CHAPTER - V
FINDINGS AND CONCLUSION

5.1 Introduction

In this era, people and scientists are turning towards the information and technology. Information and technology (IT) relates with the research. Scientist are trying to write jointly than the single. Single author, joint author, more than two or three author is authorship pattern. Which types of author is writing, whether it is single, two authors, three author or more than three authors is called authorship pattern.

5.2 Library and information Science Professionals

In the present study Library and Information Science Professional means the authors who has written articles in various publications covered under LISA (Library and Information Science Abstract) who are working under various capacities in Library / Information Centers / Documentation Centers / Knowledge Resources Center / Dept. of Library & Information Science etc.

5.3 Bibliometrics

Bibliometrics has been defined as “the quantitative analysis of the characteristics behavior and productivity of all aspects of written communication, library staff and information users” the word Bibliometrics was introduced by Pritchard in 1969 which substituted the earlier term “Statistical Bibliometrics” which was used for the same concept. Various techniques of Bibliometrics analysis help to determine special trends in literature of given field study. It is now popular among library professionals and researchers. Bibliometrics studies are helpful in evaluating library services, collecting development, policy refinement, decision making and resource allocation and even weeding. Data produced by Bibliometrics methods provides a scientific basis to library administrator for decision making. Bibliometrics has been considered useful for curriculum analysis and appraisal of research output quality. (Mahapatra) Bibliometric has become a standard tool of science policy and research management in the past decade. All significant complains of science indicators to a large extent rely on publication and citation
statistics and other Bibliometric techniques (Kumar 1998). Bibliometric is concern with the application of mathematical and statistical is major sub discipline of quantitative research. This is a tool traditionally used by the library and information science professional for studying the communication process, information flow and professional for better understanding and effective management and dissemination of information.

Bibliometric as an interdisciplinary subject, takes on an auxiliary or instrumental role in measuring the different fields that make up its general branch of science that is discipline integrating the curriculum of library and information science. These subject act like links of a chain in that, should one of them fail, the other could hardly function together in a satisfaction way. For example. Bibliometric collaborates regularly with the field of information sources, in order to detect lacunae in Bibliometric collection, maintain the collection and facilities corrections and the occasional removal of objectionable materials. Moreover its analysis rely on descriptive fields of primary documents that have been developed by the area of documentary analysis: cataloguing, classification or indexation. When unable to find a given document due to increasing quantity of them- it has resource to bibliography and information sources either printed or mechanized in order to obtain the necessary documents needed to analyze a given topic or its researcher.

Recent developments in the methods of library and information science have contributed significantly to the consolidating of Bibliometric. In turn the latter has also played an important role in the exposure and application of information science thus establishing a symbiosis between the two sciences.

5.4 Finding of the Study

The findings of Bibliometrics study in LISA (Library and Information Science Abstract) on Digital Libraries are as follows.

5.4.1 Contribution of Research Articles year wise analysis

The distribution of research articles on digital Libraries by year and months published in LISA from 2008-2012. It is clear that the number of research articles has been increased over the months of January. It is indicates also that of the 2259 articles published in January months in five years. i.e. (48.88%) has the height
number. While in the months of February 78 (1.68%) and August 77 (1.68%) has the lowest number. (Table No. 4.1)

5.4.2 Contribution of Research Articles by Month Wise in Year 2008

The distribution of research articles on digital libraries by months in year 2008 published in LISA. It is clear that the number of research articles has been published in month of January 550 (57.41%) It is indicate that of the 24 (2.50%) in August and 26 (2.71%) in month of March contribution of research articles publish. 24 and 26 has the lowest number of articles in that months. 550 (57.41%) articles published in month of January is the highest number. The 5% of the articles are published in September, (5.01), October (5.63%), November (5.2), December (4.80%), serialaly. In the months of April 34 (3.54%) May 32 (3.34%), June 30 (3.13%) published in LISA (2008). The figure of the month of February 4 (0.41) is very lowest figure in the year 2008. (Table 4.2)

5.4.3 Contribution of Research Articles by Month Wise in Year 2009

The distribution of research articles on digital libraries in year 2009 in LISA- Library and information science Abstract. It is clear that the number of research articles has been increase of over the year. It indicates also that of the contribution of research articles highest number 513 (45.31%). While the research articles 20 (2.08%) in February, 17 (1.50%) August have the lowest number. In the month of March 60 (6.26%), and April 111 (9.80%), May 47 (4.15%), June 39 (3.44%), and July 104 (9.18%) minimum number are published in LISA 2009. In the month of September 50 (4.41%) are published in LISA. As well as October 82 (7.24%), November 49 (4.32%) and in December 40 (3.53%) are published. (Table No. 4.3)

5.4.4 Contribution of Research Articles by Month wise distribution 2010

The distribution of research articles on digital Libraries by month wise in the year 2010. Published in Library and information science Abstract (LISA) 2008 to 2012. It is clear that the number of research articles has been published much more in the month of January i.e. 501 (49.75%).
It indicate also that of the 11 (1.09%) and in August 19 (1.88%) contribution of articles in minimum Rank in July 2010. While in month of February 9 (0.89%) articles are published, it has the lowest number in 2010.

It is clear that in March 50 (3.57%), June 55 (5.46%), and September 5 (4.96%), October 87 (8.63%), November 42 (4.17%), and December 40 (3.97%) articles are published in LISA 2010. (Table No. 4.4)

5.4.5 Contribution of Research Articles by Month Wise Distribution in 2011

The distribution of research articles on digital Libraries by month wise in the year 2011. Published in Library and information science Abstract LISA 2011. It is clear that number of research articles has been published in highest number 470 (48.60%) month of January 2011. It is also indicates that of 10 (1.03%) articles have the lowest Rank in the year 2011.

While in the months of April 82 (8.47%), July 81 (8.37%), October 82 (8.47%), research articles are published. It is also indicates that February 97 (10.03%), March 47 (4.86%), may 39 (4.03%), June 34 (3.51%), August 10 (1.03%) September 24 (2.48%), November 44 (4.55%) and December 37 (3.82%) research articles are published in LISA 2011. (Table No. 4.5)

5.4.6 Contribution of Research Articles by Month wise distribution in 2012

The distribution of research articles digital Libraries by month wise in the year 2012. Published in Library and information science Abstract (LISA) in 2012.

It is clear that number of research articles has been published in highest number ie 225 (40.32%) in the month of January 2012. It is also indicates that in month of August 7 (1.25%) research articles have the lowest Rank in the year 2012. In the month of June 26 (4.65%) and October 25 (4.48%) near about same articles are published. While in the months of February 28 (5.01), March 50 (8.96), April 57(10.21%), May 45 (8.06%), July 59 (10.57%), September 11 (1.97%), November 15 (2.68%), and in December 10 (1.79%) research articles are published in LISA 2012. (Table No. 4.6)
5.4.7 Authorship Pattern year wise

It is clear that the 788 articles written by single author and it is the highest number published in LISA 2009. It indicates also that 374 articles written by single author published in LISA 2012. It is the lowest number. The number of research articles has been published in LISA written by two authors i.e. 229 (2009) it is the highest number and 82 articles published in 2012 with lowest number. It indicate that in 2012, 60 research articles are published written by three authors as well as 61 research articles are published in 2008 and those are lowest number. Table No.08 shows the distribution of research in year 2012. It is the lowest number in the average of five years 2008 to 2012. 57 articles written by four articles published in 2011 i.e. highest number. More than four author contributed (07) research articles in the year 2009. It is the lowest contribution in the year 2008 to 2012. In the year 2011, 23 research articles contribution by more than four authors. It is the highest number is the five years rank. 20 research articles are contributed by more than four authors. This confirms, “Single authorship is widely used among Library and Information Science professionals” (hypothesis no.1) is valid. (Table No. 4.7)

5.4.8 Relative Growth Rate & Doubling Time for Publication

The Relative Growth Rate \([R (P)]\) and Doubling Time \([Dt (P)]\) of Publication in Table No.4.8. It can noticed that the Relative Growth Rate of Publication\([R(P)]\) lightly decrease from the rate of 0.7801 in 2009 to 0.1286 in 2012. The mean relative growth (i.e. 2008 to 2012) showed a growth rate of 0.3147. The corresponding Doubling Time for different years \([Dt (P)]\) highly increased from 0.8883 in 2009 to 5.3888 in 2012. Thus as the rate of growth of publication was decreased, the corresponding Doubling Time was increased. (Table No. 4.8)

5.4.9 Relative Growth Rate & Doubling Time of Citations

The Relative Growth Rate \([R (C)]\) and Doubling Time \([Dt (C)]\) of Citations in Table No. 4.9 Figure no. 4.9. It can noticed that the Relative Growth Rate of Citation \([R (C)]\) lightly decrease from the rate of 1.0476 in 2009 to 0.1478 in 2012. The mean relative growth (i.e. 2008 to 2012) showed a growth rate of 0.38732. The corresponding Doubling Time for different years \([Dt (C)]\) highly increased
from 0.6615 in 2009 to 4.688 in 2012. Thus as the rate of growth of Citation was decreased, the corresponding Doubling Time was increased. (Table No. 4.9)

5.4.10 Degree of Collaboration

The above table reveals that, the year wise degree of collaboration which is falls between 0.36 and 0.63 with an average of 0.44 during the study period. This confirms, “Collaboration patterns in not reflected among the professionals” (hypothesis no. 3) is valid. (Table No. 4.10)

5.4.11 Degree of Collaboration among different category of authors

The degree of collaboration among two authors publication 0.20 is the highest and best was 0.14. In three authors collaboration 0.10 is highest least similarly in four authors collaboration 0.05 was highest and least was 0.02 whereas more than four authors collaboration 0.03 was highest and least was 0.06. It was noticed that 0.20 was highest among the collaboration in different category of authors. This confirms, “Collaboration patterns in not reflected among the professionals” (hypothesis no. 3) is valid. (Table No. 4.11)

5.4.12 Length of Articles

It is found that 3833 (82.93%) articles had page length in the range of 1-10 pages followed by 690 articles (14.93%) in the page range of 11-20 followed by 66 articles (1.43%) in the page range from 21-30. There are 33 (0.7%) articles having more than 30 pages. (Table No. 4.12)

5.4.13 Authors Productivity

The average author per paper for the period 2008-2012 is 2.09 and productivity per author mentioned as 0.48.

The above table shows that the data pertaining to author productivity and average author per year. The highest no. of productivity per author is 0.65 and lowest no of author is found 0.30. In the case of Average Author Per Paper the highest no. was found that 3.39 and lowest number was found 1.55. (Table No. 4.13)
5.4.14 Channels of communication

The distribution of Channels of communication scholarly journals research output. As common in many subjects the single most prevalentation of publication is the research articles, which contributes 2650 (57.33%) of the total literature. The second largest form of publication is trade journals which account to 1040 (25.50%) followed by Magazines 472 (10.21%), other minor source are News papers. (Table No. 4.14)

5.4.15 Ranking of Publication Title

Rank list of journals, the study reveals that “choice Journal” score the first rank which account to 855 (18.50%) of the total papers. The “Electronic Library” scored second rank with 396 (i.e.8.57%) papers and OCLC system and service 305 (i.e.6.60%) scored third rank in the rank list. (Table No. 4.15)

5.4.16 Distribution of Literature in Various Channels of Communications

the distribution of document output, As common in many subject the single types LISA research most prevalent from of publication is the research articles which contributes 1707 (i.e. 36.93%) of the total literature. The second largest from of publication is feature which account to 1690 (i.e.36.56%). The largest from of publication is commentary which account to 317 (i.e.6.85%). Fifth largest from of publication is general information 176 (i.e.3.80%). Followed by case study i.e. 127 (2.74%). Other minor document are report 110 (2.37%), Editorial 31 (0.67%), News 18 (0.38%), Interview, Correspondence, literature review, poem, Speech/ Lecture (0.17% to 0.02%) of the total publication. (Table No. 4.16)

5.4.17 Ranking of Keywords

The distribution of subject title of the LISA research output. As common in many subject titles the single most prevalent form of publication of subject title are the digital libraries 864 (i.e.8.99%) of the total literature. The second largest form of publication of subject title is studies 736 (7.66%). The third largest from of publication of subject title is academic libraries 371 (3.86%). The fourth largest form of publication of subject title which account to 318 (3.31%) of the total literature. Other minor subject title are Notification 256 (2.66%), College and
Universities 256 (2.66%), Data Bases 235 (2.41%), Libraries 209 (2.17%) and Library Science 199 (2.07%). Web site Review, Technological Changes, websites, societies, social networks, Internet, Achieve and Records, Metadata, Research Methodology, Learning, Online Database, web blogs, students, library resources, Librarians, School Libraries, Information Retrieval, software, Education, information management, information technology, internet resources, Books, Information library, R&D Human Electronic Publishing, conferences, collection, digital audio players, Digital Divide, document delivery, Higher Education, Library collection, information professional, knowledge management, E-document, reference services, search engine, semantic web, communication, copyright, distance learning, experiment, history, inertial property, journals, medicine, open source software, searches, social research, behaviors, community developing, countries, digital photoFigurey, Essays, E-books, models, public access, web portals, computer science, electronic mail services, information system, international standards, Libraries Digital Lingers, Marketing, Neural networks, Programming Languages, society, teaching, world wide web, design, end user, publication, user behaviors, accounts to 189 to 30 (1.97% to 0.31%) of the total publication. (Table No. 4.17)

5.4.18 Classification wise distribution

The distribution of classification field of LISA research output. As common in may subject the single most prevalent form of publication is the research experimental/theoretical which contributes 469 (i.e.10.15%) of the total literature. The second largest form of publication is communication and information management which account to 329 (7.12%) followed by school and educational services i.e. 173 (3.74%). Other minor classification subject are Telecommunication system and internet communication 161(i.e.3.48%), United States 155(i.e.3.35%), Asia and Pacific 142 (i.e.3.07%) and Western Europe 140 (i.e.3.03%), Record management, Software and system Experiment / Theoretical treatment, Law, Management Science, Operation research, Information technology, management, social trends and culture, Africa, Canada, professional services, hot elsewhere classified, publication industry, social policy, Training and development, Arts entertainment and recreation, Eastern Europe, investment analysis and personal finance, market research, planning, public relation, relating
industries, social responsibility, Brad casting and telecommunication, Industry, capital and debt management, company specific, economic condition and forecasts economic theory, Health care industry, image managerial skills, Metal working industry, middle east, organizational behavior, pharmaceuticals industry, pollution control, public sector, safety management, services industries not elsewhere classified software and computer services industry and text tile appeared industries accounts to 67 (1.45%) of the total publication. (Table No. 4.18)

5.4.19 Institution wise authorship

It can be observed from the table no. 4.19 that, maximum 33 (0.71%) authors were from the Millwood Group Corp followed by Jawaharlal Nehru University 11 (0.24%) and Meintanis, Konstantinos A. 11 (0.24%) authors. Out of 4622 total Institutions, 3213 (69.52%) are Academic Institutions like Universitiesandal colleges while remaining 1409 (30.48%) are corporate as well as private Laboratories. Hence, "Authors affiliated to academic institutions contributes maximum” (hypothesis no. 2) is valid.

5.4.20 Place of publication

The country-wise distribution of papers; results indicated that the works were published by authors from 42 different nationalities, out of the total 4622 articles. As it is illustrated in the Table 4.16 USA 669 (i.e.14.47%), UK 406 (8.78%), Swaziland264 (i.e.5.71%), Uganda207 (i.e. 4.48%), Spain198 (i.e. 4.28%) were the countries with high contributions. (Table No. 4.20)

5.4.21 Rank list of authors

It is indicate that 9647 contributors have published 4622 articles. Therefore maximum number of contributors are Bookers, M.Keith, Wands, Bruce, Banks, Adam J and Veigl, Thomas and their contribution in articles are 60 each i.e. 0.62 percentages and their rank is first. (Table No.4.21)

5.4.22 Language wise distribution

The language wise distribution shown that the journal published in English language at the top stage i.e. 3989 (86.30%), while at the second stage is Spanish with 256 (i.e.5.54%), There are article is published in German 156 (i.e.3.38%),
after that Slovenian is 122 (2.64%) and Portuguese languages with i.e.2.14% and 99 articles published. (Table No. 4.22)

5.4.23 Coden wise distribution

The highest ranking of Coden was found that CHOIAV 408 (51.52%) behind that OSSEEE was found 76 (9.60%), after that LIBTA3 42 (5.30%) and IDSUDQ was 35 (3.54%). The table was found were lowest ranking of Coden were MTTBCR, NEJMAG, QQEJAV, REDTAH and SORSAT were only single Coden found i.e. 0.13% and its rank goes to 15.(Table No. 4.23)

5.5 Suggestions

Some time it is noticed that in LISA, some articles were published in unknown names. It is suggested that while publishing any article there should be complete name and address of the author.

5.6 Further Area of Research

1. Topics like Electronic resources, electronic Journals, Library Automation Published in LISA can be taken for study

2. Online databases like EBSCO, LISTA etc. can also be taken for study.