CHAPTER – II
REVIEW OF LITERATURE

This investigation has taken up the research performance of Bharathidasan University in Tamil Nadu State. The approach is on an institutional basis. This study goes in for an analysis of Ph.D completions and publications output as its main study. Studies of similar analysis reviewed are given in this chapter. A review of related literature is a direction to find out the reality and the beneficial nature and the reliability of a work under taken, keeping in mind the materials that are available in connection with the topic. A review will give the investigator vivid idea of what he should do and how should go about his investigation.

Saracevic, T., & Perk, L. J made a study on Ascertaining activities in a subject area through bibliometric analysis: Application to library literature (1973). A combination of quantitative and qualitative analyses was used on the journal articles indexed in one volume of Library Literature. The findings include: the dispersion of articles among journals followed a Bradford-type distribution except for a “collapse” at the end, possibly showing low level of interaction of librarianship with other fields; considerable proportion of articles was of news-type; administration was the largest single subject covered.

Koenig, M.D School of Library Service, Columbia university, New York, NY 10027, U.S.A made a study on A bibliometric analysis of
pharmaceutical research (1983). This study examines pharmaceutical research from a bibliometric perspective. It finds that there are bibliometric correlates of successful pharmaceutical research, in particular, the number and proportion of star (highly cited) clinical medical articles. The research also reveals that pharmaceutical company research reported in basic biomedical research journals is very highly cited, on a par with NIH supported medical school research. The policy implications of this are discussed.

Narin, F and Rozek, R.P in the study Bibliometric analysis of U.S. pharmaceutical industry research performance (1988) measured the size, nature, and quality of the publications authored by scientists employed at firms in the U.S. pharmaceutical industry from 1973 through 1982 using the SCI and BID-MEDLINE databases. The nature of the industry's contribution in the biomedical area was measured on a basic-clinical scale. This analysis confirmed that the U.S. pharmaceutical industry produces quality research and plays an important role in scientific progress.

Kaminer, N and Braunstein, Y.M made a study on Bibliometric analysis of the impact of internet use on scholarly productivity (1998). Variables measuring the nature and level of Internet usage by natural scientists improve the explanatory power of a traditional bibliographic model of scholarly productivity. The data used to construct these variables come from the log files generated by the internal accounting modules of the UNIX operating system. The
effects of Internet usage on productivity are quantifiable, and it is possible to calculate tradeoffs between Internet usage and the more traditional inputs.

Yang S, Needleman H, Niederman R in the study A bibliometric analysis of the pediatric dental literature in MEDLINE (1998), estimated the availability of dental literature between 1989 and 1998 in seven disciplines within pediatric dentistry by using a bibliometric analysis on MEDLINE and to compare the results to that for adolescents and adults. A search strategy was developed for each discipline incorporating dental vocabulary obtained from the MEDLINE Medical Subject Heading (MeSH) index. The conclusion arrived at was that there is a substantial amount of literature in pediatric dentistry upon which to base clinical decisions. Within this large body of literature, there is a significant amount of variation between the various dental disciplines examined.

Macias-Chapula, C.A made a study on AIDS in Haiti: a bibliometric analysis (2000). The purpose of this study was to gain insight into the construction of this literature production. A bibliometric analysis regarding Haitian AIDS research was conducted in the AIDSLINE database for the period 1980 to 1998. An attempt was made to identify the patterns of the growth in AIDS literature, as well as the types of documents published, authorship, institutional affiliations of authors, and subject content. The results indicated that most documents were published in periodicals. The International Conference on AIDS obtained the
highest frequency. The United States, Haiti, and Canada were the main productive countries.

Jacobs, D undertook *A Bibliometric Study Of The Publication Patterns Of Scientists In South Africa 1992-96, With Particular Reference To Status And Funding (2001)* analysed the publication patterns of a selected group of academic and research scientists of ten universities of South Africa for a period of five years, 1992-96. The subject fields surveyed are Physics, Chemistry, Plant and Animal Sciences, and Microbiology/Biochemistry. The general purpose of the study was 1) to determine whether academic status and prestige have any impact on the level of productivity, 2) to study the productivity within different areas of science, 3) to investigate whether or not the level of funding and/or the prospects of getting funded has any influence on the level of productivity in each area of science and their pattern of publication. The study collected two sets of data through a scientometric analysis of science citation index and a questionnaire. The study demonstrated that there is a direct relationship between status and publication productivity. The study further showed that there are significant differences in productivity between areas of sciences but that there is no direct relationship between institutional funding and productivity.

Estabrooks, C. A. Carole A. Winther, Connie. Derksen, Linda made a study on *Mapping the Field: A Bibliometric Analysis of the Research Utilization Literature in Nursing (2002)*. The objective is to map research
utilization as a field of study in nursing using bibliometric methods, and to identify the structure of this scientific community, including the current network of researchers. The method is bibliometric techniques that included a statistical analysis of publication counts, co-word analysis, and co-citation analysis. According to the analysis, tremendous growth has occurred in the field of research utilization. However, the limited amount of collaborative research and the repeated citation of a few references indicate that the field is under-developed. The research utilization field would benefit from more substantive conceptual and empirical work, and more collaboration among emerging scholars.

López-Muñoz, F., Cecilio Alamo, Gabriel Rubio, Pilar García-García Pharm, Belén Martín-Agueda, Eduardo Cuenca in the study Bibliometric analysis of biomedical publications on SSRI during 1980–2000 (2003) performed a bibliometric study of the scientific publications referring to Selective Serotonin Reuptake Inhibitors (SSRIs). The database used was EMBASE: Psychiatry. They applied the principal bibliometric indicators: Price's and Bradford's laws on the increase or dispersion of scientific literature, Lotka's law on the productivity of authors, the Participation Index (PaI) of countries, the Productivity Index (PI) of authors, and the collaboration index. By means of manual coding, documents were classified according to type of study and to the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV) or no psychiatric categories. 3,622 original documents published between 1980
and 2000 were analysed and the results showed non fulfillment of Price's law because production on SSRIs does not grow exponentially. The results of the study show that the SSRIs are not solely antidepressant drugs, but also have a wide range of uses both within the psychiatric sphere (especially in the field of anxiety) and outside it, which explains the considerable scientific production generated in relation to these drugs.

Van Raan, A. F in the paper titled The use of bibliometric analysis in research performance assessment and monitoring of interdisciplinary scientific developments (2003) presents an overview of advanced bibliometric methods for (1) objective and transparent assessment of strengths and weaknesses in research performance, and (2) monitoring interdisciplinary scientific developments. In the first application, focus is on the detailed analysis of research performance in an international comparative perspective. In the second application, monitoring of scientific (basic and applied) developments, recent advances in bibliometric mapping techniques are promising. The potential for unraveling interdisciplinary developments and interfaces between science and technology are discussed briefly.

Falagas, M.E, Paraskevi A Papastamataki and Ioannis A Bliziotis in the study A Bibliometric Analysis of Research Productivity in Parasitology by Different World Regions During a 9-year Period (1995–2003), estimated the research productivity of different world regions in the field of Parasitology. Using
the PubMed database, articles were retrieved from journals included in the "Parasitology" category of the "Journal Citation Reports" database of the Institute for Scientific Information for the period 1995–2003. The study suggested that more help should be provided by the developed nations to developing areas for improvement of the infrastructure of research.

**Ramakrishnan, J** and **Ramesh Babu, B.** in the paper *Literature on hepatitis (1984-2003): A bibliometric Analysis* presented a bibliometric analysis of the literature output in the field of Hepatitis covered in three bibliographic databases namely MEDLINE, CINAHL and IPA. The literature covered in three databases for the period 1984-2003 was considered. The output of the paper with the collaborative research tends to be more in the field of Hepatitis.

**Schneider, Jesper W** in his doctoral dissertation entitled *Verification of Bibliometric Methods’ Applicability for Thesaurus Construction Traced the Development and Exploration of Semi-automatic Thesaurus Construction Approach based on Bibliometric Methods* (2005) made a study to reintroduce, and further extend, the theoretical and methodological aspects of bibliometric methods to the research area of knowledge organization for the purpose of semi-automatic thesaurus construction. The bibliometric methods investigated include document co-citation analysis, citation context analysis, co-word analysis, and bibliometric ageing methods.
Van Raan, A. F  Centre for Science and Technology Studies, Leiden University Leiden (The Netherlands) in their study Fatal attraction: Conceptual and methodological problems in the ranking of universities by bibliometric methods (2005) sketched out a system of input, output, and efficiency indicators with each indicator related to basic research, applied research, and experimental development. This scheme is inspired by empirical innovation economics (represented in Germany, e.g., by H. Grupp) and by advanced bibliometrics and scientometrics (profiled by van Raan and others). After considering strengths and weaknesses of some of the indicators, possible additional entry points' for institutions of information delivery are examined, such contributing to an enrichment of existing indicators.

Camps D, Recuero Y, Samar ME, Avila RE made a study titled Bibliometric Analysis of Doctorate thesis on the health sciences area analyzed the trends in the use of information by dentistry theists and their research topics in Medical Education, Ethics and History (2005). Of a total of 290 doctorate thesis of the Dentistry, Faculty made from 1965 to 2002, were identified: 3 theses on Medical Education and 1 on Ethics. On these, bibliographic quotations from periodic and non periodic publications, as well as quotations from doctorate thesis and congress acts were analyzed. In addition the antiquity of these was analyzed considering a period of five years between the date of accomplishment of the and the one of the used bibliographical quotation. They concluded that the
doctorate thesis represent the highest degree of scientific and academic expression, and constitute a rich and valuable source of data.

**Chiu, W.T., & Ho, Y.-S** made a study on **Bibliometric analysis of homeopathy research during the period of 1991 to 2003 (2005)**. The objective of this study is to conduct a bibliometric analysis of all homeopathy-related publications in *Science Citation Index* (SCI). A systematic search was performed using the SCI for publications during the period of 1991 to 2003. The top three ranking countries of publication were the UK, the US, and Germany, the US dominated citation followed by the UK, and then Germany. In addition, a simulation model was applied to describe the relationship between the cumulative number of citations and the paper life.

**Vergidis, P., Karavasiou, A., Paraschakis, K., Bliziotis, I., & Falagas, M** in their study **Bibliometric analysis of global trends for research productivity in Microbiology (2005)** conducted a bibliometric analysis, estimating the quantity and quality of worldwide research production in the field of microbiology, period 1995–2003 using the PubMed and Journal Citation Reports databases. By searching the “microbiology” category of the Journal Citation Reports database, a total of 74 journals were identified that were also included in Pub Med. From these journals, a total of 89,527 articles were identified for analysis, and data on the country in which the research originated was available for 88,456 (98.8%) of them. The individual countries were separated
into nine world regions. In terms of research production for the period studied, Western Europe exceeded all other world regions, with the USA ranking second. The mean impact factor was highest for the USA at 3.4, while it was 2.8 for Western Europe and 2.4 for the rest of the world combined. The research productivity per unit of expenditure for research and development was higher for Canada and Western Europe than for the USA. The three regions in which research productivity increased the most were Asia, Latin America, and Eastern Europe.

Falagas, M. E., Michalopoulos, A. S., Bliziotis, I. A., & Soteriades, E. S in their study A bibliometric analysis by geographic area of published research in several biomedical fields, 1995–2003 (2006), summarized the findings of several studies of them to compare the quantity and quality of published research from around the world for the years 1995 to 2003. They evaluated the number of articles published and their mean journal impact factor. They also studied the research productivity of various areas adjusted for gross domestic product (GDP) and population. They found that Western Europe leads the world in published research on infectious diseases–microbiology (82 342 articles [38.8%]) and in cardiopulmonary medicine (67 783 articles [39.5%]), whereas the United States ranks first in the fields of preventive medicine, public health and epidemiology both in quantity (23 918 articles [49.1%]) and quality of published papers.
However, after adjustments for GDP, Canada ranked first, with the United States and Oceania following closely behind.

Falagas, M. E., Karavasiou, A. I., & Bliziotis, I. A made a study A Bibliometric Analysis of Global Trends of Research Productivity in Tropical Medicine (2006). They estimated the contribution of different world regions to research published in the main journals of tropical medicine. Using the PubMed and the Institute for Scientific Information (ISI) “Web of Science” databases, articles were retrieved from 12 journals. The analysis suggested that the developing areas of the world produce a considerable amount of research in tropical medicine; however, given the specific geographic distribution of tropical diseases they probably still need help by the developed nations to produce more research in this field.

Patra, S. K., & Chand, P worked under the title Library and Information Science Research in India: A Bibliometric Study (2006). The work presented a bibliometric study of library and information science research literature emanating from India based on the data abstracted in Library and Information Science Abstracts (LISA). Standard bibliometric techniques were employed to analyse the collected data and accordingly get indicators. Bradford’s law was applied to identify core journals of library and information science wherein Indian authors publish their research output. To understand the productivity pattern of authors, Lotka’s Law of scattering was used to applied. The
identified core journals were mostly published from India. Indian authors’
contribution in international journals was very low. A list of authors who had
published 10 and more papers during 1967 – 2004 was drawn and presented. Such
authors were less in number and authors with single publication had major share.
The authors’ productivity pattern was conformity to Lotka’s law.

Jarneving, B made a study The Combined Application of Bibliographic
Coupling and the Complete Link Cluster Method in Bibliometric Science
Mapping (2006). A method was suggested for science mapping purposes and
evaluated. The suggestion of this method was motivated by the fact that the
prevailing method of citation based science mapping of documents, the co citation
cluster analytical method, cannot map the most current published research, a
feature that is a characteristic of the proposed method. The proposed method has
two primary components: (1) a measure of document similarity, bibliographic
coupling and (2) a cluster analytical method for the partition of document
populations, the complete link cluster method. Methods of evaluation comprised
quantitative approaches as well as more qualitative ones. For the establishment of
cluster coherence, measures of density and average coupling strength in clusters
were applied. The conclusion was that the proposed method may be
complementary to the co citation cluster analytical method and to traditional
citation indexing. Based on the empirical findings, a tentative outline for such an
application was given.
Crawley-Low, J made a **Bibliometric analysis of the American Journal of Veterinary Research to Produce a List of Core Veterinary Medicine Journals (2006)**. Bibliometric techniques were used to analyze the citation patterns of researchers publishing in the American Journal of Veterinary Research (AJVR). More than 25,000 bibliographic references appearing in the AJVR from 2001 to 2003 were examined for material type, date of publication, and frequency of journals cited. Journal titles were ranked in decreasing order of productivity to create a core list of journals most frequently used by veterinary medical researchers. The study provided the result that a core collection of veterinary medicine journals would include 49 veterinary medicine journals from zones 1 and 2. Libraries supporting a veterinary curriculum or veterinary research should also include veterinary medical journals from Zone 3, as well as provide access to journals in non-veterinary subjects such as biochemistry, virology, orthopedics, and surgery and a selection of general science and medical journals.

Ho, Y.S Department of Environmental Sciences, College of Environmental Sciences, Peking University, Beijing, 100871, People’s Republic of China made a study on **Bibliometric Analysis of Adsorption Technology in Environmental Science (2007)**. A bibliometric analysis based on Journal Citation Reports (JCR) published by the Institute of Scientific Information (ISI) was carried out on adsorption-related studies published in any ISI subject category of environmental sciences from 1995 through 2004. The results revealed that yearly production of
adsorption-related scientific articles increased steadily over the investigation period. The United States produced 49% of all pertinent articles, followed by Germany with 11%, and UK and France with 9% respectively. English was the dominant language. About 25% each of all articles had 2, 3, or 4 authors; the average number was 3.4 authors per article, and the maximum was 25 authors on one article. An analysis of international collaborations was provided. Summaries of the most prolific first and corresponding authors, the most frequently used keywords, and the most frequently cited articles were presented. Environmental Science & Technology, which had one of the highest impact factors in the field of environmental science journals, and contained the most adsorption related manuscripts, published 7 of the 10 most frequently cited articles.

Vijay, K., & Raghavan, I carried out a study on Journal of Food Science and Technology: A bibliometric study (2007). Bibliometric analysis of 779 articles published, along with citations in five volumes 37(2000) to 41(2004) had been carried out. A similar study was also carried out for the maiden volume of the same journal for the year 1964. The number of contributions and their distribution in different volumes, authorship pattern, foreign and Indian authored contributions, institution wise contribution, citations, types of publications cited, geographical distribution of contributions national and International as well as physical growth of the journal had been studied. Results indicated an increase in the number of contributions in successive volumes with India being the major
contributor both in the maiden volume as well as in the five volumes studied. The highest number of contributions was by the joint authors (two). The growth and popularity of the journal was showing a steady upward trend, though contributions from the developed nations form only 15% of the total.

Khare, S. K., Thapa, N., & Sahoo, K in the article Internet as a source of information: A survey of Ph.D Scholars (2007) attempted to report the findings of a survey conducted to study the pattern of Internet use; satisfaction with the search results and the Internet services; and reasons of non-use of Internet by the Ph.D. scholars of Dr. H.S. Gour University, Sagar, M.P. The findings showed that the rate of Internet use was more in research scholars of Science, Life Sciences, Engineering, Technology and Management faculties as compared to the faculties of Arts, Social Sciences, Law, Education and Commerce. Among the non-users of Internet, the number of female research scholars was more as compared to male. The research scholars used Internet for research purpose, entertainment as well as for job search.

Chiu, W.-T., & Ho, Y.-S in their study Bibliometric Analysis of Tsunami Research (2007) performed a bibliometric analysis of all tsunami-related publications in the Science Citation Index (SCI). Analyzed parameters included document type, language of publication, publication output, authorship, publication patterns, distribution of subject category, distribution of author keywords, country of publication, most-frequently cited article, and document
distribution after the Indonesia tsunami. The tsunami publication patterns in the first 8 months after the Indonesia tsunami occurred on 26 December 2004 indicated a high percentage of non-article publications and more documents being published in journals with higher impact factors.

Xie, S., Zhang, J., & Ho, Y.S in their study *Assessment of world aerosol research trends by bibliometric analysis* (2008) explored a bibliometric approach to quantitatively assessing current research trends on atmospheric aerosol, using the related literature in the Science Citation Index (SCI) database from 1991 to 2006. Articles were concentrated on the analysis by scientific output, research performances by individuals, institutes and countries, and trends by the frequency of keywords used. The decreasing share of world total and independent articles by the seven major industrialized countries (G7) was examined.

Podsakoff, P. M., MacKenzie, S. B., Podsakoff, N. P., & Bachrach, D. G Philip M. made a study on *Scholarly Influence in the Field of Management: A Bibliometric Analysis of the Determinants of University and Author Impact in the Management Literature in the Past Quarter Century* (2008). The purpose of this study was to identify the universities and research scholars who have had the greatest impact on the field of management during the past quarter century and the factors that influence their impact. Using bibliometric techniques, the authors examined 30 management journals to identify the 100 most-cited universities and 150 most-cited authors from 1981 to 2004. The analysis included
more than 1,600 universities and 25,000 management scholars across five individual time periods. The findings showed that (a) a relatively small proportion of universities and scholars accounted for the majority of the citations in the field; (b) total publications accounted for the majority of the variance in university citations; (c) university size, the number of PhDs awarded, research expenditures, and endowment assets had the biggest impact on university publications; and (d) total publications, years in the field, graduate school reputation, and editorial board memberships had the biggest effect on a scholar's citations.

Hendrix, D in the study An Analysis of bibliometric indicators, National Institutes of Health funding, and faculty size at Association of American Medical Colleges medical schools, 1997–2007(2008) analysed the bibliometric data from ISI, National Institutes of Health (NIH)–funding data, and faculty size information for Association of American Medical Colleges (AAMC) member schools during 1997 to 2007 to assess research productivity and impact. This study gathered and synthesized 10 metrics for almost all AAMC medical schools. Using principal components analysis, the author calculated the relationships between measures, if they existed. This study provided statistics that could be used in conjunction with other sound methodologies to provide a more authentic view of a medical school's research. The large variance of the collected data suggested that refining bibliometric data by discipline, peer groups, or journal information might provide a more precise assessment.
Sevukan, R., & Sharma, J in their work *Bibliometric Analysis of Research Output of Biotechnology Faculties in Some Indian Central Universities (2008)* presented a detailed analysis of research performance of biotechnology faculties in central universities of India from 1997-2006. Bibliometric techniques had been employed to analyse the data. The result was that the contribution to the literature on the subject from the universities had been steadily growing. When the author productivity was calculated it was found that 66.72 per cent authors contribute one article and that 11 authors (1.79 per cent) contribute more than 10 articles. Lotka’s law was tested and found to fit the data. The data did not fit into Bradford’s law regarding the core journals. The articles contributed by the Faculties appeared in journals published from 16 different countries with a maximum from the Netherlands followed by US. Only 0.32 per cent articles were published from India.

Fayland, M. J in the work *Mapping the Literature: A Bibliometric Analysis of Evidence Based Practice Literature in English Language Nursing Journals (2008)* obtained the bibliographic data using OVID interface for the CINAHL database. The search was limited to core nursing journals published between 1990-2005 using 22 keywords. All titles and abstracts were reviewed to find the number of times the phrase evidence-based occurred with each of the keywords. Findings indicated a strong growth rate in publications and references over time but a lack of collaborative effort among nurses.
Uthman, O. A made a study on HIV/AIDS in Nigeria: A Bibliometric Analysis (2008) to identify the patterns of the growth in HIV/AIDS literature, as well as type of document published, authorship, institutional affiliations of authors, and subject content. With the result there was need to challenge the status, scientists from Nigeria should forge multiple collaborations beyond historical, political, and cultural lines to share knowledge and expertise on HIV/AIDS.

Tian, Y., Wen, C., & Hong, S made study on Global scientific production on GIS research by bibliometric analysis from 1997 to 2006 by (2008). A bibliometric analysis was applied in this work to evaluate global scientific production of geographic information system (GIS) papers from 1997 to 2006 in any journal of all the subject categories of the Science Citation Index compiled by Institute for Scientific Information (ISI), Philadelphia, USA. Bibliometric methods could quantitatively characterize the development of global scientific production in a specific research field.

Ziegler, B. E Department of Electrical Engineering and Computer Science made a study titled Methods for Bibliometric Analysis of Research: Renewable Energy Case Study (2009). This paper presents methods and software implementation for analyzing a field of research through the use of bibliometrics, i.e., information about published journal articles. Online publication search engines are queried, and their search results are extracted and analyzed, to help
inform a researcher of the state of his or her field. The methodology consists of three components: extraction of terms relevant to the research field, analysis of the growth in prevalence of these terms over time, and identification of interrelationships among these terms using a technique known as Latent Semantic Analysis.

Lee, C. S in *Bibliometric Analysis of the Korean Journal of Parasitology: Measured from SCI, PubMed, Scopus, and Synapse Databases* (2009) assessed the contributions and achievements of the KJP, conducted bibliometric analysis on the citation data retrieved from 4 major databases; SCI, PubMed, Synapse, and Scopus. It was found that the KJP articles were constantly cited by the articles published in major international journals represented in these databases. It identified many papers published in the 1960s and in the 1980s which had been cited heavily, proving the central role of the KJP in the dissemination of the important research findings over the last 5 decades.

Padma, P in her doctoral thesis carried out a *Scientometric analysis of the research performance of the Madurai Kamaraj University* (2009) to quantify the Ph.D output from the 18 schools of the Madurai Kamaraj University. The study took in to account all Ph.D awards and publications output in National, International Journals and Books from the 18 Schools from 1987 to 2005. The data was collected from the Department registers, Annual Reports and Convocation
Reports. The findings revealed the nature and growth of research performance of the University.

Patil, S in his paper Herald of Library Science: A Bibliometric Study (2010) examined the articles published in Herald of Library Science for authorship pattern, degree of collaboration and geographical distribution of papers. The study carried out for this paper found that majority of papers were single authored. The degree of collaboration was found to be 0.30. The geographical distribution revealed that the contribution by Andhra Pradesh is the highest in India while Nigeria is at top in case of Foreign Countries.

Della Mea, V carried out a study on 25 Years of Telepathology Research: a Bibliometric Analysis(2011). A query has been developed to extract papers related to telepathology and virtual microscopy, and it has been then submitted to Pubmed by means of Entrez Utilities functions. Results obtained in XML have been processed through ad-hoc developed PHP scripts, in order to extract data on Authors, countries, and keywords. Research in traditional telepathology, after a peak in 2000, showed some decline until virtual microscopy became mainstream, topic that currently pushes research again. The low number of clinical trials calls for more randomized studies in telepathology, to enable evidence-based application.
Thanuskodi, S in his work titled *Library Herald Journal: A Bibliometric Study (2011)* presented a bibliometric analysis of the journal titled “Library Herald” for the period between 2006 to 2010. The analysis covered 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. All the studies pointed towards the merits and weakness of the journal which would be helpful for its further development. The result showed that out of 138 articles single author contributed 72 (52.17%) articles while the rest 66 (47.83%) articles were contributed by joint authors. The study revealed that most of the contributions are from India with 89.85 per cent and the rest 10.15 per cent only from foreign sources.

Thanuskodi, S in his work *Bibliometric Analysis of the Indian Journal of Chemistry (2011)* made an analysis of articles published in Indian Journal of Chemistry, to identify the number of contributions published during the period of study, study the authorship pattern, identify geographical distribution of articles, study the length of articles and to find out the number of cited documents and the average number of references per article. Methodology applied in the present study was bibliometric analysis which was used to study in detail the bibliographic features of the articles and citation analysis of reference appended at the end of each article, published in journal of chemistry from 2005-2009. The study revealed that majority of the authors preferred journals as the source of
information providing the highest number of citations (45.23%). The maximum number of contributions had the length of 5-8 pages with 38.20 per cent.

Hussain, A., Fatima, N., & Kumar, D in the study Bibliometric Analysis of the 'Electronic Library' Journal (2000-2010) (2011) aimed to present a bibliometric analysis of the Electronic Library journal, the aim being to offer a summary of research activity in library and information science and characterize its most important aspects. The paper analysed a bibliometric study of 578 articles published during the period January 1, 2000 to December 31, 2010 in the Electronic Library journal. The paper covered the bibliometric analyses of year-wise distribution of articles, category-wise classification of papers, subject-wise distribution of articles, authorship patterns, and institutions-wise distribution of contributions. Special issues of the Electronic Library brought out during 2000-2010, and prolific authors during 2000 to 2010 had been analysed.

The methodology applied was bibliometric scrutiny, which was used to analyse in detail the bibliographic attributes of the articles published in the Electronic Library journal from 2000-2010. Eleven volumes (Vol. 18 to 28) containing sixty-six issues of the Electronic Library had been taken up for the study. The authors have extracted the information from the Electronic Library journal website published by Emerald Group of Publishing and then used MS Excel to organize, tabulate and analyze the data for the study. The study revealed that the categories of article distributions were remarkable in this
research journal. The majority of the articles were contributed by single authors; and most authors were librarians, faculty members or researchers affiliated with academic or research institutions. The Electronic Library is notably a scholarly journal that stipulates or induces fruitful research for the library and information profession.

Coronado, R. A., Riddle, D. L., Wurtzel, W. A., & George, S. Z carried out a study on Bibliometric analysis of articles published from 1980 to 2009 in Physical Therapy, journal of the American Physical Therapy Association (2011). The purpose of this study was to conduct a comprehensive bibliometric assessment of Physical Therapy (PTJ) over the past 30 years to examine trends for all types of studies. All manuscripts published in PTJ from 1980 to 2009 were reviewed. Research reports, topical reviews (including perspectives and nonsystematic reviews), and case reports were included. Articles were coded based on type, participant characteristics, physical therapy focus, research design, and purpose of article, clinical condition, and intervention. Coding was performed by 2 independent reviewers, and author, institution, and citation information was obtained using bibliometric software. Quality assessment of articles was not performed. These trends provided an indirect indication of the evolution of the physical therapy profession through the publication record in PTJ. Collectively, the data indicated an increased emphasis on publishing articles consistent with evidence-based practice and clinically based research. Bibliometric analyses
indicated the most frequent citations were metric studies and references in PTJ were from journals from a variety of disciplines.

**Dong, B., Xu, G., Luo, X., Cai, Y., & Gao, W.** made a study *A bibliometric analysis of solar power research from 1991 to 2010* (2012). A bibliometric analysis was performed on solar power-related research between 1991 and 2010 in journals of all the subject categories of the Science Citation Index. “Solar cell”, “solar energy”, “solar power”, “solar radiation” and “solar thermal” were selected as keywords to search in a part of the title, abstract or keywords. The trends were analyzed with the retrieved results in the publication type and language, characters of scientific output, publication distribution by countries, subject categories and journals, and the frequency of title-words and keywords used. The output showed that articles on solar power showed a significant growth along with more participation of countries, while the percentage of international papers reduced and concluded that the materials of solar cells would be the emphasis of solar power research in the twenty-first century.

**Hammarfelt, B.** on *Following the Footnotes: A Bibliometric Analysis of Citation Patterns in Literary Studies* (2012) provides an in-depth study of the possibilities of applying bibliometric methods to the research field of literary studies. The thesis focuses on different aspects of references and citations in literary studies: from the use of references in the text to citation patterns among 34 literature journals. A study is also made of the influence of one single publication—Walter Benjamin’s Illuminations—and its impact in literary studies.
and in wider academia. The results from the four articles are elaborated upon using a theoretical framework that focuses on differences in the social and intellectual organization of research fields. The thesis emphasizes that bibliometric studies of research fields in the humanities need to incorporate non-English and non-journal publications in order to produce valid and fair results. Moreover, bibliometric methods must be modified in accordance with the organization of research in a particular field, and differences in referencing practices and citation patterns ought to be considered.

Pizzani, L., Lopes, J. d. F., Manzini, M. G., & Martinez, C. M. S made a Bibliometric analysis of theses and dissertations on prematurity in the Capes database(2012). The objective was to perform a bibliometric analysis of theses and dissertations on prematurity in the Capes database from 1987 to 2009. The methodology adopted was a descriptive study that used the bibliometric approach for the production of indicators of scientific production. Operationally, the methodology was developed in four steps: 1) construction of the theoretical framework; 2) data collection sourced from the abstracts of theses and dissertations available in the Capes Thesis Database which presented the issue of prematurity in the period 1987 to 2009; 3) organization, processing and construction of bibliometric indicators; 4) analysis and interpretation of results. They concluded that there is a qualified, diverse and substantial scientific literature on prematurity developed in various graduate programs of higher education institutions in Brazil.