CHAPTER V
SUMMARY AND CONCLUSION

5.1 Summary

Bibliographic techniques have many applications. We can set up statistical models belonging to the flow of scholarly communications. All this requires use of references made to other documents. Just to quote an example, we can map relationships using citations. These relationships could be between documents, or between scholarly communications. Clustering it, we can identify the flow of topics, within a discipline as well as among disciplines.

For careful evaluation of periodical literature we need to provide an entire picture of the core publications of any subject. This can be accomplished by bibliometric study. For this reason LIS researchers consistently go for bibliometric study to assess and evaluate scientific yield of the published information on any specific subject.

In selection and weeding policies, librarians find bibliometric studies are immensely useful. It comes as a handy tool when the academic community wishes to recognize most famous authors and potential publications.

Additionally, citation aids in fixing the journals that are highly cited, helps in ranking of authors producing more works, succours in understanding authors' productive pattern, enables in deciding journal impact factor and other important details of any specific literature under study.

Researchers have conducted bibliometric studies on scientific fields-related journals. The basis of these studies lies in metadata elements like subject, citations, title, author, etc. An analysis of this type offers helpful indicators that throw light on scientific productivity, its trend.

They also show the emphasis with which research is done in different areas and what were the preferences for research in order to get it published. Categorization and assessment of publication patterns quantitatively besides organization are the things that bibliometrics typically take into consideration. It also offers an analysis of macro communication.

We can analyze various aspects of written document by undertaking bibliometric study. It is a quantitative method for such analysis. Libraries and
informatics centers all over the world are using bibliometric study, which has been growing for a long time. Bibliometrics has also caught the fancy of research scholars as they are interested in research and through bibliometrics they can find out the utility of their contribution through citations. Current trends are major vehicle for reporting the significant research finding.

Bibliometric study is playing key role in research work because it gives latest knowledge regarding current advancements in any field of knowledge. When we undertake bibliometric studies, they reveal the nature of the information used by researchers.

This assessment is vital to the librarian as it enables them to plan for better collection development and better information services. This way, bibliometrics represents a kind of research methodology.

It is a fast-growing field of research. The researcher utilizes quantitative analysis and statistics in their bibliometric study to describe how the publication pattern was for a specific collection of literature.

The impact of a solo writer can be ascertained with the help of bibliometric processes of evaluation. As also the relation between multiple authors or their works. Bibliometrics is chiefly derived from publication and citation counts, co-citation and co-word analysis, scientific mapping and citations in patents.

Periodicals are the primary source of information and an important media for communication, reflecting forcefully the new trends that emerge in any discipline. They have a huge role to play in the communication of current research findings and also publishing articles that contained the latest trends in different areas of knowledge.

Human communication can be measured by way of collecting, counting, analyzing and interpreting citations using bibliometric study. This way, it helps doubly—in the recognition of important sources of information and also in the organization, planning of resource sharing, consortium, networking.

This explains why, in library and information science, bibliometrics is fast emerging as a medium of research.

We use bibliometric techniques for a number of purposes. Some of them are used for ascertaining different scientific indicators or for evaluating
scientific results, or for selecting journals for libraries. Information research cannot distance itself from bibliometrics analysis, which has become a well established part of it.

Literature is not only growing but also taking different forms at a speed which a librarian or an information worker finds difficult to keep pace with despite being equipped with traditional bibliometric methods and skills. Bibliometrics has grown out of this realization. This has been due to the adoption of bibliometric techniques is different areas of study.

This researcher was interested in analyzing the typical qualities of literature the researchers use in the concerned area of research. This inspired her to undertake the research with a view to facilitating in the selection of core journals and other sources for scientists and librarians.

To put it simply, bibliometrics studies that mathematical and statistical method which is used to investigate and quantify written documents. Bibliometric studies rely on analyzing existing documents such as book, reports, theses and dissertations, published articles, among other.

The goal of bibliometric analysis is to assess trends on a given subject or area of study, identify main theory, more prolific scholars or institutions. Bibliometric studies aim at detecting the intellectual networks binding scholars to make some sense and organize the extant literature.

The review of literature was conducted of bibliometrics, scientometrics, webometrics, and citation analysis, etc. A thorough study was conducted of all the articles related to subject.

The study analyzes the scholarly communication of Indian Journal of Traditional Knowledge from 2005 – 2014. Taking into account the objectives, the researcher collected 19,258 journal citation. They were gathered from 1068 articles which were carried in Indian Journal of Traditional Knowledge by NISCAIR in 2002 during the period of study.

It publishes papers in various subjects mentioned earlier. It is a quarterly publication that covers on an average 4 issues on traditional knowledge in a year.

Appended at the end of each article, the citations, excluding those which were in the form of books, theses, articles and different sections of law, were photocopied. Thus, only those citations which were appended to
scholarly journal articles were considered for analysis. For authorship pattern examination and geographical distribution about contributing authors, content pages of all the articles were also photocopied. This data, thus collected, was administered to MS Excel worksheet for processing and analyzing.

The study of Indian Journal of Traditional Knowledge (IJTK) was undertaken to study the types of documents, year-wise distribution articles and citations, authorship pattern, Ranking of journals, Bradford's law etc.

**Trends**
- The trend shows that journals are highly preferred source of documents.
- Authorship trend shows that authors prefer to write individually.
- National level published literature is highly preferred compared to international literature.
- Year wise distribution shows that current published articles are highly preferred.
- Subject wise distribution shows that botany is the only in which highest research work is carried out.
- Bradford law shows that only 2 journals form the nucleus.

The trend shows that though the subject is traditional that the information seeking behaviour is updated.

**Statement of Problem:**

This study has been initiated to study the citation pattern in the Indian Journal of Traditional knowledge (IJTK). The present study titled, “Research Trends in Indian Journal of Traditional knowledge: A bibliometric study.” was undertaken because no such study was conducted in past.

**Objectives of the Study:**
- To study the research publication growth in IJTK.
- To study the information seeking behavior of authors.
- To study the collaborative research network in Traditional Knowledge.
- To test the application of Bradford's law in Journal of Traditional Knowledge.
- To recognize the core journals & publication in Traditional Knowledge.
- To study the contribution of authors in Traditional Knowledge.
- To study Traditional Knowledge Right issues’ trend in India.
• To study the obsolescence and literature's half life period in Traditional Knowledge.
• To study the geographical distribution of citation.

**Significance of the study:**
• This study is helpful to librarians to develop the collection.
• This study is helpful to researches to know the prominent journals in Traditional knowledge.
• This study is helpful to know the research done in different fields of Bibliometric and scientometric.
• The study is helpful to develop new research parameters.
• The study is helpful to know research in IJTK.

**Hypotheses:**

The researcher hypothesized that,
• It was hypothesized that journals are preferred source of information of authors of Indian Journal of Traditional knowledge.
• It was hypothesized that current sources are highly preferred by the authors.
• It was hypothesized that online journals, e-books are highly preferred by IJTK.
• It was hypothesized that classics books are highly preferred by IJTK.

**Scope of the Study:**

Author citation, subject citation, journal citation, etc., may be the causes of undertaking a Bibliometric study. Researchers have carried out various analytical studies in not so distant past, leading to the development of a very important branch of study, called "citation analysis".

Citation analysis concerns analysis of citations or bibliographical references that are found appended to the research communication. It can dig out information of utility like the authorship pattern in different disciplines, the relative use of different kinds of document, such as books, periodicals, reports, theses, patents, standards, etc. The acceptance a document gets from another document is called Reference. It implies a relation between the cited documents and citing documents, in part or full.

Thus, citations are references which are appended at the end of scholarly papers to the articles previously published. That there is a relationship between two papers is indicated by the very fact that work is cited in a paper. In other words, If an author cites a reference in his paper, it means
that there is a strong possibility of his own paper having a relation to it. So, there is a need to study Research Trends in Indian Journal of Traditional Knowledge: A Bibliometric Study Published during 2005 to 2014.

Review of literature:

This chapter presents a review of such studies which includes the following themes. Bibliometrics, Scientometric, Librarmetry, Informetrics, Visibility Index, Self Citations rate, Core periodicals studies.

Methodology of Research:

The present study is concerned with the sources referred to in Articles, published in IJTK during the period 2005 to 2014 and analysis of bibliographical unit which includes the footnotes and bibliographical references appended to the articles. In this study, following methods have been adopted to collect the data.

In this process, the researcher has counted as a one citation every citation made. The occurrence of the same reference again has been treated as a separate reference and counted accordingly for the study. The researcher arranged all the citations with decreasing rank of bibliographic forms. It helps to understand the references appended to the articles in journals. The data collected this way has been analysis on the basis of the objectives of the study.

The analysis has been done with the help of computer software, MS-EXCEL. It has been presented in a tabular form. Wherever necessary, graphs, charts and tables have been presented. Based on the aggregate of citations affixed to the thesis, the analysis has been carried out. Comparison of the results is thus facilitated and also better insight into the literature-used pattern in different disciplines is enabled by this. The following subsections describe the methodology employed for the analysis of citations:

The researcher has based the present study primarily on the analysis of bibliographic units, which include the footnotes and the bibliographic references. The information on foot notes cited in the text and the data on the bibliographic entries, listed only at the end of each article, was collected and their form, place of publication and year of appearance was noted. A database of citations was prepared in Microsoft Excel and a program was used for the statistical analysis.
Logical, systematic planning and direction of a piece of research is called a research design. Research procedure is the most essential thing for any research work. Source of data, collection of data assume importance.

**Tools for Data Collection:**

In the study, separate sheets were used to scan, check, examine and tabulate each individual article for necessary data. Not only this, even using computer, the references affixed by the concerned authors were also scanned, counted and tabulated, where excel sheet is used to enter different elements like volume, issue number, author, source document, place, year etc. It was done at the same time.

At the end, the entire data collected was compiled, recorded and analyzed after tabulation. This was done to record findings. Citation analysis technique was used and statistical software like MS-Excel was employed.

Citing articles and cited references collected from *Journals of Traditional Knowledge* for the period 2005 to 2014 for the basis of this study.

**Conclusions:**

In the period of increasing subscription costs and tight library budgets, it is a difficult task to manage journals in libraries. For varied reasons small and medium size libraries face difficulty in maintaining relevent collection of journals, thereby necessitating the evaluation of collection.

Many quantitative and qualitative parameters have to be considered for proper measurement of a library collection. As direct evaluation is not always achievable, the librarians who understand that the level of use of collection is one of the most vital paramenters, use bibliometric methods to get an approximation of the use of the collection.
The major findings of the present study are shown below:

**Volume wise Distribution of Research Articles**

Table 4.1.1 exhibits aggregate articles published in the Indian Journals of Traditional Knowledge. Total 10 volumes and 40 issues were published from 2005 - 2014. It is seen that an aggregate of 1068 articles were published during the span of study. Out of these, 139 (13.01%) articles were published only in the 2010. It is the highest publication year during the study.

In this study, only 67 (6.27%) articles were published in year 2005, 106 (9.92%) in 2006, 110 (10.30%) in 2007, 117 (10.96%) in 2008, 114 (10.67%) in 2009, 139 (13.01%) in 2010, 112 (10.49%) in 2011, 106 (9.93%) in 2012, 101 (9.46%) in 2013, 96 (8.99%) in 2014 respectively. It meant that productivity of articles in the journal of Traditional Knowledge is increase 2005 to 2014.

**Authorship Pattern of Research Articles**

Table 4.1.2 shows the authorship pattern. The largest number of articles (338) was two-authored (31.65%), followed by single-authored articles 118 (11.05%), three-authored articles 290 (27.15%), four-authored articles 169 (15.82%) and multiple-authored articles with 153 (14.33%) of the total articles.

**Length of Articles (Study of Citations)**

Table 4.1.3 shows the length of the articles. A majority of 389 (36.42%) articles are shown to have a length of 10-19 pages, followed by 302 with 01-09 pages, 222 (20.79%) with 20-29 pages, 85 (7.96%) articles with 30-39 pages, 32 (3.00%) articles with 40-49 pages, 14 (1.31%) articles with 50-59 pages, 07 (0.66%) articles with 60-69 pages, 07 (0.65%) articles with more pages. 06 (0.56%) articles with 70-79 pages, 04 (0.37%) articles have a length of NIL pages.

**Year-wise Authorship Pattern**

The table 4.1.4 reveals that a single author shared 118 (11.05%) while the remaining 950 (88.95%) came through joint authorship. There were total 1068 articles.
Subject-wise Distribution of Research Articles

The Table 4.1.5 shows subject-wise distribution of research articles. It shows write-ups from Botany are more preferred by researcher 264 (24.72%) followed by Pharmacy 160 (14.98%), Ayurveda 107 (10.02%), Environmental Science 74 (6.93%), Medical Science 52 (4.87%), Zoology 40 (3.75%), Home Science 37 (3.46%), Food Science 37 (3.46%), Fishery 36 (3.37%), Agriculture Science 25 (2.34%), and other subject had less than 2% citations. The reason for the articles more from the Botany due the bibliographic articles found in Botany subject.

Length of Articles

The table 4.1.6 shows the average length of articles and the total pages. The table shows the average length of 620.5 pages per paper. The table further shows a variance in the average length of articles from the lowest 39.23 to the highest 72.56 pages.

Average length of articles

Table 4.1.7 indicates how many pages the contributions had. Out of 1068 contributions, 520 contributions (48.69%) have page length of 1-5 pages, 479 contributions (44.85%) have page length of 6-10 pages, 57 contributions (5.34%) have page length of 11-15 pages, 9 contributions (0.84%) have page length of 16-20 pages, 2 contributions (0.1%) have page length of 21-25 pages, 1 contributions (0.09%) have page length of 26-30 pages.

Rank List of Authors of Research Articles

Table 4.1.8 reveals that the rank list of authors which were most frequently referred as research article. It was found from above table that; Ranjay k Singh’s position was on top of the rank followed by Pravin S Kawtikawar, Promila Kanwar, Anamika Singh and Anita Jain. 9 authors contributed the six articles; 25 authors contributed the five articles; 26 authors contributed the four articles; 108 authors contributed the three articles; 71 authors two articles each while 257 one article each in research article.

Year-wise Distribution Table of Citations

The tables 4.2.1 and 4.2.2 show that maximum number of citations, 2481 (12.88%), were produced in 2014, followed by 2360 (12.25%) citations in 2010, 2306 (11.97%) citations in 2012, 2203 (11.44%) citations in 2011,
2029 (10.54%) citations in 2013, 1937 (10.06%) citations in 2009, 1750 (9.09%) citations in 2008, 1731 (8.99%) citations in 2007, 1673 (8.69%) citations in 2006 and 788 (4.09%) in the year 2005.

**Bibliographic Form Wise Distribution of Citations**

From the tables 4.2.3 and 4.2.4 it is clearly found that in the citation almost 10000 (51.93%) share is of Journals followed by Books 5286 (27.45%). Apart from these sources has least citation as follows: Review 1600 (8.31%), Reference Book 1420 (7.37%), Internet 380 (1.97%), Report 304 (1.58%), Thesis/Dissertations 108 (0.56%), Conference Proceedings 100 (0.52%), News Papers 60 (0.31%)

This may be because the journals and books were easily accessible and contain the benefited research work. Due to the ease in accessing the source, the source, Internet is becoming increasingly popular.

**Country-wise Distribution of Citations**

Tables 4.2.5 and 4.2.6 gives country-wise distribution of citations in Traditional Knowledge. Here, the analysis of citations has been done according to their country of origin. 12878 (66.87%) of the citations are from India. Followed by U.S.A. 1566 (8.13%), U.K. 1314 (6.82%), Pakistan 462 (2.4%), Canada 240 (1.24%), New Zealand 234 (1.21%). Followed by Island, Nepal, Bangladesh, Paris, Italy, Nigeria, Australia and England.

**Year-wise Distribution of Citations (Publication Year wise)**

The chronological distributions of the Journal citations are presented in Tables 4.2.7 and 4.2.8. It is ascertained that 6.30% of citations are used in the last five years i.e. from 2010-2014 followed by 15.84% of citations are used during 2005-2009. This shows that 22.14% of the total citations are used for the first ten years.

Clearly indicates that recently published articles are cited more and it is learnt that traditional Knowledge prefers current information for their research activities.

**State-wise Distribution of Citations**

Tables 4.2.9 and 4.2.10 give the State-wise distribution of contributions in the 10 volumes of the journal. Out of 12878 contributions, the maximum, i.e., 3305, (25.67%) has been contributed by authors from New Delhi,
followed by Assam 1030 (8.99%), and the minimum, i.e., 5 (0.4%) by authors from Udaipur.

**Publisher wise Distribution of Citations**

Tables 4.2.11 and 4.2.12 gives Publisher wise distribution of citations in Traditional Knowledge. Here the citations are analysed according to their publisher Chukhamba Bharati Academy 1070 (5.56%), Followed by Bombay popular prakashan 987 (5.13%), Scientific Publishers 987 (5.13%), Deep publishers 735(3.82%), Bishen Sing mahendra palseing 672(3.49%), Matba Munshi Navel Kishor 630(3.27%), Concept publishing co. 525 (2.73%), Oxford & IBH publication 420 (2.18%) and lowest number i. e. Chaukhamba Sanskrit Academy 21 (0.11%).

**Authorship Pattern of Citations**

Table 4.2.13 and 4.2.14 It was apparent from the information that single authored citations ranked highest 11479 (59.61 %) followed by two authored 4584 (23.80 %) three authored 2025 (10.51 %) and 762 (3.96 %) more than three authors. The analysis also reveals institutional authorship of 408 (2.12 %) citations. Single authored trend dominates throughout journal citations.

**Subject-wise Distribution of Citations**

The Tables 4.2.15 and 4.2.16 show citation from Botany were more preferred by researcher (24.68%) followed by Pharmacy (14.95%), Ayurveda (10.00%), Environmental Science (6.92%), Medical Science (4.86%), Zoology (3.74%), Food Science (3.55%), Home Science (3.55%), Fishery (2.52%), Agriculture Science (2.34%), Social Science (1.78%), Biology (1.60%), Yoga (1.60%), Life Science (1.40%), Geography (1.22%), Fashion technology (1.03%) and other subject had less than 1% citations.

The reason for the citations more from Botany the due to the bibliographic articles found in Botany subject.

**Ranking of Journals**

Tables 4.2.1.1 and 4.2.1.2 depict the ranking list of journals. The table provides a list of journals with 10000 citations. Journal of Ethno botany is highly cited i. e. 2800 (28%) followed by Journal curr science 600 (6%),Journal of Food science Technology 500 (5%),Journal of Bull Bot Serve India 475 (4.75%),Journal of Food Chem. 470 (4.7%), Food Microbial 470
Authorship Pattern of Journal Citation

Tables 4.2.1.3 and 4.2.1.4 depicts the distribution of authorship pattern of journal citations. The highest contribution is one of the authored articles i.e. 6856 (68.56%) followed by Two authored articles 2659 (26.59%), Three authored articles 343 (3.43%) and more than three authored i.e. 142 (1.42%).

Year-wise Distribution of Journal Citations

The Tables 4.2.1.5 and 4.2.1.6 present the chronological distribution of journal citations. It was also observed that most of the reports, i.e., 391 (3.91%) were from the year 2005 and 358 (3.58%) from the year 2004. 353 (3.53%) from the year 2003. 338 (3.38%) from the year 1996.324 (3.24%) from the year 2001. Before 1945, there were very less number of report used as a citation in research articles.

Year-wise Distribution of Journal Citations

From the above tables 4.2.1.7 and 4.2.1.8, it was also observed that most of the Report were i.e. 2806 (28.06%) from the year 1995 to 2004 and 1957 (19.57%) from the year 2005 to 2014. Before 1945, there were very less number of report used as a citation in research articles.

Geographical Distribution of Journals

Tables 4.2.1.9 and 4.2.1.10 depict the geographical distribution of citations of the Journal. They show that pattern in bibliographic form-wise distribution of citations was observed in the different countries as India 4991 (49.91%), United State 3846 (38.46%), USA 651 (6.51%), London 310 (3.1%), UK 124 (1.24%), Netherland 40 (0.4%), Canada 20 (0.2%), and China 18 (0.18%).

Obsolescence of Journals Citations

The total numbers of Journal citations are 10000. The above the total numbers of Journal mentioned table indicates that the 11 yrs old Journals covered 379 citations and the percentage is 52.8.
Half Life

The period wise distribution of citations reveals that researchers go back 40 years and more than 40 years for their studies in Journals. The above mentioned table indicates that 11 years old Journals covered 379 citations and the percentage is 52.8 %. It indicates the half-life period of Journal citation as 11 years.

Ranking of Books

Tables 4.2.2.1 and 4.2.2.2 depicts the ranking list of Books. The table provides a list of Books with 5286 citations. A handbook of field & Herbarium methods is highly cited i. e. 864 (16.35%) followed by A Guidebook to plant screening : Physiochemical and biological 360 (6.81%), Molecular Biology 360 (6.81%), A Glossary of medicinal plants of Assam & Meghalaya 324 (6.13%), Handbook of Analysis & Quality Control 300 (5.68%), Ethno botany : Principles & Applications 288 (5.45%), A Handbook of Ethno botany 216 (4.10%), Methods and Approaches in Ethno botany 200 (3.78%), Handbook of African medicinal plants 200 (3.78%), Bailry and Love’s short practice of surgery 180 (3.41%), Handbook of analysis and Quality control for fruit & vegetable Products 180 (3.41%) and lowest no of articles 12 (0.23%) were published in Herbs and Medicinal Flowers.

Authorship Pattern of Books Citation

Tables 4.2.2.3 and 4.2.2.4 depicts the distribution of authorship pattern of Book citations. The highest contribution is one of the authored articles i.e.2671 (50.53%) followed by Two authored articles 1933 (36.57%), Three authored articles 488 (9.23%) and more than three authored i.e. 194 (3.67%).

Year-wise Distribution of Book Citations

The tables 4.2.2.5 and 4.2.2.6 show the chronological distribution of book citations. From them, it was also observed that most of the Report were i.e.193 (3.65%) from the year 2000 and 182 (3.44%) from the year 2005. 182 (3.44%) from the year 1985. 177 (3.35%) from the year 2006. 146 (2.76%) from the year 1993. Before 1945, there were very less number of report used as a citation in research articles.
Year-wise Distribution of Books Citations

From the above tables 4.2.2.7 and 4.2.2.8, it was also observed that most of the Report were i.e.1304 (24.67%) from the year 1985 to 1994 and 1176 (22.25%) from the year 1995 to 2004. Before 1945, there were very less number of report used as a citation in research articles.

Geographical Distribution of Books

Tables 4.2.2.9 and 4.2.2.10 depict the geographical distribution of citations of books. They show that the pattern in bibliographic form-wise distribution of citations was different for different countries. For India, it was, 3736 (70.68%), followed by United State 873 (16.52%), Philippines 360 (6.81%), Philadelphia 125 (2.36%), UK 108 (2.04%), USA 84 (1.59%).

Obsolescence of Books Citations

The total numbers of book citations are 5286. The above the total numbers of book mentioned table indicates that the 15 yrs old books covered 191 citations and the percentage is 50.03.

Half Life

The period wise distribution of citations reveals that researchers go back 40 years and more than 40 years for their studies in books. The above mentioned table indicates that 15 years old books covered 191 citations and the percentage is 50.03 %. It indicates that the half life period of book citation is 15 years.

After analyzing the citations and presenting details we conclude that in the year 2010, 139 (13.01%) articles were published, the highest publications among the years under study. It also reveals that the largest number of articles, i.e. 338 (31.65%), had two authors.

When the length of articles is considered (study of citations), it is observed that the majority of articles i. e. 389 (36.42%) have the length of 10-19 pages. The study also showed that out of 1068 articles, 950 (88.95%) were jointly authored.

It is observed that articles from botany were more preferred by researchers, 264 (24.72%), as compared to other subjects. The highly preferred subject is botany in which highest research work is carried out. Again it has been observed that out of 1068 contributions, 520 contributions (48.69%) have page length of 1-5 pages.
As per the rank list of authors of research articles it was found that, Ranjay K. Singh's position was on top of the rank. It also showed that the maximum number of citations 2481 (12.88%) were produced in 2014.

Citation distribution as per bibliographic form shows journals accounting for a share of almost 10,000 (51.93%). The study concludes that journals are highly preferred sources of information. Authors also prefer online literature for their research. Authors prefer writing individually research papers.

It is observed that literature published nationally is highly preferred. And the chronological distributions of the journal citations show that 22.14% of the total citations were used for the first ten years i.e. 2005 to 2010. Also the highest number i.e. 3305 (25.67%) out of 12878 contributions has been contributed by the authors from New Delhi.

Here the citations are analyzed according to their publisher from which C Chukhamba Bharati Academy, 1070 (5.56%) Found to be highest number of articles publishers. It was apparent from the study that single authored citations ranked highest 11479 (59.61%) & it also reveals that the most of the citation from Botany were more preferred by researcher (24.68%) as compared to other subjects.

Out of 10,000 citations from list of journals, journal of Ethnobotany is highly cited i.e. 2800 (28%). As per the study of authorship pattern of journal citations, highest contribution from one authored articles i.e. 6856 (68.56%) has been found.

It was also observed that most of the reports were from the year 2005 i.e. 391 (3.91%). From the geographical distribution of citations of journals, it was clear that India contributes highest i.e. 4991 (49.91%) and it also indicates that the 11 years old journals covered 379 (52.8%) citations, it means the half life period of journal citation is 11 years.

As per the ranking list of Books, A handbook of Field & Herbarium method is highly cited i.e. 864 (16.35%) and the highest contribution is from one authored articles i.e. 2671 (50.53%). It was also observed that the most of the report were from the year 2000 i.e. 193 (3.65%) in books.

As per the geographical distribution of books, the highest number of citation was observed of India 3736 (70.68%) and 15 years old books
covered 191 citations and the percentage is (50.03%). The half life period of book citations is of 15 years is indicated by it.
5.2 Recommendations:

The present study may be helpful in having journals with enhanced utility in the library, particularly for Traditional Knowledge. It may also be indirectly helpful to reducing the cost incurred for acquiring the journals to the library and also help the librarians to take decisions regarding proper allocation of library budget toward the acquisition of periodicals to the library. It is also helpful to information scientists.

Many librarians and information scientists in decision-making process adopt the statistical and mathematical techniques like citation study or bibliometric study. These studies are adopted in order to overcome the problems like explosive growth of subjects, ever increasing cost of journals etc., and help them in decision-making process in their acquisition policy.
5.3 Future Scope / further studies:

- Web citation patterns by research scholars.
- Citation cycle (in a discipline).
- Bibliometric studies.
- Scientometric studies of a discipline.
- Informetric studies.
- Webometric studies of prominent journals available on web.
5.4 Limitations of research work:

- This investigation undertook Bibliometric analysis of the article and their citations collected from the 'Indian Journal of Traditional Knowledge' published from 2005 to 2014.
- Total number of articles published during 2005-2014 are 1068.
- The total number citations calculated are 19258.