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Internet Use Behaviour of the LIS Community in Pakistan

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Introduction

Information and Communication Technology (ICT) has brought many revolutions in the human life. One very important, impressive and effective revolution is the enhancement in the speed and span of information production, sharing and recycling. It has changed the basic concepts of proprietorship into sharing and preservation into access. Library science is among the fields which have been influenced by this revolution up to a great deal. Library science has been transformed into information or library and information science (LIS). Libraries have been transformed into information centres. Formal tools and techniques have been replaced by the modern technologies. Information and communication technology has become an integral part of the modern libraries. Databases are replacing the huge amounts of inventories. Resource sharing has become a necessary requirement and is easier through modern techniques. The previously required basic skills have also been of lesser primary requisites. Along with strong and in depth knowledge of cataloguing and classification skills, nowadays, know how of databases, copy catalogue and reaching the sources available online has also taken an important place. Lengthy and complex subject headings have been replaced by the keywords. It has also transformed the overall routines, activities and behaviours of the LIS professionals. At the time, there is no concept of an effective, efficient and impressive library service without the ICT aids. Advanced countries are no doubt, ahead in this area but the gap, known as *digital divide* that had been between advanced countries and developing countries is eliminating and being abridged with the passage of time. Internet connectivity has become a basic requirement for the libraries and LIS professionals. As mentioned earlier, it has transformed the behaviour of the LIS professionals too. The use of computers was started in Pakistani libraries during 1987 (Mahmood, 1996). The Internet was introduced to general public and organizations in Pakistan during the year 1991, previously used only by some multinational companies and airline industry; some of the libraries were also among the organizations that embraced this technology during the mid 1990s. In the mid of 1999, the number of Internet users was between 60 to 70 thousands, which was expected to reach up to 200,000 with an evident growth of 8-9% per month (Saeed et al., 2000). According to Mahmood and Shafique (2007), a rapid growth had been seen in the ICT during last few years. In January, 2007, Pakistan Telecommunication

Authority reported the number of Internet users exceeding 12 millions with 1,898 Internet cities in Pakistan. There were 160 cities in Pakistan which had been provided with wireless local loop services, having 1.57 million subscribers, increasing from 81, 030 only within a period of two years. This data shows a rapid and heavy impact of the ICTs on the Pakistani society. The society is emerging into an information society. Libraries, being an important part of the society and library personnel being the important service provider to this emerging information society have also been in a transition phase.

Internet is one of the most important and effective tools and resource in ICT. Internet is such an information super market that when you enter it to purchase or acquire some thing of your need, there are so many options available to satisfy your need exactly and relevantly that you thought of one thing and got some thing else. You wanted to get some thing from vegetables but after entering the market, you saw the fruits with such a packaging and display that they attracted your attention and you spent all of your money and time on browsing selecting and acquiring them and forgot your basic need that drove you to this market for a while. Therefore, a need was felt to conduct a study to know how connected and in contact with other world are the people associated with profession of information in Pakistan. This study has been conducted to know the Internet use behaviour of the LIS professionals in Pakistan. It has been tried to include all the segments and parts of the LIS community from Pakistan in this study. The population includes the faculty, the practicing librarians in different capacities, the library support staff and the graduate students who are the potential professionals in the coming days.

Objectives and Methods

This study has been designed to serve the following objectives:

- To know the status of Internet access and use facilities in the libraries of Pakistan.
- To develop the understanding and behaviour of library and information science (LIS) professionals regarding Internet use and the contents.
- To know the level of online assistance by LIS personnel in performing their technical / professional responsibilities.
- To know the online communication trends of LIS community in Pakistan.
- To find out the prospects and possibility of online surveys' success among the LIS personnel in Pakistan.

A simple questionnaire consistent of 15 main and some sub questions was developed and uploaded on World Wide Web (www). The questionnaire was a blend of close ended questions with some options and freedom of entering relevant data by respondents. A message through three popular online list serves of LIS professionals in Pakistan was delivered with a request to respond this questionnaire. These list serves are: Pakistan Library Automation Group (PLAGPK), Pakistan Library Cooperation Group (LIBCOOP) and Pakistan Librarian Welfare Organization (PLWO). PLAGPK is hosting 2781 members, LIBCOOP's members are 737 and PLWO members are 1030 in number (Yahoo, 2010). This is noteworthy that almost all the members overlap in these list serves. All the LIS community using Internet and connected with other colleagues through any online sources was the target population. No sampling was made and it was open to all LIS professionals and students who use ICT. A total of 198 responses were received within three months time after sending a reminder at all three lists. When analyzed the responses, it was revealed that 62 responses were incomplete and were not usable which were discarded. 136 questionnaires were properly filled and responded. These 136 responses were sent by the LIS faculty, professional library practitioners, some paraprofessionals with master degrees in LIS and the LIS graduate students.

Literature Review

This section presents a review of literature available on the topic of ICT, particularly Internet use in Pakistani libraries. The literature states that the use of computers was first seen during the decade of 1980s in Pakistani libraries, which is three decades later as compared with the American libraries, where it was started during the decade of 1950s. In the start, a few Pakistani libraries were automated, literature was produced to enhance the library automation and urge the human resource for training in this regard during the late 1980s and early 1990s. During the early days of automation, a few DOS based Urdu and English software packages were developed and provided by local vendors, foreign companies and UNESCO. These packages included CDS/ISIS, MINISIS, Pak Library Software and LAMP. The Netherlands Library Development Project-Pakistan (NLDP) in collaboration with Pakistan Library Association (PLA) played a vital

role in the early IT infrastructure developments and provision of training to the libraries and their staff during the decade of 1990s. Five computer training centres in different cities of Pakistan were developed along side the provision of computers to library schools by this project. Until 1996, the use of ICT and automation was in its infancy (Mahmood, 1996 & Idrees, 1997).

According to Saeed et al., (2000) in their study on the internet use in university libraries of Pakistan, Internet services were never started for general public in Pakistan until the year 1991 with an exception of some multinational companies, airlines and IBM computers, who were already using this technology. By the middle of year 1999, there were only 60 to 70 thousand Internet users. Since then a rapid expansion in the number of Internet users (8-9%) had been seen and until the end of year 2000, an increase of almost 200 % internet users was expected. Half of the selected university libraries in sample of this study were using the internet. The study reports that the libraries were mainly using email and web surfing, while some of the libraries were also using FTP, Telnet and Gopher services. Internet was although being used to get assistance for almost all the library services; nevertheless, mainly it was used for reference services. Only two libraries had uploaded their online public access catalogue (OPAC) till then. Overall conditions of internet usage and introducing any online services were very poor according to this study.

Mahmood & Shafique (2007) in their paper, "*Emerging information society in Pakistan and the role of libraries*" mentioned a very rapid growth, seen in the ICT during last few years. In January, 2007, Pakistan Telecommunication Authority reported the number of Internet users exceeded 12 millions with 1,898 cities in Pakistan having Internet access. There were 160 cities in Pakistan which had been provided with wireless local loop services, having 1.57 million subscribers, increasing from only 81, 030 within two years, i.e., January, 2005 to December, 2006. This data shows a rapid and heavy impact of ICT on the Pakistani society. The society is emerging into an information society. The paper has stated about the development and initiatives of E-Government, heavy investment in the project of internet provision in rural areas, ICTs in post offices and virtual university development to enhance E-learning environment at large. National Digital Library, developed by Higher Education Commission (HEC) of Pakistan has specially mentioned in this paper, which contains a wide range of quality information resources and provides access to the public and private sector universities and R&D organizations. HEC's Pakistan Research Repository project has also been mentioned in this paper, which aims to develop an inventory of the research being produced by Pakistani universities and provide the international community with access to this repository. The role of libraries in the development of an information society and their services for the transmission of knowledge, development of a democratic and open society, initiation and growth of well informed citizenry has been discussed in the light of IFLA and UNESCO charters. Libraries have a vital importance in the E-governance initiatives, but these have been given meagre importance in formation of policies. At some points, provisions for development of multimedia libraries at grass root level in the society have been mentioned but not implemented. This study recommends the policy makers to get the libraries on board and be included as main player in the planning of a real knowledge based society with the proper provision of ICTs to the public through libraries. The study also urges the librarians to be aware of their role in the development of such a society and equip themselves with required skills, which lack in them currently.

Rmazan and Singh (2009) have found that 91.3% academic libraries of Pakistan were equipped with Internet and emailing facilities. According to this study, 16.4 % had internet access through domain control, 60.7% through a proxy server, 4.6% individual connections and 4.6% had access through dial-up connections, (the rest did not respond). The internet speed of these libraries varied from 256 kbps to >4 mbps. 43 % of libraries got benefit from HEC'S Pakistan Education and Research Network (PERN) project in getting the internet connection. HEC's National Digital Library has been found a pertinent source for online journal and book resources and databases.

Siddique and Mahmood (2009), conducted a case study on the role of mailing groups in development of library profession in Pakistan. Pakistan Library Automation Group (Pak LAG) was taken as case. After discussing the communication through ICT, a leading role of Yahoo groups followed by Google groups in such communications among the libraries and librarians has been mentioned. It has been stated in this paper that the group, established in the year 2000 is pioneer among such professional communication groups. The group had a membership of over 1900 at the end of year 2008. The group shares the information through emails and its website among its members, on Professional news, Social issues, Professional help, Jobs, Training, Professional associations, Library profession, Library education, LIS Research, Professional groups and Others. A total of 5216 messages had been broadcasted on this group. This group has played a vital role in requesting and obtaining literature among professionals, provision and promotion of library automation through its own developed and free of cost available software and training opportunities. It has also played a role in the revival of Pakistan Library Association (PLA),

which had become inactive for a certain period.

Mahmood (2009), conducted a survey study of students from the University of the Punjab, Lahore, where more than 26,000 on campus students had been enrolled in 64 departments. The university provided with a facility of more than 5000 computers with Internet access to the students and faculty. The study reports an analysis of differences of access, use and attitudes among the university students towards information and communication technology based on their gender, subject and degree they were pursuing. The 55% of the participants were female and 45 % were male students, 73% belonged to graduate programs, while 27% were from undergraduate programs. Overall attitude of the respondents had been found positive in this study as the majority agreed with the positive role of ICT, e.g., it provided access to information, helped in learning of novel areas and improved communication. There were not many differences, found among the different groups of students. Nevertheless, the female students were found more positive as compared to male students, while male users of ICT were greater in number than the females. The students of Arts and Humanities were found less aware of the benefits of ICT as compared with the students of Sciences and Social Sciences. The study concludes that the economic effectiveness of the ICT equipment availability and internet connectivity has made the society's middle class students able to get benefits of these technologies.

Malik & Mahmood (2009), conducted a study on students' web search behaviour. This study was based on a survey of 200 undergraduate and graduate students of a faculty's different departments of University of the Punjab. The study reports 59.5 % students used the internet to search the materials for their information needs at home, 25 % at university, 15% at both of aforementioned places and 0.5 % at some other place. A majority of the students, i.e., 67.5% used the Internet daily; 72.5% of the population used the Internet for research, 76.5% for education, 68% for entertainment, 18.5% for sports and 6% for shopping purposes. Google is the most frequently used search engine, which is used by 97%, followed by Yahoo's 72% users of the population. The respondents used basic search frequently with a mean of 3.86 on a 1-5 scale where 1 meant rarely and 5 meant often, advanced search moderately with a mean of 3.11 and a little use of web directory (mean: 2.5) was made for the searching of materials. A frequent trend of multiple-query search has also been denoted. Most of the users see only first page (1-10 results) of resulting hits of their queries. Majority of the population was found satisfied up to a moderate extent with the use of internet for their searching requirements. The problems that were faced by the students included: slow speed, ranked one; overload of information, ranked two; irrelevant information, ranked three; and poor quality, ranked four. The study concludes a substantial use of internet by students for every thing they need to search, usually using basic search and satisfied with the results.

The review of literature presents a picture that different areas of ICT usage in Pakistan by different types of population have been studied. No study had been conducted on the internet use behaviour of the LIS people so far. Thus, this study is the first of its nature conducted among the Pakistani LIS community.

Results and Discussion

The respondents consisted of seven members of LIS faculty, 107 full time librarians working for more than five hours a day, two part time librarian working less than five hours a day, two consultant librarians, three free lance library professionals, eight para professional library staff, four LIS students and four others. A segregation of the respondents has been given in table-1. The respondents' respective sectors have been displayed in table-2. There are 91 respondents, who are serving in education sector (82 serving degree awarding institutes and nine serving other research institutes), 19 respondents are serving in the government departmental libraries, eight are serving public libraries, 3 are serving National Library of Pakistan and 15 are serving other institutions, e.g., hospitals, special libraries, NGOs, regulatory authorities and R&D institutions.

Table 1. Population of the Study

| Description | Frequency | Percentage |
|---|-----------|------------|
| LIS Faculty | 7 | 5.15 |
| Librarian - Full Time (5+ Hrs working) | 107 | 78.69 |
| Librarian - Part Time (Less than 5 hours working) | 2 | 1.47 |
| Consultant Librarian | 2 | 1.47 |
| Freelance LIS Professional | 3 | 2.20 |

| | | |
|-------------------------|-----|------|
| Para Professional Staff | 8 | 5.88 |
| LIS Student | 4 | 2.94 |
| Other | 3 | 2.20 |
| Total | 136 | 100 |

Table 2. Respondents' representative sectors

| Description | Frequency | Percentage |
|---|-----------|------------|
| Education (Degree Awarding Institute (DAI)) | 82 | 60.30 |
| Education (Research Institute) | 9 | 6.62 |
| Public Library | 8 | 5.88 |
| National Library | 3 | 2.20 |
| Government Department | 19 | 13.97 |
| Other | 15 | 11.03 |
| Total | 136 | 100 |

Table 3. Internet Connectivity at Workplace

| Description | Frequency | Percentage |
|--------------|-----------|------------|
| Yes | 123 | 90.44 |
| No | 7 | 4.41 |
| Not Answered | 6 | 5.15 |
| Total | 136 | 100 |

The participants were asked whether they had Internet connections at their workplace or not. Out of 136 participants, 130 responded this question. As mentioned in table 3, 123 had an Internet connectivity, which is a 90.44 percent of total population and 94.6 % of those who responded this question, while only 7 participants (5.4%) deprived of Internet connection at their workplace. A reasonable majority of the participants, i.e., 101 (74.26%) had a high speed DSL / broadband connections, eight were using dialup connections and 12 (8.83%) were using other connections, like cable connections, wi-fi, through LAN (local area network) etc. eight (5.88%) of those who had Internet connections, did not answer this question, while 7 (5.15 %) were not applicable due to having no Internet connection (Table 4). A comparison of Internet connections and their type among different sectors of the population has been presented in table-5. It shows that all the sectors of population are connected with internet at their workplaces. Most of the participants have high speed DSL / broadband connections. *Table 4. Type of Internet connection*

| Description | Frequency | Percentage |
|-------------------------------------|-----------|------------|
| Dial-up connection | 8 | 5.88 |
| DSL / Broadband | 101 | 74.26 |
| Other | 12 | 8.83 |
| Not Answered | 8 | 5.88 |
| N/A (due to no Internet connection) | 7 | 5.15 |
| Total | 136 | 100 |

Table 5. Segment wise Comparison of Type of Internet connection

| Description | N | DSL / Broadband | Dial-up Connection | Other | No Connection |
|----------------------------|-----|-----------------|--------------------|-------|---------------|
| LIS Faculty | 7 | 5 | 0 | 0 | 2 |
| Librarian – Full Time | 107 | 81 | 6 | 10 | 10 |
| Librarian – Part Time | 2 | 1 | 0 | 0 | 1 |
| Consultant Librarian | 2 | 2 | 0 | 0 | 0 |
| Freelance LIS Professional | 3 | 3 | 0 | 0 | 0 |
| | | | | | |

| | | | | | |
|-------------------------|-----|-----|---|----|----|
| Para Professional Staff | 8 | 4 | 1 | 1 | 2 |
| LIS Student | 4 | 3 | 1 | 0 | 0 |
| Other | 3 | 2 | 0 | 1 | 0 |
| Total | 136 | 101 | 8 | 12 | 15 |

Table 6. Email Accounts

| Description | One | Two | Three | >3 | NA | N |
|---|-----|-----|-------|----|----|-----|
| LIS Faculty | 2 | 0 | 0 | 3 | 2 | 7 |
| Librarian - Full Time (5+ Hrs working) | 7 | 41 | 30 | 19 | 10 | 107 |
| Librarian - Part Time (Less than 5 hours working) | 1 | 0 | 0 | 0 | 1 | 2 |
| Consultant Librarian | 0 | 1 | 0 | 1 | 0 | 2 |
| Freelance LIS Professional | 1 | 0 | 1 | 1 | 0 | 3 |
| Para Professional Staff | 0 | 2 | 4 | 0 | 2 | 8 |
| LIS Student | 0 | 2 | 1 | 1 | 0 | 4 |
| Other | 1 | 0 | 0 | 2 | 0 | 3 |
| Total | 12 | 46 | 36 | 27 | 15 | 136 |

The participants are normally using multiple email accounts. Only 12 participants (8.8%) are using single email account. Reasons to the multiple accounts are having different official and personal email accounts and having accounts on free email servers. The biggest group is the one that has two accounts, i.e., 46 (33.8%). This is interesting that a reasonable number of participants 27 (19.9 %) have more than three email accounts. A detailed sector wise population break down of email accounts has been given in table 6. A reasonable number of respondents (in a sense that they are neither IT professionals, nor business people) has developed their own website or homepage. Those who answered the question whether they had developed their website were 129 in number and 30 (23.3%) of them have developed and uploaded their websites / homepages. Both of the consultant librarians have developed their websites. Three out of five LIS faculty and 20 out of 104 fulltime librarians, who responded this question, have developed their own websites.

Table 7. Website / Homepage development

| Description | YES | NO | NA | N |
|----------------------------|-----|----|----|-----|
| LIS Faculty | 3 | 2 | 2 | 7 |
| Librarian - Full Time | 20 | 84 | 3 | 107 |
| Librarian - Part Time | 1 | 1 | 0 | 2 |
| Consultant Librarian | 2 | 0 | 0 | 2 |
| Freelance LIS Professional | 0 | 3 | 0 | 3 |
| Para Professional Staff | 2 | 4 | 2 | 8 |
| LIS Student | 1 | 3 | 0 | 4 |
| Other | 1 | 2 | 0 | 3 |
| Total | 30 | 99 | 7 | 136 |

Table 8. Reading newspapers online

| Description | Yes(Daily) | Yes (Some times) | NO | NA | N |
|----------------------------|------------|------------------|----|----|-----|
| LIS Faculty | 2 | 2 | 1 | 2 | 7 |
| Librarian - Full Time | 35 | 49 | 10 | 13 | 107 |
| Librarian - Part Time | 0 | 1 | 0 | 1 | 2 |
| Consultant Librarian | 0 | 1 | 1 | 0 | 2 |
| Freelance LIS Professional | 1 | 1 | 1 | 0 | 3 |
| Para Professional Staff | 2 | 3 | 1 | 2 | 8 |

| | | | | | |
|-------------|----|----|----|----|-----|
| LIS Student | 3 | 0 | 0 | 1 | 4 |
| Other | 0 | 1 | 2 | 0 | 3 |
| Total | 43 | 58 | 16 | 19 | 136 |

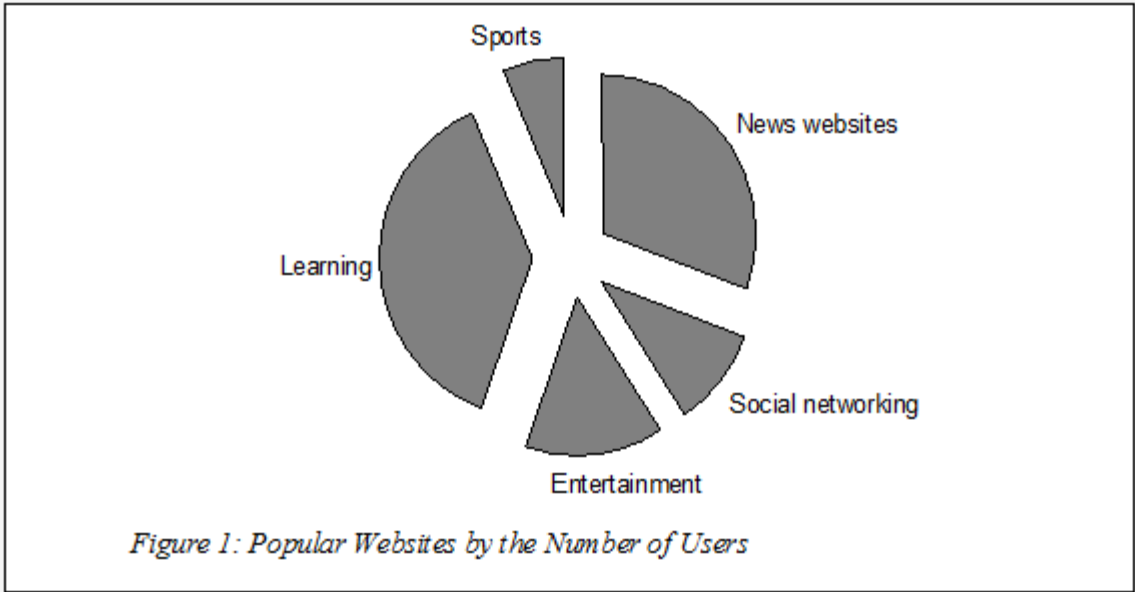
The renowned newspapers of Pakistan publish their papers online. Previously people used to read the newspapers in the libraries' newspaper sections, where there had been more people and less number of papers in the morning. So, the people had to wait for their turn. This trend is changing nowadays. Now, people prefer to read the online editions of newspapers. There, they don't have to wait for their turn and they also have the latest updated news at hand. This trend has also been seen in the LIS community. Out of 117 respondents who answered the question, 58 (49.5%) read the online newspapers occasionally, 43 (36.8%) read daily and only 16 (13.7 %) are those, who do not read newspapers online as shown in table 8. Table 9 shows that daily *Jang*, an Urdu newspaper is ranked number one, which is read by 22 % of population followed by daily *Express*, another Urdu newspaper and daily *Dawn*, an English newspaper, having a readership of 15.4 % each. Three of those participants who have not mentioned themselves as online newspaper readers in response to the question whether they read newspapers online or not, have mentioned the names of newspapers that they read online in response of the next question.

Table 9. Newspapers Read Online

| Description | Frequency | Percentage |
|-------------------------------------|-----------|------------|
| Daily Express (Urdu) | 21 | 15.44 |
| Daily Jang (Urdu) | 30 | 22.06 |
| Daily Nawa-i-Waqt (Urdu) | 8 | 5.88 |
| Daily Dawn (English) | 21 | 15.44 |
| Daily News (English) | 13 | 9.56 |
| Daily Nation (English) | 3 | 2.21 |
| Other | 8 | 5.88 |
| Not Answered | 25 | 18.38 |
| N/A (due to no Internet connection) | 7 | 5.15 |
| Total | 136 | 100 |

In response to question of the types of websites usually visited, the participants shared that the most popular websites are the learning materials which include online tutorials, electronic books, journals and digital libraries, visited by 85 participants, second ranked are news websites that include newspapers and different TV channels, visited by 68 participants and third are entertainment websites that include audio-video songs, youtube, google videos, mobiles etc. Multiple responses were possible in this section and were given by the respondents. The detailed data has been shown in table 10. Others include websites of research institutes, web catalogues, professional organizations, search engines, NGOs and publishers. Figure 1 shows the popularity of website types usually visited by the participants. Table 10. Websites Usually Visited

| Description | News websites | Social networking | Entertainment | Learning | Sports | Other | N |
|----------------------------|---------------|-------------------|---------------|----------|--------|-------|-----|
| LIS Faculty | 2 | 1 | 1 | 4 | 2 | 0 | 7 |
| Librarian - Full Time | 56 | 18 | 25 | 68 | 11 | 16 | 107 |
| Librarian - Part Time | 0 | 0 | 0 | 1 | 0 | 0 | 2 |
| Consultant Librarian | 0 | 0 | 0 | 1 | 0 | 1 | 2 |
| Freelance LIS Professional | 1 | 0 | 2 | 2 | 0 | 0 | 3 |
| Para Professionals | 4 | 0 | 0 | 5 | 0 | 0 | 8 |
| LIS Student | 3 | 2 | 2 | 2 | 1 | 1 | 4 |
| Other | 2 | 1 | 2 | 2 | 0 | 1 | 3 |
| Total | 68 | 22 | 32 | 85 | 14 | 19 | 136 |



4.7. Instant Messaging Service Out of 129 respondents, who have the Internet connections at their workplaces, 65 use the instant messaging service for official or personal communication with others. The participants who do not use instant messaging service are 46 in number, while 18 participants did not answer this question. This data has been shown in table 11. Yahoo messenger is the most popular which is used by 48 users, followed by MSN used by 34 and GMail messenger used by 17 as shows table 12. Others include internal communication systems, Microsoft office communicator, Hi5, Windows live and Ringo. Some of the participants use multiple messengers; therefore, there is an overlapping of the users.

Table 11. Instant Messaging Service Usage

| Description | Frequency | Percentage |
|-------------------------------------|-----------|------------|
| Yes | 65 | 47.79 |
| No | 46 | 33.82 |
| Not Answered | 18 | 13.24 |
| N/A (due to no Internet connection) | 7 | 5.15 |
| Total | 136 | 100 |

Table 12. The Messengers Used

| Messenger | Frequency | Ranked |
|--|-----------|--------|
| Yahoo Messenger | 48 | 1 |
| MSN Messenger / MSN Live Messenger / MSN Web Messenger | 34 | 2 |
| Gmail Messenger | 17 | 3 |
| Other | 5 | 4 |

In order to know, how much time the participants spent surfing Internet daily, they were asked the question. The following options were given to them to answer this question: 1.) only break hours, which meant one hour daily; 1-2 hours, which meant 1.5 hours daily; 2-3 hours, which meant 2.5 hours daily; 3-4 hours, which meant 3.5 hours daily; and >4 hours, which meant 5 hours daily. Those who did not answer this question were taken as spending no time on Internet surfing during working hours. Consultant librarians' have the highest mean, which is 3.25, followed by LIS students, part time librarians and others. The full time librarians utilize their time, surfing Internet with a mean of 2.39. A detailed comparison can be seen in table 13. Figure 2 shows the means of the time spent surfing Internet by different segments of population. It also shows the grand mean and deviation of different segments' means from the grand mean.

Grand Mean: 2.34

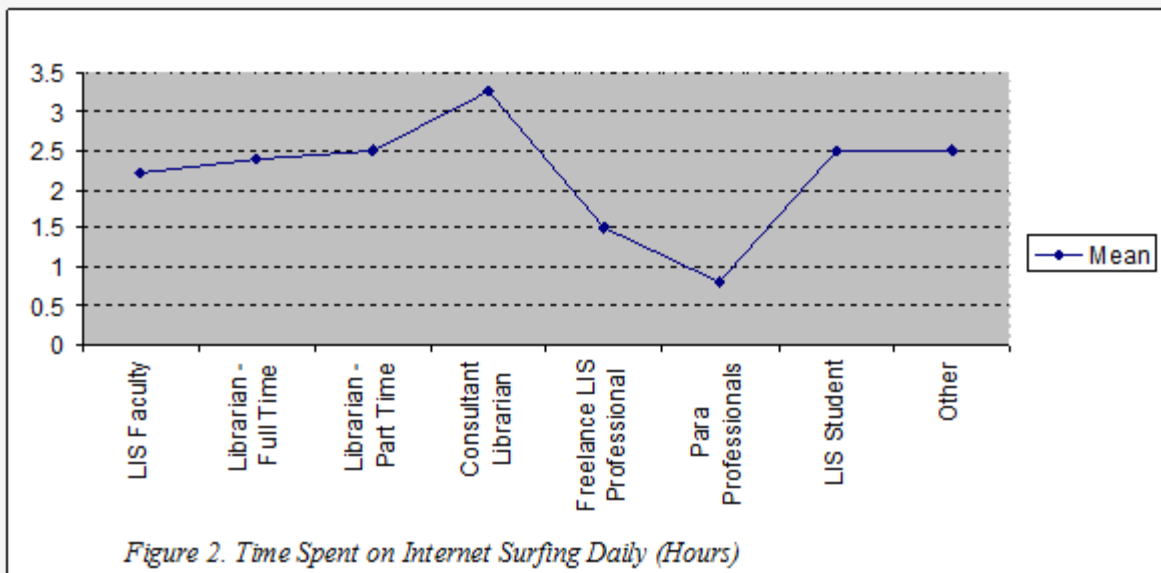


Figure 2. Time Spent on Internet Surfing Daily (Hours)

Table 13. Time Spent Surfing Internet Daily

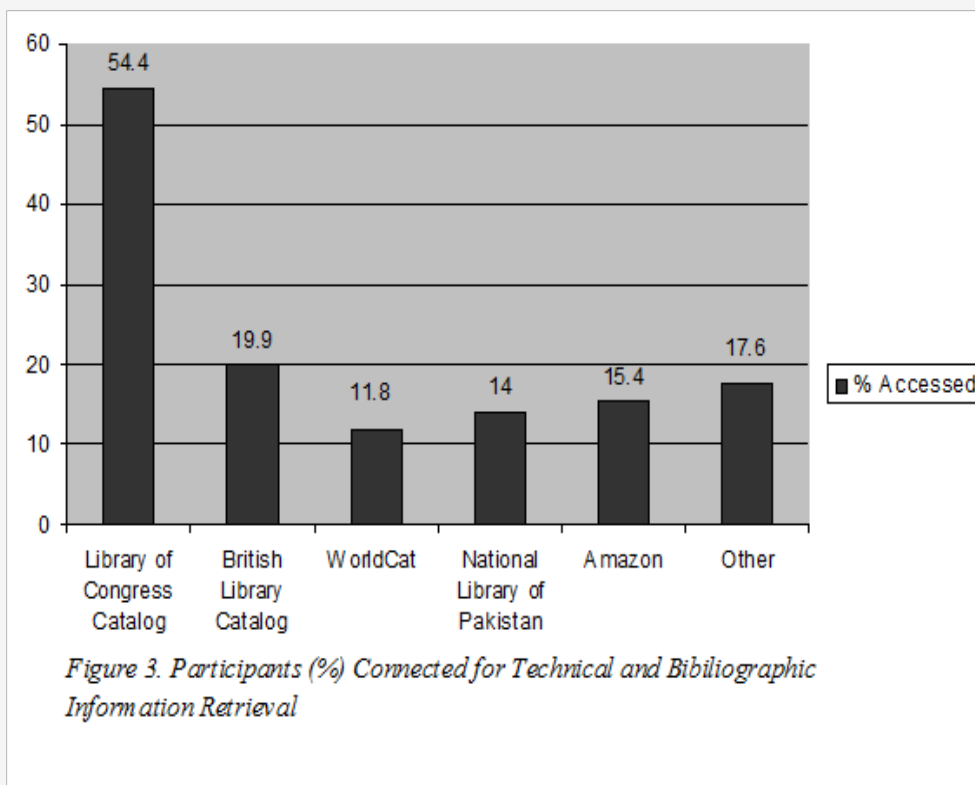
| Description | Break Hour | 1-2 Hours | 2-3 Hours | 3-4 Hours | >4 Hours | NA | Mean | N |
|----------------------------|------------|-----------|-----------|-----------|----------|----|------|-----|
| LIS Faculty | 0 | 0 | 0 | 3 | 1 | 3 | 2.21 | 7 |
| Librarian - Full Time | 4 | 23 | 18 | 22 | 23 | 17 | 2.39 | 107 |
| Librarian - Part Time | 0 | 0 | 0 | 0 | 1 | 1 | 2.5 | 2 |
| Consultant Librarian | 0 | 1 | 0 | 0 | 1 | 0 | 3.25 | 2 |
| Freelance LIS Professional | 1 | 1 | 0 | 0 | 0 | 1 | 1.5 | 3 |
| Para Professionals | 1 | 2 | 0 | 2 | 1 | 2 | 0.81 | 8 |
| LIS Student | 0 | 1 | 0 | 1 | 1 | 1 | 2.5 | 4 |
| Other | 1 | 1 | 0 | 0 | 1 | 0 | 2.5 | 3 |
| Total | 7 | 29 | 18 | 28 | 29 | 25 | 2.34 | 136 |

4.9. Tools / Websites Used for Cataloguing / Classification and Other Bibliographic Information Retrieval It has been revealed that the Library of Congress' website is the most commonly used tool for the purpose of cataloguing, classification and other bibliographic information retrieval, which is used by 74 participants, the second highest used tool in this regard is British Library's online catalogue, which is used by only 27 participants. Thus, there is a huge gap of numbers between first and second ranked tools / websites. This has also been shown that 21 participants access Amazon, 19 National Library of Pakistan, 16 Worldcat and 24 connect to other websites for the purpose of cataloguing, classification and other bibliographic information retrieval. The other websites include PLAGPK website for Library and Information Management System (LIMS) database, developed by a local LIS group known as Pak LAG, Library Manager, Web Dewey, National Library of Australia, Lahore University of Management Sciences (LUMS), Galaxy Books (a local vendor) and some Malaysian databases. Table 13 shows the details of data in this respect, while the figure 3 shows comparative popularity relationship among different online tools / websites.

Table 14. Use of Online Bibliographic Tools

| Description | Library of Congress Catalogue | British Library Catalogue | WorldCat | National Library of Pakistan | Amazon | Other | N |
|-----------------------|-------------------------------|---------------------------|----------|------------------------------|--------|-------|-----|
| LIS Faculty | 4 | 2 | 1 | 2 | 1 | 0 | 7 |
| Librarian - Full Time | 61 | 22 | 11 | 13 | 19 | 19 | 107 |
| Librarian - Part Time | 1 | 0 | 0 | 1 | 0 | 0 | 2 |
| Consultant Librarian | 1 | 0 | 1 | 0 | 0 | 0 | 2 |

| | | | | | | | |
|----------------------------|----|----|----|----|----|----|-----|
| Freelance LIS Professional | 1 | 1 | 0 | 0 | 0 | 0 | 3 |
| Para Professionals | 4 | 2 | 1 | 1 | 0 | 2 | 8 |
| LIS Student | 1 | 0 | 1 | 2 | 1 | 1 | 4 |
| Other | 1 | 0 | 1 | 0 | 0 | 2 | 3 |
| Total | 74 | 27 | 16 | 19 | 21 | 24 | 136 |



Conclusion

The study shows that there is a rapid growth in information and communication technology (ICT) infrastructure and use in Pakistan. All the segments of LIS community of Pakistan are abreast with the ICTs. A reasonable amount of LIS community is connected with the world through Internet. It is evident by the current development and growth in ICTs that the rest of the community will also be connected with this technology soon. Although people are aware of the importance and effectiveness of internet and online resources, still there is a need for the training and development of the human resource to enhance the results.

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