

## **Chapter One**

### **Introduction**

#### **1.1 Introduction**

Research is the backbone of development in any country. It is also an important indicator of the level of development, particularly in science, in the country. Most research and documentation in developing countries are carried out in institutions of higher learning and government research institutions. Postgraduate doctoral programmes in science and technology in Malaysian universities are based on research (Rosna Taib, 1989), although there are signs of change. The results of the master and doctoral research programmes carried out in universities are documented in the form of dissertations and theses, respectively.

Information is a vital resource and plays an integral part in any research programme. With the rapid inflow of scientific information and the fast changing needs of the science scholars, postgraduate science researches are no longer restricted by the boundaries of a single well-established discipline. The increase in the amount of interdisciplinary research carried out by faculties and their graduate students, has resulted in new and different needs for library collection and services (Hurd, 1992). In order for universities to produce quality research, institutional libraries have to support the research needs of their scholars.

Studies on the trend of past and current research have to be conducted to identify the researchers' information needs and use. An analysis of the users' environment and their work demand should also be done for effective service (Al-Salem, 1989: cited by Goi, 1997). With the growing corpus of knowledge, libraries need to know the type of literature needed by its researchers, and their ability and financial capability to satisfy this need.

Allocation of sufficient resources to sustain a library is crucial because it facilitates access to the literature by the researchers. A lack of it, on the other hand, would be the greatest impediment to collection development and research. Policy makers and managers have to be aware of this. The realisation that the library is an important and dependable component for research is important, for no university can promote research without the provision of an adequate, appropriate and well-balanced collection to support its research population.

## **1.2 Statement of the Problem**

Much has been written and continues to be written on the 'difficult' times that libraries are going through. The reasons identified consistently are rising costs of materials and services, and shrinking budgets. Yet, building a suitable collection for libraries, especially institutional libraries, is a process of prime importance. Science and technology collections are complex. With scientific literature increasing rapidly, it is important to study the research trends of

postgraduate science researchers to enable the university and library administrators to plan effectively.

The present study intends to examine the trend in research activities and the sources of information used by researchers in the University of Malaya. This is done by studying the Ph.D. theses submitted to the University of Malaya by the postgraduate researchers in the sciences between 1971 and 1995. It is hoped that this would help the university and its library administrators to formulate strategic plans, and decide on the priorities in resource allocations to maintain a need-based collection to support the research needs in the sciences at the university.

### **1.3 Purpose of Study**

The study will take on a descriptive approach. The study will examine and describe trends in research activities among postgraduate science students at the University of Malaya from 1971 to 1995. It will also focus on the sources of information used by the postgraduate science students in the course of their research.

The present study hopes to analyse:

- the trends in doctoral research in the sciences submitted to the University of Malaya between 1971 and 1995.

- the distribution pattern of doctoral theses submitted in the discipline of mathematics, physics, chemistry, geology, biology, botany, zoology, physiology and microbiology submitted between 1971 and 1995.
- the preferred language used in theses writing among the science researchers.
- the types and currency of sources referenced by the science researchers in their theses.

The study covers nine disciplines in the sciences spanning over a 25-year period. This is considered adequate to indicate the trend in research activities among postgraduate students in the sciences. Such information would be of use to not only the university administrators but also to the librarians when formulating strategic plans and resource allocations.

#### **1.4 Research Questions**

The following is a list of research questions used in the study. The answers to these questions will indicate the research trends of the postgraduate science researchers.

1. Which discipline in the sciences had the most number of researches done between 1971 and 1995?
2. What is the distribution pattern of the award of scholarships and tutorship tenure amongst the different disciplines in the sciences?

3. What is the preferred language of communication of the postgraduate researchers in the sciences?
4. What are the main types of sources of information (types of documents used, journals, books) used by science postgraduate researchers?
5. How current are the journals and books used by these researchers?

## **1.5 Hypotheses**

Both evidence and informed opinion support the assumption that journals and serial publications are items most needed by scientists for they are the embodiment of the latest ideas and original research findings. Cullars (1998) studied the citation characteristics of English language monographs in philosophy and among other sources studied the use of journal articles. Liu (1990) in her doctoral thesis studied the citation process and language preference in scientific communication among Chinese physicists. Based on these studies, the following hypotheses have been formulated for the present study.

1. Postgraduate researchers in the sciences used journals as their main source of information.
2. The science researchers depend more on current journals, that is, journal articles that have a recency of between 0-10 years.
3. English is the preferred language of the science researchers at the postgraduate level.

## 1.6 Definitions

A list of the definitions used in this study is as follows:

*language dependency* - the degree to which a scholar depends on a certain language in writing his/her research paper(s).

*researcher* - someone who studies a subject in detail in order to discover new facts or test new ideas.

*scientist* - someone who works or is trained in science and whose job is to teach or do research in science.

*scholar* - someone who knows a lot about a particular subject, science or otherwise.

*scholarly communication* - a process by which scientists, scholars and researchers communicate, create knowledge through research and disseminate that knowledge either formally or informally.

*research trends* - is a change in development in research.

*thesis* - a long piece of writing based on research on a particular subject that is done as part of a Ph.D. degree.

*postgraduate* - a student doing a study or research at a more advanced level.

*citation* - reference to types of sources of information used

*information source* - sources or types of documents used (example journals, books).

*scholarship/grants* - money given mainly by the government or educational institution for a specific purpose.

### **1.7 Assumption**

The study was carried with the following assumption:

1. The doctoral theses recorded in the *Kekal Abadi*, a quarterly periodical published by the University of Malaya library (1984-1997) and *Theses and Dissertation in the University of Malaya library* (1970-1983) together are assumed to give a complete list of all the theses submitted to the University between 1971 and 1995.

### **1.8 Organization of Study**

The study will be divided into five chapters.

- Chapter One - gives an account of the purpose of the study, the problem statement, the hypotheses, the assumption, the definitions and the research questions.

- Chapter Two - reviews the literature of previous studies in the field.

The review studies the main aspects, namely the information-seeking

behaviour of scientists, the citation studies and obsolescence and language.

- Chapter Three - describes the methodology used in obtaining and analyzing the data. The descriptive approach is used as it affords greater freedom in data collection and analysis. Data collected will only be confined to the doctoral theses in the sciences submitted to the University of Malaya between 1971 and 1995.
- Chapter Four - gives an account of the findings of the study.
- Chapter Five - will be the conclusion. It will comprise a summary and discussion of the findings, the limitations of the study and suggestions for future research.