CHAPTER 3

Research Methodology
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3.1 A User Survey is considered the form of user study in which users of libraries or other information systems are formally queried through questionnaires or interviews.

General Purpose of Survey: To determine if a library or information system is fulfilling its purpose. ‘To determine, level of success of programme, and to improve information system services and facilities, and to solicit suggestions’ (Verhoeven, 1990).

3.2 OBJECTIVES OF THE STUDY:

Objective of research problem is basically a systematic search process and generalization of findings. In understanding the problem in right perspective, ‘it is essential to review the earlier studies. Moreover, it would be valuable for supporting solutions of the research problems under any study’ (Pradhani and Gautam, 2001).

The objectives of the present study is to examine the role of Technical Information Centres towards defence research. The specific objectives of the study are ;

- To identify potential contributions of Technical Information Centres towards defence research
- To examine the methods of information dissemination by the Technical Information Centres and their role in defence research
• To examine the role of Defence Scientific Information and Documentation Centre (DESIDOC) in supplementing the TIC services
• To assess the needs of users and role of TICs in providing information
• To assess the usage of TICs
• To examine the resource sharing among the TICs
• To develop strategies for TICs over all development of TIC services.

Rapid access in the literature has posed a big problem for the researchers, due to information explosion the researcher is able to cover only a fraction of the larger volume of literature in the area of research. Hence, the above objectives are mainly covered for the study.

3.3 **SCOPE OF THE STUDY:**

Rapid access to the most current information is critical to the success of research. Speedy access to the most relevant information and prompt delivery of documents are main concerns of the TIC. There are problems in fulfilling these tasks. In the space era, dominated by computers and communication satellites, distance has been shortened by establishing instant communication. But impediments of effective exchange of information in a large scale have not quite disappeared. In fact the developments of recent times have brought new problems. Hence, in this study, the impact of TICs in support of defence research, the impact on the readers, presents data on the different kinds of TIC services. The analysis of the data has to provide information about the impact of TICs on different cadres of
employees and the need for improving present tools and techniques and to develop new ones. Therefore, this study has wider scope.

3.4 **JUSTIFICATION OF THE STUDY:**

Today, the knowledge proliferation is so enormous that millions of pieces of information is emerging every movement in the form of primary, secondary, and tertiary document sources. The scientific community of defence research also contributes to this stream.

In Research and Development activity the quick access to information is essential for the research. The scientists are required to keep abreast of latest development in their areas of specialization, to get information, which is useful in current research programmes. The need for information depends on the context in which information sought. Many times a routine response is enough to solve the routine information requirements. On the other hand there are situations where information is required for problem solving. Different strategies are required to meet the needs in each of these situations. On one hand for the information services is increasing, on the other hand need to introduce new services is also increasing.

To carry Research and Development programmes in time, the information services provided by a TIC is necessary, which has an appropriate information about the goals and objectives as well as the plans, programmes, and activities of the laboratory.

Librarians and information scientists are mainly concerned with the organization and proper management of information services and services for the benefit of user community. The TICs are playing a significant role in the promotion of defence
research activities. They are also playing critical role in the transfer of
information, exchange of ideas and experiences. For the ‘effective
management of library and information centre and to provide
pinpointed information service to the library clientele, an essential pre-
requisite is to conduct user study’ (Vij, 1986). Hence, the study on
the role of TICs towards defence research is fully justified.

3.5 **DISCIPLINE:**

Defence is a subject of priority and concern to all the nations of
the world. Today India is facing multiple challenges due to the
escalating threats to our national security and the commercially
motivated control regimes, technology denials and sanctions by some
countries, targeting our institutions and industries. We need to harness
the available talents within the country using innovative management
methods, to build technological excellence and leadership in vital
areas, which can provide strength to the nation. With the aim of
creating an organization that can consider the scientific aspects of
nations defence. DRDO was established by merging together the
technical establishments under three service head quarters.

Information is ‘essential for each and every human activity in
the world. Providing information in a well organized manner is the
aim of information system. Ideas and proposals for Research and
Development and innovation arise from different points within the
organization. Information system providing information in these areas
plays a very essential and vital role in stimulating research. The
scientist conducting research needs technological information relating
to his project’ (Sharma and Zutshi, 1980) a service provided by any
information center which draws attention to information possessed in
its department in anticipation of demand, this is done by preparing and circulating news sheets, literature surveys, reading lists, abstracts, particulars of articles in current periodicals etc., which it is anticipated will be of interest to potential users of the service. The human action and the information flow are the most dominant inputs to any sound development strategy in any organization. For them the right information needs to be in the hands of the right people at the right time. ‘Libraries and information centres since inceptions are more or less the part and parcel of their attached organization and nerve center for delivering the strategic knowledge to the users of their organization’ (Khairah and Singh, 2005) rapid access to the most current information is critical to the success of research initiatives. It has become impossible for any TIC to remain self-reliant.

3.6 **LIMITATIONS OF THE STUDY**

The problems of scientists at various defence laboratories are universal. However, the study is confined only to the TICs of major laboratories, and it is hoped that the issues, results of the study and the attendant conclusions and recommendations will be of equally used and applicable in all other TICs of defence laboratories.

The study is confined only to the scientists upto grade ‘D’ level were taken into consideration, because of their busy schedule approaching the senior scientist is difficult. Hence, the study confined only to the junior level scientists, Technical officers, Scientific, Technical, and Ministerial staff.
3.7 **METHODOLOGY:**

In order to achieve the objectives of the study, the following steps were followed:

3.7.1 **Step 1: Selection:**

For the present study, includes its target groups as under; Scientists upto ‘D’ level, and Technical officers, Scientific and Technical staff, Ministerial staff, others were selected for the study.

At present there are 53 laboratories and establishments of DRDO covering all the regions of the nation. In this 34 major laboratories were selected from different regions covering all over the India for the study. The total employees working at selected TICs in five zones of DRDO is 12000. Total Questionnaires circulated were 8923, out of which 7356 users responded to the questionnaires. The cadre wise distribution of responded users are 2759 Scientists, 2902 Technical officers, 1418 Staff, and 277 others personnel.

3.7.2 **Step 2:**

**TOOLS USED FOR THE PRESENT STUDY:**

Information needs have been studied using methods developed for studies in the social sciences. ‘Basically there are three main methods of collecting data either explicitly or implicitly related to users information needs viz., questioning, observation, and analysis of documentary sources. (Vij, 1986), questionnaires and interviews ‘both hold out the hope of finding out what user is thinking, especially as to attitude, preferences, opinions, and other characters not easily determined by other methods. Both assume the honesty and accuracy of intention’ (Verhoeven, 1990).
Survey method coupled with interview is used for the present study, as the problem of this study is of descriptive. To collect the responses from TICs and users following tools have been used:

i) Questionnaires on
   1. TICs data
   2. Users opinion on TICs towards defence research

ii) Interviewing

In accordance with the objectives of the study, two Comprehensive questionnaires were prepared. Questionnaire I, for the various cadres of users, Questionnaire II for the TICs. Questionnaire No. I, has 5 parts, i.e. Information regarding the Potential contributions of TICs, Methods of information dissemination, Usage of TICs towards defence research, Role of DESIDOC in supplementing the TIC services, and part five contains Users over all opinion on TICs towards defence research.

3.7.3 INTERVIEWING:

Respondents in the form of Scientists, Technical Officers, Scientific, Technical, Ministerial Staff, and others were interviewed at local level and otherwise as per their personal views regarding the role of TICs towards defence research with the problems before getting the questionnaire to be filled and after getting it filled and suggestions if any were carried.

3.7.4 STYLE OF REFERENCING: For the purpose of citations, the publication manual of the American Psychological Association (5th ed., 2001) style often preferred in the fields of social sciences were used.