CHAPTER – I

INTRODUCTION
1.0 Introduction

For more than three centuries the print journal has been serving as the primary medium of research communication and has remained unchanged in form and function since the first scholarly journal 'Journal des Scavans' which was published in 1665. Despite its benefits to the academic and research community, the print journal has been subjected to criticism from many angles such as the peer review process, delay in publication, escalating costs, lack of selectivity, stoppage of subscriptions by libraries and commercial publishers holding copyrights (Harter and Kim, 1996 b).

While the number of journals is increasing, publishers are demanding high costs, grabbing the copyrights for the information content. Libraries are unable to meet their user needs, the scholarly communication system is undergoing a 'technological' transformation. The academic and research community is facing a new challenge of communicating their research in the context of the Internet (Koteswara Rao, 2001).

With the emergence of the Internet, publishing has become very easy, quick and cheap in a medium that can be accessed easily by everyone from anywhere. The Internet has rapidly become a global publishing platform (Hawkins, 2001) and offers unlimited prospects for publication and distribution of information in digital form. In addition, the Internet is reshaping the way in which scholars communicate with one another. Print journals are rapidly moving on-line and e-journals have become an accepted component of an academic library's journal collection. Scholars have understood the power of e-journals and seem to have accepted the new medium for communicating research ideas and results among fellow professionals.

E-journals have also become an effective and efficient mechanism for the transfer of data, information and knowledge from an author to a user (Barker, 2006). They have rapidly established themselves as a viable publication media in many fields because scholarly e-journals contain periodical articles of new discoveries of knowledge that are increasingly prolific. These are issued and published by researchers in various fields of interest. They can be accessed through online formats and can tremendously increase users' acquisition of knowledge (Ajegbomogun, 2007).
Increasingly, many libraries are now extending their 'holdings' of e-journals. Indeed, in many organizations, e-journals have become more popular than conventional paper-based journal collections (Barker, 2006) and many large collections of e-journals are now available to libraries. In examining how the academic library maintains its place as a center for information, e-journals and access to them are becoming more important.

Librarians and information workers obviously are interested in e-journals as means of providing information to their customers. At the same time, members of the profession are becoming increasingly interested in accessing e-journals that relate to their own specialist concerns.

Today's users have their information needs met via a number of options. They need not come physically to the library to use print formats but can stay at home or the office and access online library resources and services via networks or authentication methods at any time (Renwick, 2005).

With the increasing popularity of web-based access to traditional library resources, libraries which are the main facilitators in the scholarly communication system are caught in between the producers and the end-users. Moreover, librarians are being challenged to balance user demands for the new technologies with their duty as custodians of information (Robbins, McCain and Scrivener, 2006). They must pay attention not only to what kinds of information their patrons want and need, but to the formats they prefer to use to access this information.

The primary function of any university library is to support teaching, research and extension activities by making information available to facilitate the university's mission and librarians try to determine collection development policies which will make optimum use of money and space available while meeting the current and anticipated needs of library patrons. Librarians have begun seeking ways to assess the use of e-journals in order to determine how well they meet users' needs and to provide data that document accountability and the effective use of financial resources. Multiple techniques can be used for the purpose of assessment. Among these techniques, user-based techniques are the most often used and the most easily applied. As noted by Voorbij and Ongering
(2006), "only user studies can reveal the motives, opinions, wishes, and problems experienced by the users and allow library researchers to gather data on the gender, age, discipline, level of experience with electronic resources and other demographic data, and to investigate the differences in behavior and satisfaction between various user groups"(p. 223).

Whereas research scholars are the students who study at the highest level of education in each university, e-journals play a pivotal role in meeting their information needs. Therefore, having an investigation on the use of e-journals by research scholars is very important for every university.

1.2 Need and Importance of the Study

Evaluation of the resources of a library is essential in order to progress in shaping a suitable infrastructure that will guarantee access to scientific and technical information and permit universities and their libraries to maintain their lead in the provision of academic materials.

Shrinking budget of libraries, new modes and formats of information products and services contribute to the confusion and uncertainty expressed by librarians attempting to provide the best to their users.

Understanding the use pattern of e-journals helps the librarians to make the best purchasing decisions for their institutions and know what strategies can be employed to increase the accessibility and usage of e-journals though it can help publishers to design appropriate journals and services.

Although there exists a few studies on the use of e-journals and users behavior in Iran, hardly any effort has been made to study in-depth covering top universities. Therefore, the present study will attempt to know the use pattern of e-journals by research scholars in top ten university libraries of Iran. It attempts to assess the results obtained from the investment in e-journals. On the one hand, the results will provide arguments for the debate on the advantages and disadvantages of the new models of acquisition. It can be useful for the efficient management of the collection and provides
empirical evidence for library staff and the research community. Simultaneously, these results can be used to justify increases in budgets for acquisition of electronic resources.

1.3 Statement of the Problem

The present research theme is conceived under the title "Use Pattern of Electronic Journals by the Research Scholars at the University Libraries in Iran: A Study".

This study will attempt to reveal research scholars' behavior in accessing and using e-journals. It will broaden our knowledge of the use of e-journal collections and provide more effective e-journal services.

1.4 Definition of Concepts

In order to provide the meaning of the terms in the title of the study the following definitions are given for the key terms, 'electronic journals', 'research scholars', 'university library' and 'use pattern'.

1.4.1 Electronic Journals (E-Journals)

For the purpose of this research, 'electronic journals' are scholarly journals that include not only individual, web-based, full-text journals that duplicate their print counterparts, but also e-journal packages such as ScienceDirect, and indexing and abstracting services such as EBSCOhost that include complete runs of the full-text articles of selected journals (Gardner, 2001) and are subscribed by the universities and made available on the university websites.

1.4.2 Research Scholars

In this study, the term research scholars refers to students who study for Doctor of Philosophy (Ph.D.) degree.

1.4.3 University Library

According to 'Online Dictionary for Library and Information Science' (ODLIS) (Reitz, 2011), 'university library' is an integral part of a college, university, or other institution of postsecondary education, administered and funded by a university to meet
the information, research, and curriculum needs of its students, faculty, and staff. For the purpose of this study, the term 'university libraries' refer to those libraries run by universities affiliated to the Ministry of Science, Research and Technology (MSRT) in Iran.

1.4.4 Use Pattern

According to 'Merriam-Webster Dictionary' (2008), 'pattern' is defined as a reliable sample of traits, acts, tendencies, or other observable characteristics of a person, group, or institution. Further, term 'use' refers to browse, search, download, print, as well as read e-journals. The term 'use pattern' refers to when, where, why, how and to what extent research scholars use the e-journals.

1.5 Objectives of the Study

The main objective of the study is to reveal the use pattern of e-journals by the research scholars at the university libraries of Iran. The specific objectives of the study are as follows:

01. To identify the extent of access to e-journals at university libraries affiliated to the Ministry of Science, Research and Technology (MSRT) in Iran;
02. To know the level of awareness and familiarity with e-journals among the research scholars;
03. To assess the access and use of e-journals by the research scholars;
04. To identify the advantages and disadvantages of e-journals from the research scholars' perspective;
05. To understand the level of satisfaction among the research scholars with subscribed e-journals;
06. To understand the perceived importance of e-journals by the research scholars;
07. To identify dependency on usage of electronic and print journals by the research scholars;
08. To understand the preferred format of journals by the research scholars;
09. To identify the reading pattern of e-journals by the research scholars;
10. To understand problems that the research scholars face while accessing and using e-journals;
11. To assess the necessity of users training for the effective use of e-journals.

1.6 Hypotheses of the Study

Regarding the objectives of the study, the following hypotheses have been framed:

01. There is a significant difference among disciplines regarding the frequency of e-journal use.
02. There is a significant difference among age groups regarding the frequency of e-journal use.
03. There is a significant difference between males and females regarding the frequency of e-journal use.
04. There is a significant relationship between the time spent on access to e-journals and the frequency of e-journal use.
05. There are statistically significant differences between research scholars' personal satisfaction with subject coverage, number and back volumes of available e-journals.
06. There is a significant difference between research scholars’ personal dependency on print and electronic journals.
07. There is a significant difference between males and females regarding preference for electronic journals versus print ones.
08. There is a significant relationship between age and preference for electronic journals versus print ones.
09. There is a significant difference among disciplines regarding preference for electronic journals versus print ones.
10. There is a significant difference between the research scholars’ personal preference of electronic (on monitor) versus print out reading.
11. There is a significant relationship between the number of articles read and the frequency of e-journal use.
There is a significant relationship between the time spent on reading e-journal articles and the frequency of e-journal use.

1.7 Scope and Limitations of the Study

The present study covers the top ten universities in Iran and covers research scholars belonging to four disciplines. They are:

(1) Agriculture: Agriculture Machinery, Agronomy, Animal Sciences, Crop Biotechnology, Entomology, Food Sciences, Gardening and Water Engineering;

(2) Basic Sciences: Biology, Chemistry, Geology, Mathematics, Statistics and Physics.


The universities surveyed are:

(i) Amirkabir University of Technology (Tehran),
(ii) Ferdowsi University of Mashhad (Mashhad),
(iii) Iran University of Science and Technology (Tehran),
(iv) Khaje-Nasir-Toosi University of Technology (Tehran),
(v) Shahid Beheshti University (Tehran),
(vi) Shahid Chamran University of Ahvaz (Ahvaz),
(vii) Sharif University of Technology (Tehran),
(viii) University of Guilan (Rasht),
(ix) University of Isfahan (Isfahan) and
(x) University of Tehran (Tehran).
The Main reasons for choosing these universities are as follows:

1. They are the large universities in Iran based on the number of students;
2. They have a significant number of students pursuing research leading to Ph.D. degree;
3. Internet facilities are available in all departments and all students, research scholars and teachers;
4. They have access to significant number of e-journals from distinguished publishers;
5. They are multi-disciplinary universities that provide coverage of different subject areas;
6. They are located in different provinces and in different geographical positions in Iran.

1.8 Method and Material

For carrying out the present survey, the investigator conducted a thorough literature search by browsing the CD-ROM database of Library and Information Science Abstracts (LISA) and online databases such as Library and Information Science and Technology Abstracts (LISTA), EBSCOhost, Emerald and other e-dissertations and e-theses resources. All of the useable references were arranged in a classified order.

For the purpose of data collection, a structured questionnaire was designed and used. Before finalizing the questionnaire, an attempt was made to get it reviewed by two experts in the field. The suggestions thus obtained by the experts were promptly incorporated to enhance the validity of the questionnaire.

After the necessary revisions were made, preliminary questionnaire was pretested through a pilot study. The purpose of pretesting of the questionnaire is to obtain information to improve its content, eliminate ambiguity in some questions and to fine-tune the questionnaire. For this purpose in pilot study, 80 Ph.D. students were selected randomly at four departments of Ferdowsi University of Mashhad including Department of Education and Psychology, Department of Mathematical Sciences, Department of Engineering and Department of Agriculture. Based on the information elicited by the
questionnaire, it was further improved and revised in its format, content and sequence for final use in the survey. Moreover, the final questionnaire was translated into Persian. The English and Persian questionnaires are given in Appendix A and Appendix B.

In order to get the reliability of the questionnaire, Cronbach's Alpha was done on the collected data by the preliminary questionnaires in the pilot test. Cronbach's Alpha obtained as 0.70. Cronbach’s Alpha is a value between zero and one. Values near zero indicate low reliability; values near one indicate high reliability (Cronbach, 1951).

The investigator searched the university website of all above mentioned universities to find the number of research scholars in each field of study. Moreover, the investigator got the required information through different channels such as telephone or e-mail or personal communication with respective university authorities. Overall, there were around 5,300 research scholars at these universities in four disciplines (Agriculture, Basic Sciences, Engineering and Humanities).

In the second stage, the investigator searched the websites of universities under study one by one to find the research scholars’ e-mail addresses. The e-mail addresses of research scholars were found just at three universities (i.e., Ferdowsi University of Mashhad, Sharif University of Technology, and Iran University of Science and Technology). Thus, the final questionnaire was sent through e-mail to the research scholars at the mentioned universities. The respondents could easily open the attachment, supply the required information, and return the questionnaire by e-mail. The researcher completed data gathering process by e-mail reminders. A total of 1,263 e-mails were sent and totally 293 responses were received (from the first e-mail and reminders) giving 23% response rate.

Moreover, final questionnaire was distributed among research scholars at nine universities. Sharif University of Technology did not give permission for distribution of the questionnaire. Hence, data collection at this university was done through e-mail. Distribution and collection of data was done in person at various campus settings including classrooms, libraries, hostels, departments, computer centers, administration buildings and the like. In total, 1,705 questionnaires were distributed in person and 1,150
filled questionnaires were received, of which 1087 were useable giving a response rate of 64%. Overall, 1380 useable questionnaires were obtained. Further, informal interview was conducted with the research scholars to ensure clarity and authority of data. The stratified random sampling technique was used in administrating questionnaire and interview with the research scholars.

1.8.1 Data Collection Instrument

Broadly, the questionnaire had nine parts and each of these parts was covered by several questions to elicit information. Generally, there were fifty questions in these parts. The questions contained different types of question format: two way questions (yes/no), multiple choice questions and Likert scale. The Likert scale questions contained different response techniques. Some of questions were on four-point scale while others were on five-point scale according to the suitability or need of the problem. The final questionnaire mainly concerns with the aspects as noted below.

1. Part I: Background information
   This part of the questionnaire deals with individual bio-data qualifications, computer literacy, and familiarity with Internet.

2. Part II: Awareness and familiarity with e-journals
   This part of the questionnaire deals with awareness of the availability of e-journals at respective university library and familiarity with the use of e-journals.

3. Part III: Access and use of e-journals
   This part of the questionnaire deals with access and use e-journals, reasons for not using e-journals, use of listed e-journal publishers/providers, frequency, length, place, format and purpose of e-journal use, use of e-journal components, time spent for accessing, browsing and printing of e-journals, how they learned to use, the main feature used for search of e-journals and perceived ability to use e-journals.

4. Part IV: Advantages and disadvantages of e-journals
   The fourth part of the questionnaire highlights the perceived advantages and disadvantages of different features of e-journals.

5. Part V: Satisfaction with subscribed e-journals at respective university library
   This part of the questionnaire deals with satisfaction of the subject coverage,
number, and back volumes of available e-journals and adequacy of infrastructure facilities at respective university website, etc.

6. Part VI: Importance of e-journals

This part of the questionnaire deals with importance of the e-journals for research, usefulness of content of e-journals, dependency on e-journals usage in comparison with print journals.

7. Part VII: Format preference of journals

This part of the questionnaire highlights the format preference of journals by three statements.

8. Part VIII: Reading pattern of e-journals

This part of the questionnaire deals with type of reading e-journals articles (electronic or print out), the number of articles read and time spent on reading e-journals articles weekly.

9. Part IX: Problems while accessing and using e-journals

This part highlights problems while accessing and using e-journals, recommending e-journals to others, need to improve skill in the use of e-journals, need for regular training/orientation for effective accessing e-journals and preferred mode of training.

1.8.2 Techniques Used in Data Analysis

The 1380 useable questionnaires were coded after data collection. The data obtained were tabulated and analysed using the Statistical Package for the Social Sciences (SPSS) Version 16. Hypotheses are tested and findings are drawn in the light of the objectives of the investigation. Finally, the results were reported in the form of thesis. Tables, charts and figures were used wherever necessary to make the presentation clear, simple and lucid. Following statistical techniques were used: Frequency, Percentage, Mean, Standard Deviation, Chi-square Test, Independent-Samples t-test, Paired-Samples t-test and Analysis of Variance (ANOVA). The significance values that fall below the 0.05 level are accepted.
1.9 Organisation of the Thesis

The final thesis consists of seven chapters.

Chapter I: Introduction

The first chapter introduces the topic of research and establishes the need and importance of the present study. It states the research problem, definition of concepts, its objectives and hypotheses and delineates the scope and limitation of the study. Further, it presents the methodology adopted for data collection, data collection instrument and techniques used in data analysis. It also explains the organisation of the thesis briefly.

Chapter II: Electronic Journals: An Overview

This chapter presents different aspects of e-journals viz., different definitions, history and evolution, current number and growth, varieties, advantages and disadvantages, formats, components, publishers/providers, In-house databases offering e-journals in Iran, access, subscription, purchasing models of e-journals, library consortia and library consortia in Iran.

Chapter III: Review OF Literature on E-Journal Usage and User Studies

This chapter gives glimpses of studies of e-journal usage and user studies and related areas both in Iran and other countries. The review is presented according to the place of publication viz., Asia, Africa, Europe, Australia and America. Moreover, under each geographical part, the studies are presented under the following categories: awareness, attitudes and use of e-journals, comparison of use of print and e-journals, pattern of reading of e-journals, access problems and related issues to e-journals. These studies are presented in an ascending chronological order to highlight the changes in use pattern of e-journals from the early years of e-journals introduction to the present.

Chapter IV: Profile of Universities under Study

This chapter gives an overview of Iran and its higher education system. Moreover, a brief description of the universities under study with an emphasis on their central libraries is presented. The following information on each university includes location (city), a brief geographical description of the city and university, population of the city,
date of establishment of the university, number of students and faculty members, majors and levels offered, research centres (if any), departments, Ph.D. programmes, and central library (date of establishment, collections, sections, etc.)

Chapter V: Profile of Respondents

This chapter describes the background information of the respondents of the study in detail including a series of questions on the respondents’ demographic data; the university and department which they affiliated to, their field of study, gender, age group, level of education and the type of users. It also included two questions on level of computer literacy and familiarity with the use of Internet. In addition, total number of distributed and received questionnaires are presented in this chapter.

Chapter VI: Use Pattern of E-Journals

This chapter devotes to the interpretation of primary data on use pattern of e-journals. It presents various issues grouped into 11 categories. They are: (i) extent of e-journals accessibility at university libraries in Iran, (ii) awareness and familiarity with e-journals, (iii) access and use of e-journals, (iv) reading pattern of e-journals, (v) advantages and disadvantages of e-journals from the research scholars’ point of view, (vi) satisfaction with subscribed e-journals, (vii) importance of e-journals, (viii) dependency on usage of electronic and print journals, (ix) format preference of journals, (x) problems while accessing and using e-journals, and (xi) necessity of users’ training for effective use of e-journals.

Chapter VII: Findings and Conclusion

This final chapter provides the summery of findings. Further, it gives suggestion to improve the use of electronic resources, especially e-journals and suggestions for further research and conclusion.

Bibliography of the references; English and Persian questionnaires; and the list of forty-nine university libraries at Iran and extent of e-journals accessibility are provided at the end.