



Scientometric Analysis of Contributions to International Journal of Information Technology and Decision Making During 2012-2016

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Abstract

Presents a Scientometric analysis of papers published in International Journal of Information Technology and Decision Making, during 2012 to 2016 as reflected in Web of Science database. It attempts to analyze the growth and development of publications output as reflected. Data for a total of 292 have been downloaded and analysed according to objectives. The year wise growth rate reveal that highest number of papers were published in 2016 i.e. 61 (20.89%) and lowest in 2012 total number of papers: 54(18.49%). Authorship pattern data reveals that most of the authors like to publish papers in collaborations and most preferred authorship pattern was two author i.e. the maximum number of papers were 88 (30.14 %) from two authors. The highly prolific authors and their publications reveal that that Shi Y, published highest numbers of papers, i.e. 25 nos., the geographical distribution contributions (International) reveals that China is in the top position with 68 publications (23.29%), The institution-wise distribution of papers reveal highest number of contributing institutions was Chinese Academy of Sciences with no. of Publications as 10 (3.43%) which is placed at 1st rank, The average number of citations per year (2012-2016) were 184 and citations are in increasing trends on year to year basis.

Keywords: Research output,; Scientometric analysis, Publication output, International journal of Informaon Technology and Decision making



1 Introduction

International Journal of Information Technology and Decision Making, “A peer-reviewed journal publishes both high-quality academic (theoretical or empirical) and practical papers and provides a global forum for exchanging research findings and case studies which covers the latest information technology and various decision-making techniques. It promotes how information technology improves decision techniques as well as how the development of decision-making tools affects the information technology era”. in the broad ranges of information technology e.g. Artificial Intelligence and Decision Making, Bio-informatics and Medical Decision Making, Cluster Computing and Performance, Data Mining and Web Mining, Data, Warehouse and Applications, Database Performance Evaluation, Decision Making and Distributed Systems, Decision Making and Electronic Transaction and Payment, -to name a few. The journal being an interdisciplinary in nature, it becomes interesting to analyse the contributions in such type of publications

2 Review of literature

Few quantitative studies have been carried to analyzing institutions research outputs of the country by using scientometric analysis. The following studies have been reviewed in view of better understanding of research productivity using scientometric analysis:-

Paul and Deoghuria (2014) made study of Indian Journal of Physics (IJP) to analyse different scientometric data for a period of ten years 2004-2013 study which reveals that that almost all physics journals (total 163) cite articles published in IJP. Notable among them is Physical Review. Kumbar et al (2015) report the publications of New England Journal of Medicine. A total of 43694 publications were published during 1989-2014, with 3262469 citations with 74.68 average citations per paper. Out of the total publication majority 24280 (55.56%) publications published in the form of letters. Mark E. J. has highest publications (266) to his credit, whereas Yusuf, S. received highest (29777) citations. highest publications from United States i.e. 28820 (65.95%). Khan, (2016) made a study of DESIDOC Journal of Library & Information Technology from 2010 to 2014 of the publication of 307 contributions in the five volumes (from Volume No. 30 to 34). The study shows a trend of gradual growth in contributions, with an average number of 61 contributions per volume of the journal. Maximum number of contributions/research papers (70) were found to be published in the year 2012, whereas the minimum (50) in the year 2010. Maximum number of contributions during the period of study are from joint authors, with a total of 188 (61.24%). A maximum number of contributions are from India, with a total of 273 (88.93 per cent). A study by Singh, (2014) ‘focuses on 657 papers of the journal i.e. Indian Journal of Pure and Applied Physics from 2006 to 2010. The study reveals that most of the papers (93.46%) were contributed jointly. CSIR is a top collaborative institution, 1.87 was the average citation per paper and overall 5.37 mean page length of the papers”.Madhu Bala, and Singh (2014) in a



study covered 316 scholarly communications of the Indian Journal of Biochemistry and Biophysics and found that multi authors published 162 (51.3%) articles. The contributions from the India were on the top position. Poonkothai (2012) studied Journal of Biosciences, which covered 394 articles during the period of 2001 to 2010.. The maximum contributions were from Single Author and also as Indian contributions.

3 Objectives

1. To study and analyze year wise research output in terms of total papers.
2. To find out the top most productive authors and authorship pattern.
3. To analyze distribution of publications according to type.
4. To find out the top participant institutions at national and international levels.
5. To study and analyze global distribution pattern of papers according to number of papers.
6. To find out year wise trend of distribution of citations

4 Data collection

For collection of the publication data, the source Web of Science (WoS) a bibliographic and citation database was used which covers a selected group of journals and conferences. The data was collected for the period 2012-2016. The search has been made for collection of data on the name of publication "International Journal of Information Technology and Decision Making" Timespan=2012-2016. The data was obtained in the year 2017. The full records were downloaded in the excel format covering articles, proceedings papers, editorial material, titles, along with author records, affiliation and citation references etc.

5 Methodology

For Scientometric analysis of publication data of International Journal of Information Technology and Decision Making, the standard form of methodologies were used to analysis of various parameters like year wise growth rate of papers, geographical distribution of Papers, Institutions-wise distribution of papers, Highly Prolific Authors, authorship pattern of papers, the top productive authors were found out and their performances were analysed based on their publications productivity. The most contributively institutions and countries have been recognized using extraction of information from affiliation text.

6 Data analysis and interpretation

6.1 Growth of Literature:

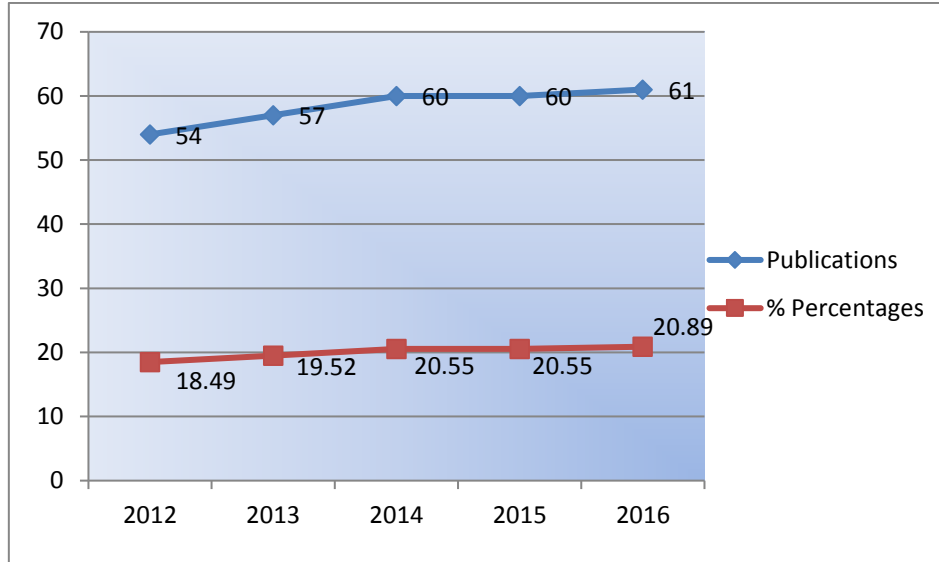


Figure 1: Year-wise research growth in terms of Total papers

The year wise research growth in terms of TP (Total papers) are given in figure 1, it shows that no. of research papers are increasing year to year basis from 2012 to 2016. It reveals that highest no. papers published in 2016, Number . of papers: 61 (20.89%) and lowest in 2012 with a total of 54(18.49%)

6.2 Authorship pattern of papers published

Table 1

Authorship Pattern of Papers Published

Year	One Author	Two Author	Three Author	Four Author	Five Author	Six Author	Seven Author	Eight+ Author	Total
2012	13	12	15	9	1	2	1	1	54
2013	8	24	9	14	2	0	0	0	57
2014	14	13	18	11	3	0	1	0	60
2015	8	16	15	17	3	1		0	60
2016	6	23	14	12	4	2	0	0	61
5 year	49	88	71	63	13	5	2	1	292
%>	16.78	30.14	24.32	21.58	4.45	1.71	0.68	0.34	100.00

Table 1 shows the authorship pattern of papers in Out of 292 papers, the maximum number of papers were 88 (30.14 %) from two authors followed by three authors 71 (24.32 %), and four authors 63 (21.58%), and so on. Data reveals that most of the authors like to publish papers in collaborations and most preferred authorship pattern was two authors.

6.3 Highly prolific authors and their publications

Table 2
Highly Prolific Authors and their Publications

S.No.	Authors	Records/Publications	% Percentage
1	Shi Y	25	8.56
2	Zavadskas Ek	7	2.40
3	Xu Zs	6	2.06
4	Chen Ty	5	1.71
5	Saaty Tl	4	1.37
6	Koksalan M	4	1.37
7	Huseynov Oh	4	1.37
8	Aliev Ra	4	1.37
9	Xia Mm	3	1.03
10	Wang J	3	1.03
11	Turskis Z	3	1.03
12	Tang L	3	1.03
13	Soleimani-Damaneh M	3	1.03
14	Sirbiladze G	3	1.03
15	Kou G	3	1.03
16	Ergu D	3	1.03
17	Baloian N	3	1.03
18	Zhong N	2	0.69
19	Zhang W	2	0.69
20	Zeng Sz	2	0.69
21	Yu Pl	2	0.69
22	Yu La	2	0.69
23	Yao Yy	2	0.69
24	Xiong X	2	0.69
25	Wu Zq	2	0.69

Table 2 : shows a list of most productive/ prolific authors during the period from 2012 to 2016. It is revealed that Shi Y, published highest numbers of papers, i.e. 25 nos., followed by Zavadskas EK, who published 7 nos. papers with second position, and Xu ZS published 06 nos. of papers with third position.

6.4 Type of publications

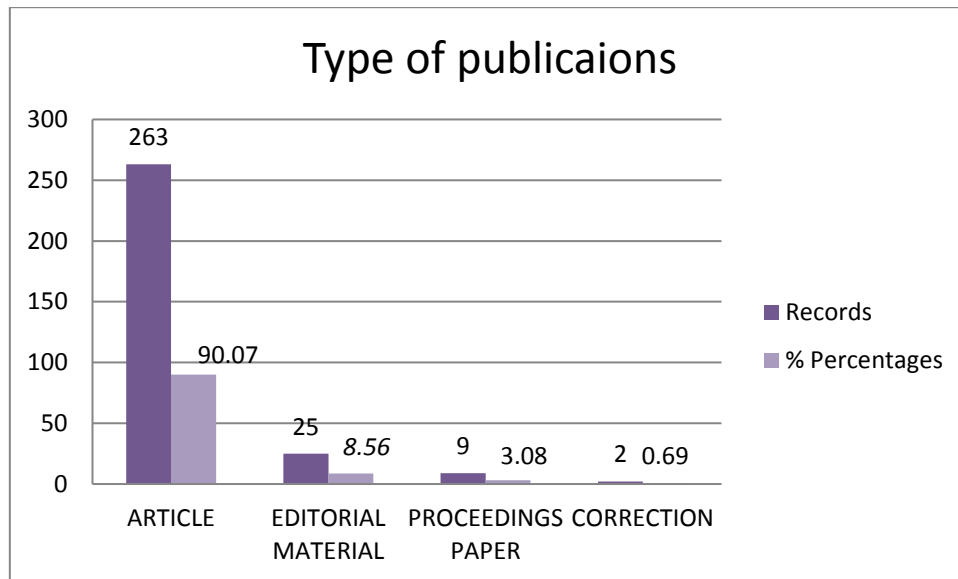


Figure 2: Distribution of publications according to type

Figure -2 shows that Distribution of publications according to type it is found that research productivity in the form of number of articles was 263 (90.07%) which is maximum followed by Editorial Material 25 (8.56%), Proceedings papers with papers 09 (3.08%). It is revealed that research productivity in terms of article find highest number of papers from 2012-2016..

6.5 Geographical distribution contributions (international)

Table 3
 Collaboration of papers with other countries

S.No.	Countries/Territories	Records/Publicaions	% of 292	Rank
1	China	68	23.29	1 st
2	USA	55	18.84	2 nd
3	Taiwan	37	12.67	3 rd
4	Spain	21	7.19	4 th
5	Iran	17	5.82	5 th
6	Turkey	16	5.48	6 th
7	Japan	14	4.80	7 th
8	Canada	11	3.77	8 th
9	Portugal	10	3.43	9 th
10	Lithuania	8	2.74	10 th
11	India	8	2.74	10 th
12	Russia	7	2.40	9 th
13	Poland	6	2.06	8 th
14	Italy	6	2.06	8 th
15	Germany	6	2.06	8 th
16	France	6	2.06	8 th
17	Finland	6	2.06	8 th
18	Australia	6	2.06	8 th
19	Malaysia	5	1.71	9 th
20	Belgium	5	1.71	9 th
21	Azerbaijan	5	1.71	9 th
22	Switzerland	4	1.37	10 th
23	Rep of Georgia	4	1.37	10 th
24	England	4	1.37	10 th
25	Chile	4	1.37	10 th

Table 3 shows geographical distribution contributions (International) in International Journal of Information Technology and Decision Making. It is observed that China is in the top position with number of publications as 68 (23.29%), followed by USA 55 (18.84%) as a second position and Tiwan with 37 (12.67%) in third position.

6.6 institutions-wise distribution of papers published during (2012-2016)

Table 4

Institution-wise distribution of papers

S.No.	Organizations	Records/Publications	%	Rank
1	Chinese Academy of Sciences	10	3.43	1st
2	Pennsylvania Commonwealth System of Higher Education Pcshe	9	3.08	2nd
3	Vilnius Gediminas Technical University	8	2.74	3rd
4	University of Nebraska System	8	2.74	3rd
5	University of Science Technology Of China	7	2.40	4th
6	University of Pittsburgh	7	2.40	4th
7	Sichuan University	6	2.06	5th
8	Islamic Azad University	6	2.06	5th
9	Hefei University of Technology	6	2.06	5th
10	Chang Gung University	6	2.06	5th
11	University of Nebraska Omaha	5	1.71	6th
12	University of Tehran	4	1.37	7th
13	University of Electronic Science Technology Of China	4	1.37	7th
14	Universidad De Chile	4	1.37	7th
15	Tianjin University	4	1.37	7th
16	Russian Academy of Sciences	4	1.37	7th
17	Polish Academy of Sciences	4	1.37	7th
18	National Chiao Tung University	4	1.37	7th
19	Middle East Technical University	4	1.37	7th
20	City University of Hong Kong	4	1.37	7th
21	Central South University	4	1.37	7th
22	Azerbaijan State University of Oil Industry Asuoi	4	1.37	7th
23	Aalto University	4	1.37	7th
24	University of Sevilla	3	1.03	8th
25	University of Granada	3	1.03	8th

Table 4 shows the Institution-wise distribution of papers in International Journal of Information Technology and Decision Making. It is revealed from the above Table 4 that authors/contributors of many Institutions are publishing their papers in this journals, It has been found that from 2012 to 2016 highest contributed institutions was Chinese Academy of Sciences with number of publications as 10 (3.43%) and is placed at 1st rank, Pennsylvania

Commonwealth System of Higher Education Pcshe with 9 (3.08%) placed at 2nd rank and Vilnius Gediminas Technical University with 8 (2.74%) placed at 3rd rank.

6.7 Year wise distribution of citations of papers published during 2012-2016

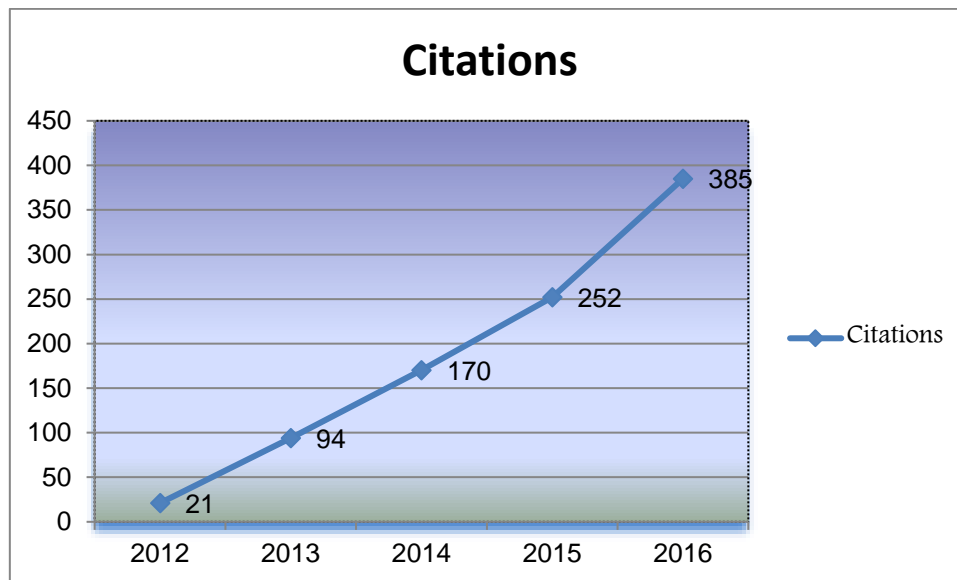


Figure 3: Year wise distribution of Citations of papers

Figure 2 shows that citations were highest in 2016 with number of citations as 385 and lowest in 2012 with 21, It is revealed that average of citations from 2012 to 2016 per year was 184, and also it is observed that citations are in increasing trends from year to year basis in five years.

7 Findings and conclusion

The study shows that International Journal of Information Technology and Decision Making has published 292 papers in the period of 2012 to 2016. The year wise growth rate reveals that highest no. papers were published in 2016 followed by 61 (20.89%) and lowest in 2012 with a total of 54(18.49%). Authorship pattern data reveal that most of the authors like to publish papers in collaborations and most preferred authorship pattern was two author i.e. the maximum number of papers were 88 (30.14 %) from two authors , The highly prolific authors and their publications were contributed by Shi Y who published highest numbers of papers, i.e. 25 nos., followed by Zavadskas EK with



7 publications in the second position, while Xu ZS published 06 nos. of papers with third position. From the geographical distribution contributions (International), it is observed that China is in the top position with 68 (23.29%) publications, followed by USA 55 (18.84%) as a second position and Taiwan with number of publications as 37 (12.67%) in third position. It is found from institution-wise distribution of papers that highest contributing institution was Chinese Academy of Sciences with no. of Publications as 10 (3.43%), placed at 1st rank, Pennsylvania Commonwealth System of Higher Education with no. of Publications 9 (3.08%) placed at 2nd rank and Vilnius Gediminas Technical University with no. of Publications 8 (2.74%) placed at 3rd rank, the average of citations per year (2012-2016) were 184 and citations are in increasing trends year to year basis.

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