

## **Users' perception of Electronic Journals at Sharif University of Technology: A Case Study**

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### **Abstract**

**This study examined the research scholars' perception of electronic at Sharif University of Technology (SUT), Iran. The target population of the survey consisted of all research scholars at SUT belonging to Engineering and Basic Sciences. A structured questionnaire was designed and used to collect the necessary data. Content validity of the questionnaire was established by review of four experts in the field. Further, its reliability was confirmed by means of Cronbach's Alpha (0.85). The questionnaire was sent via e-mail and 147 useable questionnaires were received. The analysis of data indicated that SUT university libraries have not provided effective e-journals to the main users. There were statistically significant differences between research scholars' personal satisfaction with subject coverage, number and back volumes of subscribed e-journals. Further, the most interesting e-journals' features that encourage research scholars to use e-journals were up-to-date information, prompt accessibility and user-friendly interface.**

**Keywords:** electronic journals, Iran, research scholars, Sharif University of Technology, university library, users' satisfaction, users' perception,.

### **Introduction**

Electronic journals (e-journals) are regarded as important university library resources which have to be accessible through the library website. Patra (2006) believes that e-journals are an established component in the life of academic and research institutions. Today, many libraries are extending their holdings of e-journals. On the other hand, declining library budgets has made e-journals collection development more complex. Therefore, librarians need to carry out assessment of subscribed e-journals regularly to ensure the meeting of their users' information needs. Swanson (1979) stated that the totality of features and characteristics of library resources and services must be able to satisfy all users' stated or implied needs (as cited in Ezeala and Yusuff, 2011).

It was found that few studies on users' perception and satisfaction with e-resources have been conducted in Iranian universities. However, there has been no such study conducted so far at Sharif University of Technology (SUT), Iran. SUT is located in Tehran, the capital and largest city of the Islamic Republic of Iran. SUT is one of the largest engineering schools in Iran. It was established in 1966 under the name of Aryamehr University of Technology. In 1980, the university was renamed Sharif University of Technology. SUT now has a total of 300 full-time faculty members, approximately 430 part-time faculty members and a student body of about 12,000. The university offers B.S., M.S. and Ph.D. degree programs in Basic Sciences and Engineering. Each department is equipped with its own library, workshops, laboratories and computer sites (Sharif University of Technology, 2014). The libraries provide a variety of collections including e-resources like online databases, e-books, e-journals, etc. through 'Consiran' Consortium.

Therefore, an inquiry is deemed necessary to explore the users' perception with subscribed e-journals by the most frequent e-journals' users-research scholars- at SUT. The results of this study can help the university librarians for more effective e-journals' collection development.

### **Review of literature**

A review of literature revealed that there exist many studies on e-journals' user studies that can show importance of e-journals especially in academic environment. However, an attempt is made here to highlight some of more related studies with the present study chronologically. Huzaimah and Zainab (2006) stated

that most early studies between the years 1996 and 1999 indicated low actual use of e-journals while attitudes towards e-journals began to take a turn from the beginning of 2000 onwards. Using log file analysis, Eason, Richardson and Liangzhi (2000) found that the contents (both coverage and relevance) and ease of use of a system as they were perceived were the most significant factors affecting pattern of use of e-journals among undergraduates, postgraduates, researchers and academic staff at thirteen universities of United Kingdom. Users' perception of both factors were affected by a range of intervening factors such as discipline, status, habitual approach towards information management, availability of alternative e-journal services, purpose of use, etc. The results of three e-journal user studies through interviews and surveys by Stanford University Libraries, USA (2000) showed that limited content (lack of back issues) was seen as a factor for disliking use of e-journals. Furthermore, the most popular online-specific features were hypertext links to cited articles. The study conducted in Singapore at the Nanyang Technological University (NTU) by Liew, Foo and Chennupati (2000) indicated that the most reasons to prefer e-journals over print journals among graduate students were links to additional resources, searching capability, currency, availability and access ease. Another survey by Torma and Vakkari (2004) in the Finnish National Electronic Library (FinELib), Finland showed that the perceived availability was a stronger predictor of the frequency of use of its services than users' discipline. Regardless of discipline, a good perceived provision of central resources led to a more frequent use of FinELib. The satisfaction with the services did not vary with the discipline, but perceived relevance was the key predictor. A study on the users of e-journals published in a hosting system (Electronic Journal of the University of Malaya) by Huzaimah and Zainab (2006) found that the most preferred feature of e-journals was convenient to use. Further, the users regarded all general e-journals features as important or very important. The results of a survey on users' satisfaction with online databases at Shiraz University, Iran revealed that faculty members were satisfied with Elsevier, Science Direct, Ebsco and Proquest, respectively (Hayati and Hasanshahi, 2008). Salajegheh (2010) studied the extent of utilization of information centers and e-journals as well as satisfaction rate among faculty members at medical schools in Iranian medical universities. Results indicated that faculty members used e-journals more than printed journals. Satisfaction rate with databases as well as their utilization was high. The study further demonstrated that there was a link between age and satisfaction with specialized databases. There was no correlation between academic status and satisfaction with electronic databases. The effectiveness of electronic resources and services in Pakistani university libraries on the basis of users' satisfaction through a semi structured questionnaire was studied by Mirza and Mahmood (2012). They concluded that Pakistani university libraries were offering effective electronic resources and services to their users. In Wu and Chen's (2012) study, the level of graduate students' satisfaction varied from 70 to 95 percent in general. Science and technology students showed higher satisfaction with the documents available in digital format from the library than other disciplines.

The above studies indicated that the assessing e-journals users' perception and satisfaction with available e-journals has been regarded as an important issue by the researchers in different countries. Further, several research methodologies such as questionnaire, interview and transaction log analysis have been used for this assessment. The present study attempts to examine the research scholars' perception and satisfaction with subscribed e-journals at Sharif University of Technology, Iran that has not been explored by the researchers.

### **Methodology**

The target population of this study consisted of all research scholars (680) at SUT belonging to Engineering (85%) and Basic Sciences (15%). A structured questionnaire was designed and used to collect the necessary data. Content validity of the questionnaire was established by review of four LIS experts. Further, its reliability was confirmed by means of Cronbach's Alpha (0.85). The questionnaire was sent via e-mail to the all research scholars and 147 useable questionnaires were received (from the first e-mail and reminders) giving 22% response rate. The appropriate statistical measures have been adopted in the analysis of data using SPSS (version 20). The significance values that fall below the 0.05 level were accepted.

### **Objectives**

The study aims to achieve the following objectives:

- To identify the advantages and disadvantages of e-journals from the research scholars' perspective;
- To determine the level of research scholars' satisfaction with subject coverage, number and back volumes of subscribed e-journals by the library.

### **Hypothesis**

There are statistically significant differences between research scholars' personal satisfaction with subject coverage, number and back volumes of subscribed e-journals.

### **Findings**

#### **Characteristics of the respondents**

Most respondents were men, 90.5 percent. The largest age group was between twenty six to thirty years of age (68%). This group was followed by the other age groups, respectively: thirty one to thirty five (22%), and twenty one to twenty five (10.2%). The majority of the respondents belonged to Engineering (87.8 percent) and 12.2 percent of the respondents belonged to Basic Sciences (Table 1).

Table 1. Characteristics of the respondents

Variables		%
Gender	Male	90.5
	Female	9.5
Age group	21-25 years	10.2
	26-30 years	68
	31-35 years	22
Discipline	Engineering	87.8
	Basic Sciences	12.2

#### **E-journals advantages and disadvantages**

The respondents were requested to indicate how strongly they agree or disagree with features of e-journals under three sections (i.e., general features, availability and accessibility features; and browsing features) on a five-point scale. Since, the codes assigned to these scales were from 1 to 5, the accepted mean score for these options was 3. Therefore, the options having a mean score of more than 3 could be regarded as advantages and options having mean score of less than 3 as disadvantages of e-journals from the research scholars' point of view. It should be noted that e-journals advantages and disadvantages used in this study were mostly extracted from the Galyani Moghaddam and Talawar's study (2008).

#### **E-Journals' general features**

Data analysis from Table 2 depicts that, the availability and accessibility features considered as advantages of e-journals by the respondents were ranked as follows (mean > 3): 'currency (up to date information)', 'search ability/search capability', 'downloading possibility', 'retrieval possibility', 'full text retrieval', 'convenience', 'link to related items', 'hypertext links', 'credibility', 'accuracy', and 'connecting people'.

Table 2. E-journals' general features

Features	Mean	Std. deviation
Currency(up to date information)	4.81	.58
Search ability/search capability	4.75	.63
Downloading possibility	4.56	.80
Retrieval possibility	4.46	.68
Full text retrieval	4.34	1.01
Convenience	4.13	1.05
Link to related items	3.91	.84
Hypertext links	3.86	.83
Credibility	3.74	1.02
Accuracy	3.65	.92
Connecting people	3.42	.98

***E-journals' availability and accessibility features***

As Table 3 demonstrates, among e-journals' availability and accessibility features, the following features were regarded as advantages of e-journals from the research scholars' point of view, respectively (mean > 3): 'prompt accessibility (7/24 hours a day)', 'desktop availability', 'free access', and 'multiuser access'. However, the following features were considered as disadvantages, respectively (mean < 3): 'long-term access unsolved (archiving)', 'requiring log in process', 'requiring training', 'depending on network', and 'requiring special equipment' (Table 3).

Table 3. E-journals' availability and accessibility features

Features	Mean	Std. deviation
Prompt accessibility	4.54	.73
Desktop availability	4.06	.95
Free access	3.96	1.25
Multiuser access	3.56	1.08
Requiring training	2.98	.97
Depending on network	2.94	1.13
Requiring special equipment	2.72	1.02
Requiring log in process	2.09	.99
Long-term access unsolved (archiving)	2.00	.83

### ***E-journals' browsing features***

From Table 4, it is seen that 'user-friendly interface' was regarded as the first advantage and it was followed by the other features, respectively: 'technological possibilities', 'graphic quality', 'reading on monitor'. However, 'lack of standardized formats' was as a disadvantage from the research scholars' perspective.

Table 4. E-journals' browsing features		
Features	Mean	Std. deviation
User-friendly interface	4.15	.75
Technological possibilities	3.83	1.07
Graphic quality	3.69	.91
Reading on monitor	3.39	1.18
Lack of standardized formats	2.62	.96

### ***Level of satisfaction with the subject coverage, number and back volumes of subscribed e-journals***

The respondents were asked to state the extent of satisfaction with subject coverage, number and back volumes of subscribed e-journals on a five-point scale. It is clearly shown from Table 5 that the respondents were "highly satisfied" with subject coverage (18%) and then with number (7.2%) and back volumes of e-journals (6.5%), respectively. Conversely, the respondents were firstly unsatisfied with back volume (13.7%), number (5.8%) and subject coverage of e-journals (4.3%), respectively. In comparison, it can be said that the level of satisfaction from 'moderately satisfied' to 'highly satisfied' with subject coverage, number and back volumes of subscribed e-journals at their respective university library were 80.6%, 66.2% and 52.5%, respectively. Concerning mean score, the respondents were satisfied with subject coverage of subscribed e-journals moderately (mean>3). However, they were satisfied less than medium level with number and back volumes of available e-journals (mean <3).

Table 5. Satisfaction with subscribed e-journals (%)						
Level of satisfaction	Subject coverage		Number		Back volume	
	%	Cum. %	%	Cum. %	%	Cum.%
highly satisfied	18.0	18.0	7.2	7.2	6.5	6.5
satisfied	37.4	55.4	21.6	28.8	13.7	20.1
moderately satisfied	25.2	80.6	37.4	66.2	32.4	52.5
little extent satisfied	15.1	95.7	28.1	94.2	33.8	86.3
unsatisfied	4.3	100	5.8	100	13.7	100
Total	100		100		100	
	Mean=3.49		Mean=2.96		Mean=2.65	
	SD=1.08		SD=1.01		SD=1.08	

Note: cum=cumulative, SD=standard deviation

### ***Hypothesis testing***

Research hypothesis: There are statistically significant differences between research scholars' personal satisfaction with subject coverage, number and back volumes of subscribed e-journals.

Paired-samples t-test was done to test significant differences between the following e-journal satisfaction variables including: satisfaction with subject coverage and number of subscribed e-journals, satisfaction with subject coverage and back volumes of subscribed e-journals, satisfaction with number and back volumes of subscribed e-journals. Table 6 shows the results of the Paired-samples t-test.

Table 6. Comparison of satisfaction with subject coverage, number and back volumes of e-journals via paired sample t-test

Variables	Paired differences					t	df	Sig. (2-tailed)
	Mean	SD	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
satisfaction with subject coverage - satisfaction with number (pair 1)	-.53	.79	.06	-.66	-.39	-7.92	138	.000
satisfaction with subject coverage - satisfaction with back Vol.(pair 2)	-.84	1.28	.10	-1.05	-.62	-7.71	138	.000
satisfaction with number - satisfaction with back Vol.(pair 3)	-.30	1.06	.09	-.48	-.13	-3.41	138	.001

Note: SD=Standard deviation, df=degree of freedom, Sig=significance, No response=9

It is seen from Table 6 that there was a statistically significant difference in satisfaction with subject coverage compared to the satisfaction with number of subscribed e-journals ( $t=-7.92$ ,  $df=138$ ,  $p=0.000<0.05$ ). Further, there was a statistically significant difference in satisfaction with subject coverage compared to the satisfaction with back volumes of subscribed e-journals ( $t=-7.71$ ,  $df=138$ ,  $p=0.000<0.05$ ). In addition, difference between satisfaction with number and satisfaction with back volumes of subscribed e-journals was statistically significant ( $t=-3.41$ ,  $df=138$ ,  $p=0.000<0.05$ ). Therefore, the research hypothesis was supported. It means that research scholars' personal satisfaction with subject coverage, number and back volumes of subscribed e-journals differed significantly. In other words, the research scholars were firstly satisfied with subject coverage, secondly with number, and thirdly with back volumes of subscribed e-journals.

### Discussion and conclusion

This study provided a picture of the research scholars' perception of electronic at Sharif University of Technology, Iran. All of e-journals general features were regarded as advantages from the research scholars' viewpoint. Furthermore, it was found that 'currency (up-to-date information)' as the main e-journals' general feature and 'connecting people' as the least one were perceived by the research scholars at SUT. Similar results have been reported by several studies (e.g., Liew, et al., 2000; Galyani Mogaddam and Talawar, 2008; Omotayo, 2010). Regarding e-journals availability and accessibility features, the major advantage of e-journals was perceived to be 'prompt accessibility'. This result is in accordance with the results of Galyani Mogaddam and Talawar, 2008; Liew, et al., 2000; Monopoli, et al, 2002; Omotayo, 2010. However, 'long-term access unsolved (archiving)' was perceived as the main disadvantage of e-journals. This result has been also reported in numerous studies (Rusch-Feja and Siebeky, 1999; Stanford University Libraries, 2000; Wolf, 2001; Dilevko and Gottlieb, 2002). Concerning e-journals browsing features; 'user-friendly interface' was regarded as the main advantage and 'lack of standardized format' as a disadvantage from the research scholars' perspective. In sum, most interesting features of e-journals that encourage research scholars to use e-journals were 'up-to-date information', 'prompt accessibility' and 'user-friendly interface'. While, 'long-term access unsolved' and 'lack of standardized formats' were perceived as the main reasons to discourage research scholars from using e-journals.

Another finding was that the research scholars were satisfied with subject coverage of e-journals at moderate level and they were satisfied with back volumes and number of subscribed e-journals less than medium level. Moreover, there were statistically significant differences between research scholars' personal satisfaction with subject coverage, number and back volumes of subscribed e-journals. In other words, the research scholars were firstly satisfied with subject coverage, secondly with number, and thirdly with back volumes of subscribed e-journals.

The findings clearly indicated that attitude toward e-journals was positive among SUT research scholars. However, current online access to e-journals have not meet the expectations of the research scholars at SUT. In other words, SUT university libraries have not provided effective e-journals to their main users. Since the SUT offers Ph.D programs in two major disciplines and numerous fields of study, the university libraries should provide access to e-journals in a good number and back volumes of e-journals as well as

appropriate subject coverage. Therefore, the provision of e-journals has to be continued by SUT university libraries concerning users' needs and preferences so it would increase use of e-journals among SUT research scholars and users' satisfaction. With the increasing availability of e-journals and the use of electronic materials by the users at SUT, preferences and their needs change over time, so doing such assessment is suggested on a regular basis at SUT.

Based on weighing the e-journals' features, the following recommendations were made:

- -Publishers should standardize e-journals formats and consider initiatives for the long term access to e-journals, as well as improve e-journals' user-friendly interface;
- -University libraries at SUT should continue to provide e-journals along with print journals until long term access to electronic versions is more secured; take into account providing access to e-journals through IP authentication that could be more convenient for the users; provide appropriate hardware, software and high speed Internet that warrants prompt access to e-journals.

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