern

S.No.	Authors	No. of Articles	%
1	Single Author	202	11.68
2	Two Author	579	33.47
3	Three Author	540	31.21
4	Four Author	251	14.51
5	Five Author	118	6.82
6	Six Author	40	2.31
Total		1730	100

Year-wise distribution of Pages

Table 4 shows that 1730 papers published with a total page of 12383 (average 7.3 pages per article) during the year 2007-2016. It is observed that the average length of the articles varied from a minimum of 5.7 pages to a maximum of 7.6 pages. The year 2015 has highest average

pages per paper with 7.6 pages while the year 2014 has the lowest average pages per paper with 5.7

Table-4: Year-wise distribution of Pages

S.No.	Year	No. of Articles	Total Pages	Average pages per Article
1	2007	212	1521	7.2
2	2008	180	1156	6.4
3	2009	175	1205	6.9
4	2010	141	1234	8.8
5	2011	165	1269	7.7
6	2012	120	1051	8.8
7	2013	156	1078	6.9
8	2014	199	1141	5.7
9	2015	200	1518	7.6
10	2016	182	1210	6.6
	Total	1730	12383	

Findings

The analysis revealed the following conclusions.

- The maximum number of papers published in 2007 and minimum in 2012.
- The highest number of research papers contributed by three authors during the study period.
- The average pages per paper are 7.3

Conclusion

The publishing trend totally depends on the productivity of contributors, pattern of contributions and the quality of information. The analysis explores that the majority of papers by three authors. The average pages is 7.3 and it is the ideal for research papers. The study revealed that the journal seems to be popular among the international research community with around 173 papers for year. A significant note of the study is that the majority of the articles are contributed by co-author. A notable attribute of this study is that, this journal really stipulates / induces fruitful research for the researcher. Today, we see that research is done in almost all the branches of knowledge, especially in sciences.

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