CHAPTER-5
FINDINGS, CONCLUSION AND SUGGESTIONS

Now-a-days study on users and uses of various library resources are very popular among researchers. Both of these, provide the base for managing the services provided by library at all levels. This in turn facilitates the proper management of knowledge that is the proper management of data into work. The various tools and techniques have been given to improve the library services for fulfilling the user’s requirements timely. Computer is a solution to solve several problems related to the management of this vast amount of data. However, various tools and techniques are there, still librarians’ knowledge is not adequate because of the frequently changing needs of users, and is being quite unable to predict what actually user is asking for. It may be summarised that user’s study, what actually he/she needs at a particular point of time is the major focus in library education programme.

In the age of information explosion, it is very essential to organise the information for their effective and efficient use. Citation Analysis is one of the popular method employed in recent days for the identification of core journals in various subjects field or for a particular specific community in a geographical proximity. Citation method is used in the present study to understand the Information needs, use pattern and use behaviour of research scholar in the field of Management.

5.1 MAJOR FINDINGS OF THE STUDY

The major findings drawn from this study are following:

5.1.1 PERSONAL INFORMATION

The first finding in this regard, was the lack of uniformity among the numbers of doctoral dissertations in the format of citations. It is to be emphasized further
that there was no consistency even within a citation of some doctoral dissertations.

5.1.2 TOTAL DATABASE OF THE STUDY

Total 28,928 citations from 210 doctoral dissertations were analyzed by using citation analysis technique. It showed that out of the total numbers of 210 doctoral dissertations, the maximum numbers of thirty eight doctoral dissertations were submitted in Guru Jambheshwar University of Science & Technology, Hisar with the total number of 5758 citations and the average citations per doctoral dissertation were 151.53. The lowest number of citations used in Guru Jambheshwar University of Science & Technology, Hisar was 85 while the highest were 469. A minimum numbers of 25 doctoral dissertations were submitted in the Maharshi Dayanand University, Rohtak with the total number of 3469 citations and the average citations per doctoral dissertation were 138.76. The lowest numbers of citations used in Maharshi Dayanand University, Rohtak were 28 and the highest were 279. It also showed that lowest numbers of citations used in doctoral dissertations were 28 in Maharshi Dayanand University, Rohtak while the highest number of citations was 574 in Guru Nanak Dev University, Amritsar. Overall the average number of citations per doctoral dissertations was 137.75 (See table 4.1).

5.1.3 SUBJECT-WISE DISTRIBUTION OF TOTAL DOCTORAL DISSERTATIONS

Subject-wise distribution showed that out of the total 210 doctoral dissertations, the maximum number of 76 (36.19%) doctoral dissertations were submitted on Marketing Management, followed by 62 (29.52%) doctoral dissertations were on Human Resource Management, 60 (28.57%) doctoral dissertations were on Finance Management and 4 (1.90%) doctoral dissertations were on Operations Management. 3 (1.43%) doctoral dissertations were on International Business Management and Pharmaceutical Management
each while the minimum numbers of 2 (0.95%) doctoral dissertations were on Retail Management. This showed that majority of the research scholars preferred the research areas of Marketing Management, Human Resource Management and Finance Management (See table 4.3).

5.1.4 FORM-WISE DISTRIBUTION OF TOTAL CITED BOOKS AND JOURNALS

The distribution of citations among the total citations of books (9136) and journals (12535) indicated that citations of journals were highly cited i.e. 43.33% as compared to citations of books i.e. 31.58%.

Out of the total 28,928 citations, the citations of books and journals in Kurukshetra University, Kurukshetra were 36.01% and 28.95% respectively. Similarly, out of the total citations, the citations of books and journals in Maharshi Dayanand University, Rohtak were 36.78% and 33.47%; in Guru Jambheshwar University of Science & Technology, Hisar were % 31.82% and 49.51%; in Punjabi University, Patiala were 30.90% and 44.37%; in Guru Nanak Dev University, Amritsar were 20.71% and 55.94; in Panjab University, Chandigarh were 27.06% and 46.75%, and in Himachal Pradesh University, Shimla were 43.59% and 36.92% respectively.

The data showed that out of total seven universities books were cited more than journals in three universities (i.e. Kurukshetra University, Kurukshetra; Maharshi Dayanand University, Rohtak; and Himachal Pradesh University, Shimla) while journals were cited more than books in four universities (i.e. Guru Jambheshwar University of Science & Technology, Hisar; Punjabi University, Patiala; Guru Nanak Dev University, Amritsar and Panjab University, Chandigarh) but overall journals got the first position while books were on second position in terms of their use (See table 4.5).
5.1.5 STATE-WISE BREAKUP OF CITATIONS OF BOOKS, JOURNALS AND OTHER DOCUMENTS

The state-wise breakup of citations of books, journals and other documents revealed that in total seven universities the use of journals i.e. 43.33% was higher than books i.e. 31.58% and other documents was 25.09%.

State-wise distribution of citations of books showed that university of Himachal Pradesh (Himachal Pradesh University, Shimla) cited maximum numbers of book citations i.e. 1145 (43.59%) than universities of Haryana (Kurukshetra University, Kurukshetra; Maharshi Dayanand University, Rohtak and Guru Jambheshwar University of Science & Technology, Hisar) i.e. 4617 (34.41%), Chandigarh (Panjab University, Chandigarh) i.e. 895 (27.06%) and universities of Punjab (Punjabi University, Patiala and Guru Nanak Dev University, Amritsar).

State-wise distribution of citations of journals showed that universities of Punjab (Punjabi University, Patiala and Guru Nanak Dev University, Amritsar) cited maximum numbers of journal citations i.e. 4795 (50.06%) than university of Chandigarh ((Panjab University, Chandigarh) i.e. 1546 (46.75%), universities of Haryana (Kurukshetra University, Kurukshetra; Maharshi Dayanand University, Rohtak and Guru Jambheshwar University of Science & Technology, Hisar) i.e. 5225 (38.94%) and Himachal Pradesh i.e. 970 (36.72%).

State-wise distribution of citations of other documents showed that universities of Haryana (Kurukshetra University, Kurukshetra; Maharshi Dayanand University, Rohtak and Guru Jambheshwar University of Science & Technology, Hisar) cited maximum numbers of citations i.e. 3575 (26.65%) than university of Chandigarh (Panjab University, Chandigarh), universities of Punjab (Punjabi University, Patiala and Guru Nanak Dev University, Amritsar) i.e. 2304 (24.06%) and university of Himachal Pradesh (Himachal Pradesh University, Shimla) i.e. 512 (19.49%) (See table 4.6).
5.1.6 AUTHORSHIP PATTERN OF CITED JOURNALS AND BOOKS: UNIVERSITY-WISE

Regarding the authorship pattern, preference to the single authorship was noticed in case of journal articles and also in book writings in all seven universities.

In Kurukshetra University, Kurukshetra the respective percentage for the single authorship for journal articles were 51.44% while it were 65.54% for books writings. The percentage of joint authorship was 33.72% for cited journals and 24.45% for cited books. The degree of collaboration among authors of cited journals was 0.49 and collaborative co-efficient was 0.28 while the degree of collaboration among cited books was 0.34 and collaboration co-efficient was 0.19. It was found to be more in case of journal articles as compared to books. The findings revealed the extent of collaboration was popular among authors (See table 4.7.1).

In Maharshi Dayanand University, Rohtak, the respective percentage for the single authorship for journal articles were 42.38% while it were 65.44% for books writings. The percentage of joint authorship was 40.74% for journals and 22.81% for books. The degree of collaboration among authors of cited journals was 0.58 and collaborative co-efficient was 0.32 while the degree of collaboration among cited books was 0.35 and collaboration co-efficient was 0.20. It was found to be more in case of journal articles as compared to books (See table 4.7.2).

In Guru Jambheshwar University of Science & Technology, Hisar, the respective percentage for the single authorship for journal articles were 46.26% while it were 63.65% for books writings. The percentage of joint authorship was 30.52% for journals and 25.33% for books. The degree of collaboration among authors of cited journals was 0.54 and collaborative co-efficient was 0.32 while the degree of collaboration among cited books was 0.36 and
collaboration co-efficient was 0.21. It was found to be more in case of journal articles as compared to books (See table 4.7.3).

In Punjabi University, Patiala, the respective percentage for the single authorship for journal articles were 55.32% while it were 66.56% for book writings. The percentage of joint authorship was 28.19% for journals and 23.34% for books. The degree of collaboration among authors of cited journals was 0.45 and collaborative co-efficient was 0.26 while the degree of collaboration among cited books was 0.34 and collaboration co-efficient was 0.20. It was found to be more in case of journal articles as compared to books (See table 4.7.4).

In Guru Nanak Dev University, Amritsar, the respective percentage for the single authorship for journal articles were 43.13% while it were60.10% for books writings. The percentage of joint authorship was 36.48% for journals and 26.36% for books. The degree of collaboration among authors of cited journals was 0.57 and collaborative co-efficient was 0.33 while the degree of collaboration among cited books was 0.40 and collaboration co-efficient was 0.23. It was found to be more in case of journal articles as compared to books (See table 4.7.5).

In Panjab University, Chandigarh, the respective percentage for the single authorship for journals article were 57.70% while it were 67.04% for books writings. The percentage of joint authorship was 27.81% for journals and 24.47% for books. The degree of collaboration among authors of cited journals was 0.42 and collaborative co-efficient is 0.24 while the degree of collaboration among cited books was 0.33 and collaboration co-efficient was 0.18. It was found to be more in case of journal articles as compared to books (See table 4.7.6).

In Himachal Pradesh University, Shimla, the respective percentage for the single authorship for journals article were 47.73% while it were 70.22% for
book writings. The percentage of joint authorship was 33.71% for journals and 22.18% for books. The degree of collaboration among authors of cited journals was 0.52 and collaborative co-efficient was 0.30 while the degree of collaboration among cited books was 0.30 and collaboration co-efficient is 0.16. It was found to be more in case of journal articles as compared to books (See table 4.7.7).

The percentage of three authors or multi-authorship was comparatively much less in case of both books and journals in all the universities.

5.1.7 AUTHORSHIP PATTERN OF TOTAL NUMBER OF CITATIONS CITED IN JOURNALS AND BOOKS

The authorship pattern of cited journals and books by the Universities of Haryana (Kurukshetra University, Kurukshetra; Maharshi Dayanand University, Rohtak; Guru Jambheshwar University of Science & Technology, Hisar), Punjab (Punjabi University, Patiala; Guru Nanak Dev University, Amritsar), Chandigarh (Panjab University, Chandigarh) and Himachal Pradesh (Himachal Pradesh University, Shimla) indicated that out of the total number of 12535 journal citations, 6121 citations were from single author accounting for 48.83%, followed by joint authors citations 4079 (32.54%); three authors citations 1369 (10.92%); four authors citations 489 (3.90%) and more than four authors with 477 citations i.e. 3.81%. Degree of Collaboration of cited journals was 0.51 which indicated extent of collaboration was popular among authors. Collaborative co-efficient was 0.30 which indicated less collaboration between authors.

The total numbers of book citations were 9136. Out of these, single author citations were 5866 accounting for 64.21% followed by joint authors citations 2305 (25.23%); three authors citations 573 (6.27%); four authors citations 208 (2.28%) and more than four authors with 184 citations i.e. 2.01%. Degree of Collaboration of cited books was 0.36 which indicated extent of collaboration
was not much popular among authors. Collaborative co-efficient was 0.20 which indicates less collaboration between authors (See table 4.8).

5.1.8 COMPARATIVE STUDY OF AUTHORSHIP COLLABORATION OF TOTAL CITATIONS CITED IN JOURNALS AND BOOKS

The degree of collaboration among authors was found to be more in case of journals compared to books in all the universities and also co-efficient of collaboration among authors was found to be more in case of journals compared to books in all the universities (See table 4.9).

5.1.9 RANKING OF JOURNALS- UNIVERSITY-WISE

Ranking of journals using doctoral dissertations as source, data reflects the local needs as the prime criterion. The distribution was ranked in order of journals that most frequently cited.

The rank list of periodicals of Kurukshetra University, Kurukshetra indicated that among 255 periodicals cited only twenty six periodicals accounted for more than 60% (i.e. 60.35%) of the citations and therefore they may be considered as core periodicals. “Journal of Marketing” was the first most frequently cited periodical i.e. 8.33% (See table 4.10.1.1).

The rank list of periodicals of Maharshi Dayanand University, Rohtak indicated that among 315 periodicals cited only twenty four periodicals accounted for more than 60% (i.e. 60.55%) of the citations and therefore they may be considered as core periodicals. “Journal of Marketing Research” was the first most frequently cited periodical i.e. 7.24% (See table 4.10.2.1).

The rank list of periodicals of Guru Jambheshwar University of Science & Technology, Hisar indicated that among 677 periodicals cited only sixty three periodicals accounted for more than 60% (i.e. 60.08%) of the citations and therefore they may be considered as core periodicals. It was observed that “Economic and Political Weekly” was the first most frequently cited periodical i.e. 20.03% (See table 4.10.3.1).
The rank list of periodicals of Punjabi University, Patiala indicated that among 518 periodicals cited only fifty three periodicals accounted for more than 60% (i.e. 60.09%) of the citations and therefore they may be considered as core periodicals. It was observed that “Economic and Political Weekly” was the first most frequently cited periodical i.e. 17.55% (See table 4.10.4.1).

The rank list of periodicals of Guru Nanak Dev University, Amritsar indicated that among 436 periodicals cited only thirty seven periodicals accounted for more than 60% (i.e. 60.14%) of the citations and therefore they may be considered as core periodicals. It was also observed indicated that “Economic and Political Weekly” was the first most frequently cited periodical i.e. 18.30% (See table 4.10.5.1).

The rank list of periodicals of Panjab University, Chandigarh which indicates that among 215 periodicals cited only thirty two periodical accounts for more than 60% (i.e. 60.48%) of the citations and therefore they may be considered as core periodicals. It also indicated that “Economic and Political Weekly” is the first most frequently cited periodical i.e. 7.05% (See table 4.10.6.1).

The rank list of periodicals of Himachal Pradesh University, Shimla indicated that among 265 periodicals cited only forty one periodicals accounted for more than 60% (i.e. 60.52%) of the citations and therefore they may be considered as core periodicals. It was also indicates that “Journal of Marketing” was the first most frequently cited periodical i.e. 4.85% (See table 4.10.7.1).

The verbal formulation of the Bradford’s Law of Scattering was also tested by dividing the total number of journal citations in each universities into three zones. Hence the journal distribution as per the Bradford’s Law revealed the ratio as 9:30:216 in Kurukshetra University, Kurukshetra; 8:30:277 in Maharshi Dayanand University, Rohtak, 12:82:583 in Guru Jambheshwar University of Science & Technology, Hisar; 11:68:439 in Punjabi University, Patiala; 8:50:378 in Guru Nanak Dev University, Amritsar; 7:42:166 in Panjab
University, Chandigarh and 15:42:208 in Himachal Pradesh University, Shimla.

It was found from the ratios that the number of journal titles in each zone was not increasing geometrically. Hence it was concluded that the dispersion of journal titles in Management did not satisfy the verbal formulation of Bradford’s Law of Scattering (See table 4.10.1.2 to 4.10.7.2).

The rank list of journals revealed that out of total 2681 journals cited with 12535 citations shows that most cited journals was “Economic and Political Weekly” which held first positions with 2535 (20.22%) citations. The users were using oldest journals from 1827 as well as current journals of the year 2009. It is noted that most consulted 38 journals cover more than 50% of the total journal citations, which consisted the journal up to Journal of Decision Science, publishing from 1976. It showed the popularity of the journal with its use. The journals cited for less than 5 times were not listed to avoid unduly lengthy table (See table 4.11).

5.1.10 COUNTRY WISE DISTRIBUTION OF JOURNAL PUBLICATIONS

Country-wise distribution of journal publications indicated that majority of the journal articles cited by the researchers were published in foreign publications i.e. 50.89%. Only 591 (22.04%) journals published in India were cited by the research scholars. 834 (31.11%) journals were published in USA, followed by 514 (19.17%) were published in UK and only 53 (0.19%) were published in Australia. The other journals cited less than five times had been categorized under other countries publications. The scholars had cited more than 50% journals published in India and USA (See table 4.12).

5.1.11 APPLICATION OF BRADFORD’S LAW OF DISTRIBUTION

By applying the Bradford’s Law of Distribution, the number of core journals in the field of Management of the Universities of Haryana (Kurukshetra University, Kurukshtra; Maharshi Dayanand University, Rohtak; Guru
Jambheshwar University of Science & Technology, Hisar), Punjab (Punjabi University, Patiala; Guru Nanak Dev University, Amritsar), Chandigarh (Panjab University, Chandigarh) and Himachal Pradesh (Himachal Pradesh University, Shimla) under study were determined. Application of chi-square test of goodness of fit further indicated data did not fit well with Bradford’s Law of Distribution. The null hypothesis was accepted. Because the calculated value of chi-square ($\chi^2_{calculated}$) was much less compared to the tabular value of chi-square ($\chi^2_{tab}$) in all cases.

Calculated value and tabular value of chi-square in Kurukshetra University, Kurukshetra were 0.4663 and 275.93. Similarly, calculated value and tabular value of chi-square in Maharshi Dayanand University, Rohtak were 0.4397 and 352.46; in Guru Jambheshwar University of Science & Technology, Hisar were 1.5187 and 748.23; in Punjabi University, Patiala were 0.4707 and 574.40; in Guru Nanak Dev University, Amritsar were 0.0984 and 484.75; in Panjab University, Chandigarh were 0.1023 and 243.13 and in Himachal Pradesh University, Shimla were 0.2506 and 297.79 (See table 4.13.1 to 4.13.7).

5.1.12 COMPARATIVE STUDY OF CHRONOLOGICAL DISTRIBUTION OF TOTAL CITATIONS OF BOOKS

Comparative study of the chronological distribution of total citations of books of total seven universities indicated that the books published during 1990-1999 were mostly used by the scholars of all the universities where the scholars of Kurukshetra University, Kurukshetra (41.15%) had used maximum number of books, followed by Panjab University, Chandigarh (36.98%) and Maharshi Dayanand University, Rohtak (36.83%). The scholars of Guru Jambheshwar University of Science & Technology, Hisar used maximum number of recently published books (25.82%), followed by Guru Nanak Dev University, Amritsar (22.36%) (See table 4.15).
5.1.13 COMPARATIVE STUDY OF CHRONOLOGICAL DISTRIBUTION OF TOTAL CITATIONS OF JOURNALS

Comparative study of the chronological distribution of total citations of journals of total seven universities. It indicated that the journals published during 1990-1999 were mostly used by the scholars of all the universities where the scholars of Panjab University, Chandigarh had mostly used the journals (45.73%), followed by Punjabi University, Patiala (42.04%) and Maharshi Dayanand University, Rohtak (37.81%). The scholars of Guru Jambheshwar University of Science & Technology, Hisar used maximum number of recently published journals (36.06%) followed by Guru Nanak Dev University, Amritsar (33.79%) (See table 4.16).

5.1.14 OBSOLESCENCE/ HALF-LIFE OF BOOKS AND JOURNALS

The obsolescence/ half-life values of book citations were high compared to journal citations. It was observed that researchers were using current journals instead of books while performing their research. The obsolescence/ half-life in Kurukshetra University, Kurukshetra was 18 years for books and 18 years for journals; in Maharshi Dayanand University, Rohtak, was 22 years for books and 9 years for journals; in Guru Jambheshwar University of Science & Technology, Hisar was 11 years for books and 9 years for journals; in Punjabi University, Patiala was 13 years for books and 10 years for journals; in Guru Nanak Dev University, Amritsar was 14 years for books and 10 years for journals; in Panjab University, Chandigarh was 13 years for books and 10 years for journals and in Himachal Pradesh University, Shimla was 16 years for books and 12 years for journals (See table 417.1.1 to 417.2.2).

5.1.15 AGE WISE DISTRIBUTION OF TOTAL NUMBER OF CITATIONS CITED IN BOOKS AND JOURNALS

It may be observed from age wise distribution of citations that while books published 176 years ago had been cited, the periodicals cited go to the extent of
97 years. While 70 per cent of the periodicals were within 17 years of age, the corresponding figure for books was 24 years. It was interested to note that 50 per cent of periodicals citations were within 11 years and books within 16 years (See table 4.18.1).

5.1.16 OBSOLESCENCE FACTORS OF SHOWING ANNUAL AGING, HALF-LIFE, MEAN-LIFE AND UTILITY FACTOR FOR CITED JOURNALS AND BOOKS

Annual aging factor, Half-life, Mean-life, Utility-factor and Corrected obsolescence factor for cited books and journals varied from each other. The lowest Annual aging factor (a) was found for cited journals and highest for cited books i.e. 0.961849 and 0.972222. The lowest half-life factor (h) was found for cited journals and highest for cited books i.e. 17.7964 and 24.5851. The lowest Mean-life factor (m) was found for cited journals and highest for cited books i.e. 25.6748 and 35.4689. The lowest Utility factor (UF) was found for cited journals and highest for cited books i.e. 26.178 and 35.9712. The lowest Corrected obsolescence factor (α) was found for cited journals and highest for cited books i.e. 0.9734 and 0.9806 (See table 4.18.2).

5.1.17 TEST OF EXPONENTIALITY OF CITATION DISTRIBUTION – BOOKS AND JOURNALS

Test of exponentially of citation distribution of books and journals showed the values of Mean and Standard Deviation for books were found to be 18.55 and 14.49 respectively while the values of Mean and Standard Deviation for journals were found to be 13.48 and 11.67 respectively (See table 4.19).

5.2 RESULT OF HYPOTHESIS TESTING

H₀: Data does not fit with Bradford’s Law of Distribution.

Result: Application of chi-square test of goodness of fit indicated that data did not fit with Bradford’s Law of Distribution. Hence the null hypothesis was
accepted because the calculated value of chi-square was much less compared to the tabular value of chi-square at 0.05% level of significance in all cases (See table 4.13.1 to 4.13.7).

5.3 CONCLUSION

Analysis of references lists appended to doctoral dissertations is one approach of the present study, to measure citation pattern by analyzing characteristics features of literature like bibliographic forms, highly cited books and journals, country-wise distribution, year-wise distribution etc. The collected data was analyzed to arrive at some generalizations. This type of study helps to know the better understanding of information requirements of researchers. The quality of such studies as this depends on the accuracy and correctness of the citations given by the authors, inaccurate and incomplete citations should be avoided. The results of such study are very useful in decision making in research administration and planning.

5.4 SUGGESTIONS

The study has initiated the researcher to put forward the following suggestions:

1. Periodical orientation programmes should be arranged for the research scholars in order to exploit the available resources in the library.

2. The quality of such studies depends on the accuracy and correctness of the citations given by the authors. Inaccurate and incomplete citations should be avoided.

3. The acquisition policy of university library should be evaluated on the behalf of researchers’ requirements.

4. There is a need to conduct more citation studies on theses/dissertations at local, national, regional and international levels from time to time.

5. More funds for journals and books should be allocated in comparison of other bibliographical forms of documents.
5.5 FURTHER STUDY

As regards further, research in this field, a study of authorship pattern with year-wise analysis of authorship trend need to be conducted, to determine the trends of research more accurately. The result may be far accurate and with wide application from such a study.


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