CHAPTER - 6

FINDINGS AND CONCLUSIONS

The findings and conclusions discussed in this chapter are based on citations taken from 5 selected journals in Fishery Science. The study can be taken as an indirect use study as the units studied are the articles in the 5 journals and their citations and the citations represent the literature made use of by the researchers in their scientific work.

1. The rank list of 185 journals most cited, have an international coverage and are helpful for the following groups as given below.

   a) The librarian and policy makers of a research institution in the field of Fishery science can use the list for planning acquisition of journals to the best advantage of users. Due to the enormous increase in number of scientific journals and cost no library can afford to procure all the relevant journals needed for the clientele. Measures like ordering highly productive journals by airmail and others by surface mail would reduce financial burden to some extent. Another option is to subscribe highly productive journals only and get microfische copies of less productive and only photocopies of relevant papers in least productive journals. Binding, which also involves much cost can be planned giving priority for the more used journals.
b) Research workers and scientists in the field can be made aware of the important journals relevant to their studies from the rank list of journals. Researchers also can select journals in which to publish their results so that it would reach more users in the field.

c) Information Scientist: For planning information services, priority areas can be easily determined. For local database preparation also journals can be selected based on ranking. Local variation in acquisition and information services may be made depending on policy and areas of priority in research organizations and expert opinion.

d) Publishers of journals can assess the areas in which only a few journals are available and can concentrate on starting new journals in these areas. For example, fishery technology and Aquaculture are areas found in this study which have only a few journals even though these aspects have been given prime importance in fishery science. Publishers of secondary services also can select journals to be included in such services.

2. Application of informetric laws to the distribution of citation showed that theoretically it does not confirm to Bradford's pattern \(1:n:n^2\). But the data fits Bradfords empirical model \(F(x) = a + b \log x\) with 98.4% accuracy. Thus
the distribution is almost linear as suggested by Bradford's model.

Author productivity study shows that it does not conform to Lotka's law as the number of authors with one article is about 90%. This indicates the emergence of new authors who contribute only one article which is characteristic of newly developing interdisciplinary subjects.

3. Number of journal citations (61%) are more than other forms like books, reports, reviews etc. It can be concluded that researchers in the field of Fishery science depend mainly on journal literature for research work and they also publish their findings in the form of journal articles.

Self citation of the 5 sample journals shows that those publishing papers in these journals mostly consult these same titles for their work.

4. Age of journals cited is calculated as 4.8 years which shows the journals become obsolete after this period. This low age is due to increased research activity which replaces new findings in the place of old ones. Median citation age plotted in graph also shows the low age which shows that this is a growing subject. Rapid obsolescence indicates high popularity of the field.

5. Study of subject of articles indicates that fish physiology is the area where active research is going on.
The emergence of journals and publications on specific area of fish physiology during 1980 may be attributed because of the active research in this area. Subject of journals in rank list reveals that the majority of journals cited belong to fisheries and biology, the sum total of which is about 50% of the whole citations.

6. The oldest journal cited is "Philosophical Transactions of Royal Society of London" which is one of the pioneers in the field of publishing of the Scientific Journals. The popularity of the journal shows it is an authentic research journal which publishes multidisciplinary articles. Starting of the majority of journals in 1961-'70 (35 titles) highlights the kind of progress made in research during this decade. It was also a period of new developments in fishery science and ushered a new era in the field of mechanisation in fishing.

7. Average number of citation per article is very high (24 to 37) which shows the researcher's increased dependence on earlier published journal articles for conducting new research.

8. U.S. is found to be the most productive country with 92 journals (52%) U.K. and Netherlands form second and third respectively. No journal from India is seen in rank list of journals. So it is seen that developed countries have all facilities for research, education and publication of
results while developing countries have to get the publications from others at a very high cost. It is seen that some international organizations extend gift and exchange facilities which can be availed by developing countries.

9. The distribution of journal citation does not conform to 80/20 rule which states that 80% of citations must be from 20% of journals. In this study it is observed that 90% of citations (15708) are from 20% of journals (178 Nos).

10. Some popular journals, like 'Science' and 'Nature' are top ranking and the results are quickly disseminated through these journals with shorter periodicity (weekly). It also indicates that research in Fishery science is of vital interest to those doing fundamental research in science. Any library or information centre can include these titles in their list for subscription or information service.

11. Number of articles published in 5 sample journals shows enhancement over 10 years (from 1984 to 1993). The increased productivity of articles indicates the increased output in research in the subject. The journal 'Aquaculture' is having maximum articles and it is the most productive area of research in the world at present. This can be taken as an area for allotment of more funds and encouragement of research.
Citation analysis is an effective tool which is useful to librarians, policy makers, information scientists, research scholars, scientists and publishers in different ways. Citation study is an indirect use study as citations are the papers which are used or consulted in preparation of source article. Earlier, citation studies were done in Social Science and hard science for determining scholarly eminence, major contributions to a discipline and content analysis of subject. Now the studies are used in assessing quality of research by individual, institution or a country, library collection building, information retrieval, science policy decision etc. This study is an attempt to evaluate Fishery science journals quantitatively based on citations from selected titles. Future studies of similar type in other subjects can also be initiated using informetric methods as done in this study. The studies can be conducted keeping in mind the observation that 'the main purpose of quantitative measures is to provide information on which to base qualitative judgements not to replace them'.