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MOBILE BASED INFORMATION SERVICE PUBLICATION IN GLOBAL: A SCIENTOMETRIC ANALYSIS

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ABSTRACT

This study will examine the increasing Mobile based information service related literature, using scientometric approach. Scientometric analysis of Mobile based information service literature indexed by the Web of Science database for the period 1999-2012 with regard to growth of publications and citations, relative growth rate and doubling time, national and international collaboration, highly productive institutions, highly productive authors, highly preferred journals and highly cited publications, etc. will be conducted.

INTRODUCTION

Scientometric is a vital field of information science because it represents a singular set of techniques for the observation and analysis of information resources and for the management of knowledge in social and organizational contexts. Bibliometric ways area unit utilized in studies of properties and behavior of recorded knowledge, for analysis of the structures of scientific and research areas, and for evaluation of research activity and administration of scientific information. Varied applied mathematics ways are applied to review and measure authorship pattern of publication. British librarian Alan Pritchard initial introduced the term bibliometrics and outlined it as study of the “application of arithmetic and applied mathematics ways to books and different media of communication”¹.

Scientometric Study

Methods of analysis embody qualitative, quantitative and machine approaches. In general, scientometric analysis use data on numbers and authors of scientific publications and on articles and therefore the citations in that to measure the output of nations, to spot national and international networks, and to map the development of latest (multi-disciplinary) fields of science and technology, similarly on grasp the inner logic of science development Scientometric indicators like “number of papers”, “number of citations” and “citation per paper” became progressively necessary as instruments for analyzing scientific activities and their relationship with economic and social development.

Review of Literature

Biswas, Bidhan *et al.*, have carried out a research with 358 original contributions published with journal of Economic Botany for the Period 1994 – 2003. A contribution by single author and small teams comprising two or three author’s account was about 80 % of the papers. The citations, books accounted for 59 %, and articles for 41 %. E citations from 1998 are still negligible in number. Charts, diagrams, photos and tables included in the articles to the amount of 396, 427, 859 and 925 respectively. The length of maximum number of articles (38%) varied form six to 10 pages. Articles running 11 pages to 15 ranked next which was accounted to 31%. The highest number of articles totaling 217 (60.61%) has emanated from academic institutions such as universities. The articles were originated from 45 different countries. 51.7% articles published from first four countries and 67.8% from the first ten countries and the first 15 countries for 78.6% of the articles². Shriram have discussed the Artemisia is an herb that yields a natural component known as “Artemisinin” which is being used for the treatment of Malaria world wide. This paper uses data indexed in the PubMed database for the period of fifteen years (1996 – 2010) to study the research on Artemisia. It has been found that publications on this subject grew to 712 percent in 2010 as compared to 1996. China is one of the countries that have contributed a number of publications in this area. In India, Central Institute of Medicinal and Aromatic Plants (CIMAP), Lucknow, Uttarpradesh is a leading contributor of literature o Artemisia. Kannappanavar and Roopashree have discussed about

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the information use pattern of Indian Geneticists. The study found that journals are heavily cited as compared to other forms of documents. It is evident from the study that the trend is towards team research. Multi authors lead over single author. United States contributes more number of articles in this subject. Around 48 % of the journals cited are from United States. It is observed from the study that number journals cited are of the period between 1996 and 2000 followed by 2001 – 2006 and 1990 – 1995. Therefore it can be deduced that current literature is more important for research in this subject field. It is observed from the study that “Genetics” is the most heavily cited journal followed by “Science” both is from United States. The Indian Journal, Journal of Genetics is in the 14th place Literature as old as 174 years have also been cited⁴.

Objectives

The objectives of the study were as follows:

To examine the authorship pattern of the contributions

To enumerate the literature out put –Journal wise

To enumerate the literature out put –Year wise

To enumerate the literature out put –Word wise

MATERIALS AND METHODS

The analysis of papers published by web of science within the field of Science and Technology coated and index database were taken because the prime source for the present study.

Data Collection Tools and Techniques

The data are going to be down loaded from the web of Science database and therefore the records are going to be born-again into a database for the convenience of reckoning and analyzing, principles and laws governing Scientometric tools are going to be applied to the data collected. Appropriate statistical techniques are going to be applied where needed.

RESULTS AND DISCUSSION

Authorship Pattern

Table 1 shows the number of authors and their corresponding publications. Lotka's Law, an inverse, square law, is used to find authors productivity patterns. It states that globally 2.63 percents of articles were from single authors, followed by 17.08% authors by double authors etc. 80.27 percents of multi-authored were globally contributes in this field of Mobile based information service. The results depict that majority of papers are Multi authored. It clearly brings out collaborative research in the field It clearly brings out multi investigation is high compare than individual research in the field of Mobile based information service.

Table 1: Authorship Pattern

Authors	Contribution	Cumulative	Percentage (%)
1	126	126	2.6321287
2	818	944	19.720075
3	1272	2216	46.292041
4	1052	3268	68.268226
5	660	3928	82.055567
6	258	4186	87.445164
7	168	4354	90.954669
8	136	4490	93.795697
9	108	4598	96.051807
10	20	4618	96.469605
More than 10	169	4787	100
	4787	-	-

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Degree of Collaboration

The authorship pattern analyzed to determine the percentage of single and multi-authorship is denoted in table 2. The extended of collaboration in research can be measured with the help of multi authored papers using in the formula given by Subramaniam (1982).

Degree of collaboration $C = Nm / (Nm + Ns)$

Based on this study, the result of the degree of collaboration $C = 0.97$. i.e, 0.97 percent of collaborative authors' articles published during the study periods. Individual contribution is just 2.63 percents in the field of Mobile based information service research output. Multi author's contribution is 97.36 percents of the Mobile based information service research output. The study interpreted that multi author contributed papers maintained the high profile among Mobile based information service research scientists.

Table 2: Shows Authorship Pattern of Degree of collaboration

S. No	Authors	Contribution
1	Single authors	126
2	Multi authors	4661
Degree of Collaboration		0.97

Relative Growth Rate and Doubling Time

The relative growth rate and doubling time of publications have been presented in Table 3 indicates the value of an average RGR of publications which decreased from 3.29 in 1999 to 0.09 in 2012. Simultaneously, the values of doubling time (Dt) of publications increased from 0.21 in 1999 to 7.33 in 2012.

Table 3: Relative Growth Rate and Doubling Time

S. No	Year	No. of Records	Cumulative	W1	W2	RGR	Doubling Time
1	1999	27	27	0	3.295837	3.295837	0.210265261
2	2000	40	67	3.295837	4.204693	0.908856	0.762497236
3	2001	43	110	4.204693	4.70048	0.495788	1.39777557
4	2002	66	176	4.70048	5.170484	0.470004	1.4744567
5	2003	98	274	5.170484	5.613128	0.442644	1.56559182
6	2004	117	391	5.613128	5.968708	0.355579	1.948931506
7	2005	136	527	5.968708	6.267201	0.298493	2.321662574
8	2006	139	666	6.267201	6.50129	0.234089	2.96041095
9	2007	108	774	6.50129	6.651572	0.150282	4.611324468
10	2008	120	894	6.651572	6.795706	0.144134	4.808029148
11	2009	138	1032	6.795706	6.939254	0.143548	4.827647721
12	2010	138	1170	6.939254	7.064759	0.125505	5.521688766
13	2011	163	1333	7.064759	7.195187	0.130428	5.313264379
14	2012	132	1465	7.195187	7.289611	0.094423	7.33929787

Author's Wise Document

The most productive author is Lee J with 14 papers dealing with Mobile based information service of all papers published in this research field. The authors of the seminal publication on Mobile based information service given Table 4 Lee S 11, Hwang CS and Kim J each 9 record, respectively. It can be clearly visualized from the below table.4

Journal Wise Document

The most productive Journal is Computer Communications with 34 papers dealing with Mobile based information service and 2.32% of all papers published in this research field. The journal of the seminal

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publication on Mobile based information service given table 5, IEEE Transactions on Vehicular Technology and IEICE Transactions on Communications appear on rank 2 respectively.

Table 4: Author's wise document distribution

S. No	Author	Records
1	Lee J	14
2	Lee S	11
3	Hwang CS	9
4	Kim J	9
5	Park K	8
6	Park S	8
7	Zhou T	8
8	Das SK	7
9	Liu Y	7
10	Chen X	6
11	Kangasharju J	6
12	Kim B	6
13	Kim K	6
14	Lin YB	6
15	Mori K	6
16	Shin D	6
17	Chen JL	5
18	Corradi A	5
19	Ersoy C	5
20	Kim H	5

Table 5: Journal wise document distribution

S. No	Journal	Records
1	COMPUTER COMMUNICATIONS	34
2	IEEE TRANSACTIONS ON VEHICULAR TECHNOLOGY	31
3	IEICE TRANSACTIONS ON COMMUNICATIONS	31
4	EXPERT SYSTEMS WITH APPLICATIONS	28
5	WIRELESS PERSONAL COMMUNICATIONS	26
6	WIRELESS COMMUNICATIONS & MOBILE COMPUTING	24
7	WIRELESS NETWORKS	24
8	IEEE JOURNAL ON SELECTED AREAS IN COMMUNICATIONS	20
9	INTERNATIONAL JOURNAL OF MOBILE COMMUNICATIONS	20
10	IEEE TRANSACTIONS ON MOBILE COMPUTING	18
11	IEEE TRANSACTIONS ON WIRELESS COMMUNICATIONS	18
12	MOBILE NETWORKS & APPLICATIONS	18
13	IEEE COMMUNICATIONS MAGAZINE	15
14	IEICE TRANSACTIONS ON INFORMATION AND SYSTEMS	14
15	DECISION SUPPORT SYSTEMS	13
16	COMPUTER NETWORKS	12
17	COMPUTER NETWORKS-THE INTERNATIONAL JOURNAL OF COMPUTER AND TELECOMMUNICATIONS NETWORKING	11
18	IEEE TRANSACTIONS ON CONSUMER ELECTRONICS	11
19	MOBILE INFORMATION SYSTEMS	11
20	SENSORS	11

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Word Wise Distribution of Documents

The high frequency keywords will enable us to understand the various aspects of Mobile based information service under study. The high frequency keywords were: table 6 - Mobile 598 (22.52%), Based 456 (17.17%), Service 219 (8.24%), Networks 217 (8.17%) and Services 213 (8.02%). Analysis of the keywords appeared either on the title or assigned by the indexer or the author himself will help in knowing in which direction the knowledge grows.

Table 6: word wise distribution of Documents

S. No	Word	Records
1	Mobile	598
2	Based	456
3	Service	219
4	Networks	217
5	Services	213
6	Location	188
7	Information	163
8	System	153
9	Wireless	153
10	Using	95
11	Systems	94
12	Management	91
13	Network	88
14	Data	87
15	Context	74
16	Aware	73
17	Hoc	73
18	User	63
19	Web	63
20	Agent	61

Table 7: Year wise distribution of documents

S. No	Publication Year	Records
1	1999	27
2	2000	40
3	2001	43
4	2002	66
5	2003	98
6	2004	117
7	2005	136
8	2006	139
9	2007	108
10	2008	120
11	2009	138
12	2010	138
13	2011	163
14	2012	132

Year Wise Distribution of Documents

During 1999 - 2012 a total of 1465 publications were published in Mobile based information service by global. The average Number of Publications produced per year was 7.14%. The highest number of publications 163 was produced in 2011 Table 7 was given year wise growth and collaboration rate in Mobile based information service. It can be clearly visualized from the table 7 that growth of the literature was very low during 1999. It Indicate that research in Mobile based information service received a major impetus this period.

Conclusion

This paper has analyzed 1465 publications on Mobile based information service and cited within the Web of science information throughout 1999-2012. It states that pair of 2.63 percents of articles was from single authors. 0.97 % of cooperative authors' articles revealed during the study periods. the foremost productive author is Lee J with fourteen papers managing Mobile based information service of all papers revealed during this analysis field and most revealed journal of Computer Communications with thirty four (2.32%) papers managing Mobile based information service. The high frequency keywords were "Mobile" 598 (22.52%). the very best range of publications 163 were created in 2011 and really low throughout 1999. Scientometric studies change the policy manufacturers and directors to know and grasp the expansion, development and impact of analysis.

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