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# Attitudes towards the Internet: A Survey of LIS Professionals in Pakistan,

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## Introduction

The development of the Internet during the past four decades has had a profound impact on society in general, and on the field of library and information science in particular. This technology has involved processes, functions, services, media and information resources: the library as a whole (Melchionda, 2007). Its use has changed the fundamental roles, paradigms, and organizational culture of libraries and librarians. Today, they are using it to provide library and information services to library clients. It is being used to provide access to electronic library collections, electronic reference services, electronic document delivery, and communicate with library users. Hundreds of discussion groups on various topics related to library and information work, electronic journals, and Web sites are also available on the Internet. Therefore, library professionals also have an opportunity to use the Internet for professional development and upgrading their skills.

Pakistan was connected to the Internet in 1993. According to World Internet Statistics, there were 18.5 millions Internet users in Pakistan in June 2009 with 10.6 percent penetration rate in the population. This technology has been spreading tremendously during recent years as the penetration rate was only 0.1 percent in the year 2000 and 7.2 percent in 2006 (Internet World Stats, 2009). As in other public and private organizations the Internet is common in libraries. The government has provided Internet connectivity to the libraries of all universities and other institutions of higher learning. Large public and special libraries have also been provided with this facility. For many years, library schools in the country have been training their students in using the Internet services like World Wide Web, email, chatting, etc. Some library associations have also organized Internet training sessions for practicing librarians. There are a number of email discussion groups maintained by LIS professionals (the largest one, Yahoo based 'plagpk,' established in 2000, has 2550+ members). The Internet technology is used by a number of LIS professionals in Pakistan but no study has been conducted to assess their response to this facility. This study is an attempt to fill the gap in literature.

## Literature Review

Librarians were among the early users of the Internet. Libraries began automating and networking their catalogs in late 1960s. Later the Internet was found helpful in other library functions and services. It became more popular in libraries in the early 1990s when the World Wide Web was made available. A brief review of the literature related to the use and attitude of library and information professionals towards the Internet in various parts of the globe is presented here.

In 1992, Ladner surveyed 54 special librarians in various countries and found that 93 percent of them used the Internet for electronic mail. They found this technology useful because "it provides a convenient, timely, non-disruptive, and inexpensive mechanism for communication with their colleagues throughout the world." In the same year, Olson's survey of 130 university reference librarians in Australia revealed that 23% were of the view that the Internet had no value at all in helping them complete their daily reference tasks, while another 61% said that the Internet was only of moderate value in aiding them with their daily reference duties. Only 16% described it as 'very useful' (Olson, 1995). Schilling and Wessel (1995) surveyed reference librarians working in 103 academic health sciences libraries in the United States and Canada. Of all participating libraries 102 had staff access to the Internet but all reference librarians were not daily users of it. Commonly cited resources and activities which were most useful in daily reference routines included telnet (87%). Most were of the view that the Internet was useful in reference department daily routines (75%). In a study of 23 American catalogers, conducted by Long (1997), it was found that there were four broad areas in which catalogers used the Internet, (a) searching the OPACs of other libraries for bibliographic/ authority/ holdings information, (b) communicating with colleagues and experts in other fields, (c) access to a variety of cataloging documentation and publications, and (d) performing authority work.

Hollis (1998) interviewed six academic librarians in England to discover how much use was being made of the Internet for acquisitions work. The librarians did recognize the importance of the Internet and realized that there were benefits in using it to aid their daily work. Singh (1998) reported the findings of a survey of 83 Malaysian librarians. Ninety percent of them were using Internet for work-related purposes. All used the WWW, with the majority using it at least once a day, while 97% used e-mail, 62% used Telnet, 32% used FTP and 28% used newsgroups. A vast majority regarded the Internet as essential tool for librarians and felt that it had contributed to increased efficiency in their workplace. In a survey of 156 authors of eight electronic and print LIS journals, Zhang (1999) found that e-mail was the most used tool, while Web browsers were the second most used Internet tool. Next to these tools were mailing lists, Internet search engines, Telnet, online databases and newsgroups. FTP and Gopher were the least used tools reported. In a survey of 47 library professionals of 11 countries in Sub-Saharan Africa, Chisenga (1999) found that 72% had Internet access while 28% had access to only email facility. Eighty-one percent were participating in discussion lists, 44% used Telnet facility and 31% used e-journals.

Dabirashtiani (2000) conducted two surveys of law librarians with 82 (in 1997) and 57 participants (in 2000). The respondents received an average of 70 emails per day in 1997 which increased to above 100 in 2000. They spent 1.35 hours per day on the Internet in 1997 which increased to 3.5 hours per day in 2000. The study concluded that "librarians are increasingly heavy Internet users, satisfied overall with the Internet, but not happy with the traffic jams on the information superhighway" (p. 1). Curry and Harris (2000) interviewed 14 reference librarians within a large British Columbia public library consortium about their views of using the World Wide Web as a reference tool, and found that, according to the majority of librarians, the Web had a positive effect on reference work. Stover (2000) conducted a qualitative study of 41 reference

librarians in the United States. He found that most of the participants were enthusiastic about using the Internet. "A large majority (73 percent) agreed that the Net is a helpful communication tool in their daily professional work. Several respondents mentioned its usefulness in communicating with other professionals (through both listservs and private e-mail), in reference and research services and even in teaching" (p. 45). A survey of 655 rural libraries across the U.S. indicated that 92 percent of librarians used the Internet to answer reference questions (Flatley, 2001). Janes (2002) surveyed 648 reference librarians working in public and academic libraries of the United States, asking them about their experiences with and attitudes towards the use of digital and networked technologies and resources in reference work. A large majority used email (79%) and WWW forms (47%) for receiving and answering reference questions.

In a survey of 36 professional librarians at the Universities of Zimbabwe and Zululand, Mugwisi and Ocholla (2003) found that e-mail and the Web were used most for work and personal use, while Telnet, other library OPACs and e-journals were used most for work purposes. Spacey, Goulding and Murray (2004a) measured the attitudes of public library staff to the Internet. The participants were 964 employees from 26 public library authorities in the UK. The majority of respondents used the Internet on a daily basis (64.5%). The respondents were appreciative of the overall usefulness of the Internet at work and its capability to improve the quality of work they produced and in enhancing their effectiveness at work. The majority felt their use of the Internet at work was quite positive, pleasant, enjoyable and necessary. In another paper, the same authors considered some characteristics of staff which influence attitudes towards use of the Internet in the library workplace. "Whilst the gender and age of staff did not prevent Internet usage, women and older staff were less confident about their skills, with the later group perceiving the Internet as more difficult to use than the younger staff" (Spacey, Goulding & Murray, 2004b, p. 275). Blummer (2005) surveyed 15 acquisition librarians. The study found the use of email, Web sites, online book databases, publisher's catalogs on the Internet, and integrated library systems to facilitate collection development and acquisitions activities.

Jay and Webber (2005) studied the impact of the Internet on delivery of reference services in English public libraries. Their sample included 30 library authorities. All the respondents had used e-mail for receiving and/or answering reference enquiries. According to most of the respondents, "Internet-based resources are, in particular, seen as making reference work more accessible and less difficult. No respondent disagreed with the opinion that they had also made reference work more efficient and more effective" (p. 31). Mudawi (2005) surveyed 111 Sudanese librarians on their use of the Internet and email. Most of the participants used the Internet for chat sessions, checking emails and surfing professional sites. Semertzaki (2008) conducted a survey of 87 librarians in Greece. She found that 97 percent respondents had Internet access at their libraries. All but three had email addresses. Major reasons for using the Internet were downloading documents, document delivery and answering reference questions. Ninety-one percent librarians used the Internet more than once per day. Most of them (76%) were self-educated in using the Internet and they felt they required more training (74%).

The review of literature shows that the LIS professionals both in developed and developing world have been using various services and facilities of the Internet and they have a positive attitude towards this technology. They have been using these facilities in their professional (collection development, acquisition, classification, cataloging, reference, etc.) as well as personal life (communication with colleagues and users, career development, etc.). A significant increase in their extent of use and strength of attitude towards the Internet is seen with the passage of time. Although LIS professionals faced some problems in using the Internet but they have been overall satisfied with this technology.

## Objectives and Hypotheses

This study was conducted to achieve the following objectives:

1. To survey the access to and use of the Internet by library and information science (LIS) professionals in Pakistan
2. To assess the attitude of LIS professionals towards various facilities and services of the Internet
3. To explore relationship between LIS professionals' attitude towards the Internet and their personal and Internet access and use related variables
4. To accomplish the objective no. 3 the following null hypotheses were decided to test:

Ho1 – There is no relationship between LIS professionals' attitude towards the Internet and their type of institution.

Ho2 – There is no relationship between LIS professionals' attitude towards the Internet and their gender.

Ho3 – There is no relationship between LIS professionals' attitude towards the Internet and their age group.

Ho4 – There is no relationship between LIS professionals' attitude towards the Internet and the availability of Internet facility at their offices.

Ho5 – There is no relationship between LIS professionals' attitude towards the Internet and their experience of Internet use.

Ho6 – There is no relationship between LIS professionals' attitude towards the Internet and their frequency of Internet use.

Ho7 – There is no relationship between LIS professionals' attitude towards the Internet and their perceived skills in Internet use.

Ho8 – There is no relationship between LIS professionals' attitude towards the Internet and their formal training in using Internet.

## Method

This study was based on a questionnaire survey. A data collection instrument was developed with the help of literature review and improved after pilot testing. It included questions on demographic information, experience and frequency of Internet use, perceived skills and training in Internet use. A 5-point ratio scale (ranging from 1 = 'not useful' to 5 = 'very useful') was used to measure perceived usefulness of 20 facilities and services of Internet in the LIS professionals' official and personal work. The Cronbach's Alpha value for this scale was .94 which shows very high internal consistency and reliability of the scale.

The questionnaire was distributed through plagpk listserv (the oldest and largest email discussion group for Pakistani LIS professionals). The questionnaire was also placed on Survey Monkey (a common free software to create and conduct Web based surveys) for convenience of the respondents. After two reminders, 227 usable questionnaires were received. The data were analyzed with the help of SPSS (version 16.0).

## Results and Discussion

### *Demographic Profile of the Participants*

All participants were serving LIS professionals. They were affiliated to academic, public and special libraries. Most of them were from academic libraries (55%). Some were also from national library, LIS schools and information centers. A majority was male with 21 to 30 years of age. The second largest age range was 31 to 40 years (Table 1).

Table 1. Demographic profile of participants (n=227)

Variables	Frequency	Percent
Institution type		
Academic Library	124	55
Public Library	33	15
Special Library	54	24
Other	16	7
Gender		
Male	149	66
Female	78	34
Age		
21-30	96	45
31-40	69	32
41-50	27	13
51-60	17	8
60+	6	3

#### *Internet Access and Use*

Data on the access to and use of Internet by the participants of this study (Table 2) show that a large majority had Internet facility at their offices (93%). Above half of the respondents had been users of the Internet for six to 10 years. A large majority of the respondents (79%) were daily users of this technology. Sixty-one percent of them perceived that their skills in using Internet were good while the perception of 34 percent was excellent. Sixty percent of them received formal training in using the Internet technology.

Table 2. Internet access and use

Variables	Frequency	Percent
Internet facility at office		
Yes	210	93
No	17	7
Experience of Internet use		
Upto 5 years	71	33
6-10 years	109	51
11 years and more	34	16
Frequency of Internet use		
Almost every day	179	79
Two or three times a week	32	14
About once a week	16	7
Perceived skills in Internet use		
Excellent	77	34
Good	137	61
Weak	12	5

Formal training in Internet use		
Yes	136	60
No	91	40

The results show that, despite of poor economic conditions in the country, the Internet technology is very common in LIS professionals in Pakistan. They have an easy access to this in their offices. Most of them are new but very frequent users. They feel comfortable in using this technology. The data also reveal that most of the participants of this study have had an opportunity to get formal training in using the Internet. The participants of this study were contacted through e-mail and Internet meaning that they were already users of these technologies. The non users were not invited to participate. The results on the frequency of use with good skills are very encouraging regarding the adoption of these state of the art technologies in the field of librarianship in a developing country.

#### *Attitude Towards Internet*

A list of 20 Internet based facilities and services were provided to the participants to show their attitude towards them. Using a 5-point scale they rated their perceptions on the usefulness of these technologies in their professional and personal lives. A Mean wise ranked list is given in Table 3. The results reveal that the participants found all facilities and services of Internet useful in their work. This demonstrates a very positive attitude of LIS professionals in Pakistan towards Internet. The most favorite services were Web search engines and e-mail. The National Digital Library by the Higher Education Commission was also popular in LIS professionals. The least favored facilities include blogs, chatting and Gopher. The reason of this perception might be the lack of awareness or less use of these services in the LIS professionals. A Mean score for the total of 20 items (4.02) shows that the participants found the Internet based facilities and services as 'mostly useful' in their professional as well as personal lives.

Table 3. Perceived usefulness of the facilities and services of Internet

Rank	Internet-based Resource / Facility	N	Mean	SD
1	Web search engines	221	4.57	.798
2	E-mail	224	4.50	.863
3	HEC National Digital Library	213	4.43	.927
4	Online reference sources	209	4.29	.964
5	Online indexing, abstracting and full text databases	206	4.27	1.032
5	Online library catalogs (OPACs)	211	4.27	1.078
7	Open access electronic journals and magazines	216	4.19	1.014
8	Online newspapers	218	4.16	.982
9	Virtual libraries	204	4.13	1.024
10	Other libraries' websites	203	4.07	.995
11	Online books	210	4.00	1.074
12	Web directories / Subject directories	197	3.95	.994
13	Online bookstores / publishers	207	3.93	1.151
14	File Transfer Protocol (FTP)	192	3.83	1.150
15	Online audio, video and multi-media collections	197	3.80	1.128
16	Listserve / Discussion groups	196	3.73	1.091
17	Telnet	147	3.52	1.106
18	Blogs / Weblogs	155	3.37	1.145
19	Chatting	191	3.19	1.235

20	Gopher	127	3.02	1.263
	Total	227	4.02	.704

Note. 1= Not useful, 2=Somewhat useful, 3=Useful, 4=Mostly useful, 5=Very useful

#### *Relationship Between Internet Attitude and Selected Variables – Hypotheses Testing*

Inferential statistics was applied to explore relationship between LIS professionals' attitude towards the Internet and their personal and Internet access and use related variables. The results are combined in Table 4.

One-Way ANOVA was calculated to see the difference in attitude based on the respondents' institution type. 'F' ratio (1.288) and 'p' value (.279) show that no such difference was found. Therefore, null hypothesis 1 is accepted.

An Independent Samples 't' test was calculated to see the difference in attitude based on the respondents' gender. The values of 't' (1.061) and 'p' (.290) show no such difference. Therefore, null hypothesis 2 is also accepted.

One-Way ANOVA was calculated to see the difference in attitude based on the respondents' five age groups. 'F' ratio (.959) and 'p' value (.431) show that no such difference was found. Therefore, null hypothesis 3 is accepted.

An Independent Samples 't' test was calculated to see the difference in attitude based on the availability of Internet at respondents' offices. The values of 't' (.236) and 'p' (.816) show no such difference. Therefore, null hypothesis 4 is also accepted.

Table 4. Hypotheses testing

Variables	Mean	SD	Statistics	Sig.
Institution type			F = 1.288	.279
Academic Library	4.01	.647		
Public Library	3.83	.989		
Special Library	4.10	.654		
Other	4.17	.567		
Gender			t = 1.061	.290
Male	3.98	.708		
Female	4.08	.696		
Age			F = .959	.431
21-30	4.04	.652		
31-40	4.00	.703		
41-50	3.80	.931		
51-60	3.93	.706		
60+	4.37	.678		
Internet facility at office			t = .236	.816
Yes	4.02	.706		
No	3.98	.701		
Experience of Internet use			F = 4.029	.019*
Upto 5 years	3.94	.785		
6-10 years	4.05	.547		
11 years and more	4.31	.515		
Frequency of Internet use			F = 4.256	.015*



Almost every day	4.08	.647		
Two or three times a week	3.85	.796		
About once a week	3.63	.958		
Perceived skills in Internet use			F = 5.350	.005**
Excellent	4.19	.590		
Good	3.96	.724		
Weak	3.58	.908		
Formal training in Internet use			t = 2.329	.021*
Yes	4.11	.604		
No	3.88	.816		

\* Significant at  $p < .05$ , \*\* Significant at  $p < .01$

One-Way ANOVA was calculated to see the difference in attitude based on the respondents' experience of Internet use. 'F' ratio (4.029) and 'p' value (.019) show that there was a difference in the Internet attitude of the respondents at .05 level of significance. In this case, null hypothesis 5 is rejected. A post-hoc LSD analysis reveals that more experienced users (11 years and more, Mean = 4.31) had more positive attitude towards Internet than less experienced users (Mean = 3.94 and 4.05).

One-Way ANOVA was calculated to see the difference in attitude based on the respondents' frequency of Internet use. 'F' ratio (4.256) and 'p' value (.015) show that there was a difference in the Internet attitude of the respondents at .05 level of significance. Therefore, null hypothesis 6 is also rejected. A post-hoc LSD analysis found a difference between daily and weekly users. Daily users (Mean = 4.08) had more positive attitude towards the Internet than weekly users (Mean = 3.63).

One-Way ANOVA was calculated to see the difference in attitude based on the respondents' perceived skills in Internet use. 'F' ratio (5.350) and 'p' value (.005) show that there was a difference in the Internet attitude of the respondents at .01 level of significance (a stronger relationship). Therefore, null hypothesis 7 is rejected. A post-hoc LSD analysis shows that the professionals with excellent perceived use skills (Mean = 4.19) had more positive attitude towards Internet than the other two groups (Mean = 3.96 and 3.58).

An Independent Samples 't' test was calculated to see the difference in attitude based on the respondents' formal training in the use of Internet. The values of 't' (2.329) and 'p' (.021) show a difference in the Internet attitude of the respondents at .05 level of significance. Therefore, null hypothesis 8 is rejected. The participants who got formal training in the use of Internet had more positive attitude towards Internet (Mean = 4.11) than the participants with no such training (Mean = 3.88).

The results of inferential statistics mention that among eight null hypotheses four are accepted and four are rejected. The analysis clearly shows that personal variables have no relationship with the LIS professionals' attitude towards Internet. On the other hand, variables related to the use of Internet have significant relationship with the attitude. Users with more experience, more frequency of use, excellent use skills and having training in Internet use have found this technology more useful for their professional and personal work. Their attitude towards facilities and services of the Internet is more positive than others.

## Conclusion

This study reveals that library and information professionals working in

all types of institutions in Pakistan paid a warm welcome to the Internet technology. Their attitude was very positive towards Internet based facilities and services. They found these tools very useful in their professional and personal work. Most of them had Internet facility at their offices. It was found that the institution type, gender and age of the research participants had no effect on the strength of their attitude towards Internet. However, experience, frequency, level of perceived skills and training in the use of Internet had strong effect on the extent of participants' attitude.

The participants of this study were already users of the Internet and e-mail. The rest were not studied. Keeping in view the findings of this study, measures should be taken to provide Internet facility to all LIS professionals in the country. Library employers, LIS schools and professional associations should provide more extensive Internet training at pre- and in-service levels. Better skills of LIS professionals in using Internet technology will definitely enhance variety, efficiency and quality of the services they render to their clients.

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