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**Assessment of ICT Competencies of LIS Professionals in Public Libraries of Khyber
Pakhtunkhwa: A Quantitative Study**

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Abstract

Purpose: This study aimed to investigate the ICT competencies and skills of LIS professionals working in public libraries. The study's specific objectives were to assess LIS professionals' knowledge and skills in library software, web application, examine the methods used to acquire ICT skills, identify areas where training is needed, and ascertain the issues faced by the staff in acquiring ICT skills.

Research Design and Methodology: The questionnaire-based survey was conducted to collect data from the sample of the study. 40 LIS professionals were working in 15 public libraries of the province. Therefore, a census-based approach was used and the whole population was considered for data collection. Statistical Package for Social Sciences version 22 (SPSS) was used to analyze the data and obtain the results.

Results: The findings show that most of the respondents had the skills to work on various operating systems, library applications software, Microsoft office and web applications. The major sources used for acquiring ICT skills include formal education, self-study, workshops, and curricula. The major problems faced by the staff in acquiring ICT competencies were lack of interest of professional associations, lack of finances, limited training opportunities, lack of coordination among staff and insufficient staff in the library.

Implications: The study's findings are beneficial to the government and higher library authorities. The key point to be considered includes ICT training for LIS professionals to enhance their skills and the authorities should take practical steps to resolve the issues identified by library practitioners as barriers in acquiring ICT competencies and skills.

Keywords: ICT Competencies, ICT tools and applications, Public Libraries, Pakistan, Khyber Pakhtunkhwa

1. Introduction

As its name suggests, a public library is for the people, by the people and of the people. It has existed since the dawn of humanity and serves as a vital repository for human culture,

knowledge, and social customs (Kaliya, Perumal & Bahskarn, 2010). A public library is an “organization established, supported and funded by the community, either through local, regional or national government or through some other form of community organization. It provides access to knowledge, information and works of the imagination to all members of the community regardless of race, nationality, age, gender, religion, language, disability, economic and employment status and educational attainment” (Butt, Qutab & Mahmood Shafique, 2011). The public library ensures quality education by providing peer reviewed online journals to advance teaching and research. Library professionals in a public library can support the demands of users by meeting their information needs in an effective way (Haggstrom, 2004).

Public libraries cover a broad spectrum of users and possess the capacity to develop a prosperous society in all regards (Saleh & Lasisi, 2011). The public library is a democratic institute that allows everyone to access its knowledge to better their personal, family and social lives (Scott, 2011). ALA glossary defines the public library is a “library that provides general library services without charge to all residents of a given community, district, or region” (Levine-Clark & Carter, 2013).

ICT has changed the way of communication, location, retrieval and use of information. Libraries and information centers have empowered the ICT more profoundly than any other field. Currently, most libraries are offering electronic sources and services. ICT has introduced the concept of an information rich and information-poor society. The countries that advance in using ICT for information resources constitute information rich societies, while those who are weak are kept in an information poor society (Yapa, 2003). According to Thanuskodi (2011) ICT is the combination of computers and information technology that are used in library and information centers for faster and effective acquiring, processing, storing, retrieving and disseminating of information.

According to Choukhande (2003), before ICT, libraries were only book-centered institutions that served the needs of their users. All the library operations, such as cataloguing, classification, circulations, registration and acquisition were done manually. However, there is a paradigm shift with the emergence and development of ICT and brought many changes to the way libraries assemble, store, retrieve and disseminate information. Krissoff and Konrad (1998); Latham (2000) opined that the LIS professional should have traditional and basic computer and

information technology knowledge. Information and Communication Technologies (ICT) literacy and competency

are the ability to use digital technology, communication tools and networks appropriately to solve information problems; including the ability to use technology as a tool to research, organize, evaluate, and communicate information and the possession of a fundamental understanding of the ethical/legal issues surrounding the access and use of information. (Educational Testing Service, 2002. p.)

2. Literature Review

Hussain and Idress (2021) assessed the problems faced by the public libraries of Pakistan. The major problems identified were lack of training opportunities, limited human resources, insufficient IT literate staff, insufficient experienced LIS professionals, lack of IT expertise among library users, non-availability of technical support, limited electronic resources and lack of integrated library software and limited information resources. Rafi, Ahmad and Ming (2020) examined the reading trends and the use of resources in the public libraries of Khyber Pakhtunkhwa. The research findings show a correlation between literacy rate and the use of library resources. Districts of the dense population contained only one public library, and many regions lacked public libraries. Factors which indicated responsible for declination in the reading trends of public included remote location of users, weak transport system, absence of digital literacy, unemployment and social inequality.

Rafi, Ahmad, Naeem and Ming (2020) focused on the budget, challenges and competencies of professionals of public libraries. Results of the study indicate that guidelines are provided in the annual budget review without addressing existing challenges and solutions to overcome those challenges. Major obstacles in the execution of the library budget were unfair resource allocation, currency fluctuations and the rising cost of print and database resources. Rana and Bhatti (2020) assessed the use of ICT in the collection management of public libraries of Punjab. It was found that there was a scarcity of printed information resources and professional staff. Most of the libraries had no IT staff and there was a deplorable condition of ICT resources in the studied libraries. The most pressing obstacles to successfully executing ICT in collection management were also identified as interrupted power and scarcity of funds. Public libraries were recommended to develop ICT resources and ensure the recruitment of skilled IT personnel.

Warraich, Malik and Ameen (2018) surveyed the public libraries in the province of Punjab. The results of the study indicate that except few, most of the libraries were in poor conditions. The main problems faced by the libraries were outdated collection, lack of IT infrastructure, absence of professional staff, dilapidated library buildings, lack of interest from higher authorities and political leaders. Waheed, Rafique and Soroya (2017) investigated the marketing applications in public libraries of Punjab, Pakistan. Results indicate no defined methods to implement the marketing mix, but various existing services adequately fit the description. Current awareness, reference and face-to-face user assistance were core services and communication channels for promoting products and services of the libraries. The libraries had sufficient space for different in-house activities and charged a normal fee for some services.

Rafi, Ali and Ahmad (2016) investigated administrative challenges of public libraries of Khyber Pakhtunkhwa. The study indicates that non-professional administrators could not keep pace with the demanding issues and challenges of libraries. It was recommended that to ensure quality in the public libraries, the library administrators should be from a professional cadre and LIS professionals should be included in decision-making. It was also suggested that training on IT, library ethics, and operations be arranged for staff of the libraries.

Warraich, Haq and Ameen (2016) assessed administrative setup, resources, services, staff and problems of public libraries. The results show negligence from government and civil administrators to these libraries. The findings also show lack of professional staff. Public libraries were in poor condition, and the non-professional staff could not arrange and manage the books and handle common library tasks. Kasimani and Rajendran (2019) reported the resources and satisfaction of users with the library resources and visited the library to fulfil their academic needs. Obinyan, Obinyan and Aidenojie (2019) surveyed the state public library and its branches in Nigeria. Results show that most of the respondents were students and youths who used the library resources for exams and personal competencies. Resources of the libraries were found insufficient and, in many cases, inappropriate as well. The leading causes of this situation were inadequate funding and lack of local interest in the collection of public libraries.

Nath and Chauhan (2019) studied the status of public libraries in the state of Punjab, India. It was found that the automation process was not completed in 93% of libraries; this was because of lack of professional staff, insufficient finance and ignorance of government

authorities. It was concluded that finances should be provided to procure the latest resources, develop IT infrastructure and recruit skilled staff.

3. Objectives of the Study

The research was conducted with the following objectives in mind:

- To evaluate the skills of library professionals in various operating systems.
- To determine the skill of LIS staff in automation and content management systems.
- To investigate the competencies of LIS professionals of different applications software and web applications.
- To examine the sources and methods used by LIS professionals for attaining ICT skills.
- To identify the areas in which LIS Professionals need the training to enhance their ICT skills.
- To ascertain the problems faced by LIS professionals in acquiring ICT competencies.

4. Research Design and Methodology

This research study adopted the quantitative approach and the descriptive research design was used to conduct the study. Furthermore, the survey method was used to gather necessary data from the respondents. This method was appropriate and suitable for the study because the population was spread over a large geographical area. This method was used because many LIS research scientists have already used this method in such studies (Bashorun, Isah, & Adisa, 2011; Rehman, Shafique, & Mahmood, 2011; Sampath Kumar & Kumar, 2010; Tyagi, 2011).

The LIS professionals working in the public libraries of Khyber Pakhtunkhwa, Pakistan, constitute the population of the study. There were 15 libraries in the province of Khyber Pakhtunkhwa and 40 LIS professionals working in these libraries. Therefore, a census based approach was adopted and the whole population was considered for data collection.

The questionnaire of Rehman (2013) was modified according to the study's objectives. The questionnaires were sent to the postal and email addresses of the respondents in November 2020. A total of 35 questionnaires were received from the respondents and hence the response rate was 87.5%. The Statistical Package for Social Sciences (version 22) was used to analyze the data and interpret the results.

5. Data Analysis and Interpretations

The collected data was analyzed according to the objectives of the study and the results are presented in tables with interpretation.

5.1 Demographic Information of the Respondents

This section describes the respondents' demographic information in terms of gender, age, qualification, experience, and designation. All these statistics are presented in Table 5.1. The data shows that out of 35 LIS professionals, 30(85.7%) were male and 5(14.3%) were female. Thus, the ratio of the male was higher than the female respondents.

It is also evident from the data in Table 5.1 that the respondents were of different age groups. Most of the respondents were in the age group between 36-50 years. The data depicts that 8(22.9%) LIS professionals were found with 36-40 years and 7(20%) respondents with the age group of 40-45 years and 8(22.9%) respondents had the age of 46-50 years. The age of 7(20%) respondents with the age of 40-45 years, 3(8.6%) respondents from 25-30 years and 2 of the respondents were found of more than 50 years.

The survey respondents were inquired regarding their educational qualifications. The statistics disclose that 31(88.6%) LIS professionals were Master of Library and Information Science (MLIS), two (5.7%) were M. Phil in LIS, one with Ph. D degree and one respondent had a bachelor's degree in LIS.

The respondents were asked to specify their designation and working experience. Their responses are also summarized in Table 5.1. The data show that out of 35 respondents, the majority 18(51.4%) of the respondents were Librarian, followed by Library Assistant with 6(17.1%), Librarian-2 with 5(14.3%), Classifier with 2(5.7%), while Chief Librarian, Senior Librarian, Cataloguer and Deputy Librarian each with 1 (2.9%) respondent.

Table 5.1 also presents statistical information about the experience of the LIS professionals. The data reveals that the majority, 13(37.1%) of the LIS professionals, had 6-10 years of experience, followed by 7(20%) with more than 25 years of experience, 6(17.1%) of the respondents identified with up to 5 years of experience. There were 5(14.3%) respondents who had 16-20 years of experience, whereas 4(11.3%) of respondents had 11-15years of experience.

Table 5.1
Demographic Information of the Respondents

S. No.	Gender	Frequency	Percentage (%)
1	Male	30	85.7
2	Female	5	14.3
Age			
1	25-30 years	3	8.6
2	31-35 years	7	20.0
3	36-40 years	8	22.9
4	40-45 years	7	20
5	46-50 years	8	22.9
6	>50 years	2	5.7
Qualifications			
1	BLIS	1	2.9
2	MLIS	31	88.6
3	M.Phil	2	5.7
4	Ph. D	1	2.9
Designation			
1	Chief librarian	1	2.9
2	Senior librarian	1	2.9
3	Deputy librarian	1	2.9
4	Librarian	18	51.4
5	Librarian -2	5	14.3
6	Library Assistant	6	17.1
7	Cataloguer	1	2.9
Experience			
1	Up to 5 years	6	17.1
2	6-10 years	13	37.1
3	11-15 years	4	11.4
4	16-20 year	5	14.3
5	> 25	7	20.0

5.2 Level of Competencies in the Operating Systems

The competencies of LIS professionals regarding various operating systems were explored and listed in Table 5.2. The result shows that most of the respondents had the skills to work on the Windows operating system with a Mean score of 3.71. The Means score of 2.34 received by Linux also indicates that the respondents also had some knowledge and skills to work on this operating system. However, the Mean score of 1.82 illustrates that the LIS professionals had limited or no knowledge of the Unix operating system.

Table 5.2
Level of Competencies in the Operating System

Operating Systems	Rank	Mean	Std. Deviation	Variance
Windows	1	3.71	1.17752	1.387
Linux	2	2.34	1.16171	1.350
Unix	3	1.82	1.15008	1.323

Note: Scale 1= Excellent, 2= Good, 3= Fair, 4=Limited Knowledge, 5= No Knowledge

5.3 Competencies in Automation and Content Management Systems

The survey participants were questioned to show their competencies and skills in various library management systems. The five-point Likert scale was used by providing options like “Excellent, Good, Fair, Limited Knowledge and No Knowledge”. The data in Table 5.3 stipulate that most respondents had excellent knowledge and skills to work on INMAGIC (Mean=3.60), Insignia (Mean M=3.60), CDS/ISIS (Mean=3.42), KOHA (Mean=3.34) and LAMP (Mean=3.22), WINISIS (Mean=2.48). The Mean values of LIMS (Mean=2.45) and SLiMS (Mean=2.05) indicated that the respondents had limited knowledge of these software. The result also discloses that the respondents had limited capability to work on various content management systems, including EPrints (Mean=2.77), Caliber (Mean=2.74), Greenstone (Mean=2.68) and Dspace (Mean=2.68)

Table 5.3
Competencies in Automation and Content Management Systems

Library Automation Software	Rank	Mean	Std. Deviation	Variance
INMAGIC	1	3.60	1.26491	1.600
Insegnia	8	3.60	1.26491	1.600
Computerized Documentation System/Integrated Set of Information System (CDS/ISIS)	2	3.42	1.46098	2.134
KOHA	3	3.34	1.34914	1.820
Library Automation and Management Program (LAMP)	4	3.22	1.49678	2.240
WINISIS	5	2.48	1.29186	1.669
LIMS	6	2.45	1.31379	1.726
SLIMS	7	2.05	1.23533	1.526
Content Management System				
EPrints	1	2.77	1.57341	2.476
Calibre	2	2.74	1.54049	2.373
Greenstone	3	2.68	1.45059	2.104
Dspace	3	2.68	1.32335	1.751

Note: Scale 1= Excellent, 2= Good, 3= Fair, 4=Limited Knowledge, 5= No Knowledge

5.4 Competencies of Respondents on Applications Softwares

One of the study objectives was to know about LIS professionals' competencies regarding various applications software. The competencies level of the respondents, along with their mean scores, are given in Table 5.4. The data illustrates that most of the respondents had the competencies and skills to work on various applications software, including Microsoft Word (Mean=4.42), MS Excel (Mean=3.94), and MS PowerPoint (Mean=3.80). The statistical data also shows that the respondents also had the capabilities to work on applications software like In-Page (Mean=3.51), MS Access (Mean=3.51), and Photoshop (Mean=3.25).

Table 5.4

Competencies of Respondents on Applications Softwares

Application Software	Rank	Mean	Std. Deviation	Variance
MS Word	1	4.42	.77784	.605
MS Excel	2	3.94	1.25892	1.585
Power Point	3	3.80	1.41005	1.988
In page	4	3.51	1.35845	1.845
MS Access	5	3.51	1.52183	2.316
Photo Shop	6	3.25	1.35783	1.844

Note: Scale 1= Excellent, 2= Good, 3= Fair, 4=Limited Knowledge, 5= No Knowledge

5.5 Competencies of Web Applications

LIS professionals were also asked to provide responses demonstrating their knowledge of various web applications and tools. The respondents' responses are listed in Table 5.5 with mean values, standard deviation, and variance. The data shows that most of the respondents had excellent knowledge of search engines (Mean=4.28), including Google, MSN Yahoo, and e-mail composing, sending, receiving, and file attachment (Mean=4.05).

The other web applications and tools' mean scores demonstrate that the respondents had the skills and capabilities to work and unutilized these properly. These included web browsing (Mean=3.97), social media applications and networks (Mean=3.82), searching of e-journals (Mean=3.65), bibliographic databases (Mean=3.65), use of the internet for collection development (Mean=3.11), webpage designing (Mean=3.25), use of the internet for reference queries (Mean=3.11) and wikis (Mean=3.02).

Table 5.5
Competencies of Respondents on Web Applications

Web Applications	Rank	Mean	Std. Deviation	Variance
Search engines (Google, MSN, Yahoo)	1	4.28	1.04520	1.092
E-mail (composing, sending, receiving, and file attachment)	2	4.05	1.23533	1.526
Web browsing	3	3.97	1.33913	1.793
Social Media Networks, e.g., Facebook, Orkut, My Space, Blogs)	4	3.82	1.12422	1.264
E-journals searching	6	3.65	1.43369	2.055
Bibliographic databases	6	3.65	1.47415	2.173
Internet for collection development	7	3.37	1.39507	1.946
Webpage designing	8	3.25	1.66879	2.785
Internet for reference queries	9	3.11	1.40945	1.987
Wikis, (Wikipedia, LIS wiki)	10	3.02	1.61765	2.617

Note: Scale 1= Excellent, 2= Good, 3= Fair, 4=Limited Knowledge, 5= No Knowledge

5.6 Sources/Methods used for Acquiring ICT Competencies

The survey respondents were inquired to mention the methods/sources used for gaining and acquiring ICT competencies. The statistics given in Table 5.6 reveals that the respondents used various sources and methods for acquiring ICT skills. The data illustrates that 30(85%) respondents gained the ICT capabilities through formal education, 28(80%) respondents through self-study and 25(71.4%) from colleagues. The other adopted methods and means used by the LIS professionals for acquiring these skills were attending workshops (65.75%), tours to other institutions (60%), the curriculum at LIS schools (51.4%), and web-based tutorials (40%).

Table 5.6
Sources/Methods used for Acquiring ICT Competencies

Sources and Methods	Frequency (%)	Frequency (%)
	Yes	No
Formal education	30(85)	5(14.3)
Informal education (distance education)	17(48.6)	18(51.4)
Through colleagues	25(71.4)	10(28.6)
Self-study	28(80)	7(20)
Training at workplace	19(54.3)	16(45.7)
Training by suppliers	5(14.3)	30(85.7)
Attending workshops/seminars	23(65.7)	12(34.3)
LIS schools	18(51.4)	17(48.6)
Tours of other institutions	21(60)	14(40)
Web-based tutorials	14(40)	21(60.)

5.7 Areas in which Training are Required

The survey respondents also identified some areas where they needed additional training; their responses are listed in Table 5.7 These areas include library automation software packages (88.6%), internet tools and techniques (88.6%), searching techniques and strategies (82.9%), digital library and institutional repository software (82.9%), and evaluation of online information resources (80%).

The other areas identified by the respondents for training were online cataloguing (80%), applications software (80%), bibliographic resources (77.1%), and library webpage designing (77.1%). It is demonstrated from the data that the majority of the respondent also need training in the use of Library of Congress Subject Heading (74.3%), work on MS-Windows (74.3%), and the use and applications of social networking tools (71.4%), Web Dewey (71.4%), and searching of e-contents (68.6%).

Table 5.7

Areas in which Training are Required

Areas of Training	Frequency (%)	
	Yes	No
Bibliographic resources	27(77.1)	8(22.9)
Online cataloguing	23(65.7)	12(34.3)
E-journals, e-books and databases	24(68.6)	11(31.4)
Internet tools and techniques	31(88.6)	4(11.4)
Searching techniques and strategies	29(82.9)	6(17.1)
Library automation software packages	31(88.6)	4(11.4)
Digital library and institutional repository software	29(82.9)	6(17.1)
Evaluation of online information resources	28(80)	7(20)
Social networks, e.g. (Facebook, Flickr, Blogs)	25(71.4)	10(28.6)
Online classification	28(80)	7(20)
Web Dewey	25(71.4)	10(28.6)
Library of Congress Subject Heading (LCSH)	26(74.3)	9(25.7)
Applications software (MS-office, etc.)	28(80)	7(20,0)
Library web page designing for library marketing	27(77.1)	8(22.9)
MS-Windows	26(74.3)	9(25.7)

5.8 Problems in Acquiring ICT Competencies and Skills

The LIS professionals were asked about the problems they are being faced in learning ICT skills. The dichotomous scale (Yes, No.) was used, and the respondent had to choose one of

the options. Their responses are enumerated in Table 5.8. The data confirms that the significant problems identified by the respondents were, lack of initiative from professional associations to conduct specialized training programs (85%), financial problems (82.9%), limited opportunities (82.9%), lack of coordination among library staff (71.4%), lacking in-service training provision (68.6%), and inadequate continuing professional development activities (65.7%).

It is depicted from the data that respondents pointed out other problems were lack of written continuing professional development policies (62.9%), lack of computers, internet & other ICT resources (60%), tight working schedule (51.4%) and lack of sufficient staff in the library (51.4%).

Table 5.8
Problems in Acquiring ICT Competencies and Skills

Problems	Frequency (%)	
	Yes	No
Financial problem	29(82.9)	6(17.1)
Tight working schedule	18(51.4)	17(48.6)
Library professionals are not interested in learning ICT knowledge	12(34.3)	23(65.7)
Higher authority is not interested to send their library professionals to upgrade their ICT skills	20(57.1)	15(42.9)
Limited opportunities	29(82.9)	6(17.1)
Lack of sufficient staff in the library	18(51.4)	17(48.6)
Lack of written Continuing Professional Development policies	22(62.9)	13(37.1)
Inadequate continuing professional development activities	23(65.7)	12(34.3)
Lack of computers, internet and other ICT resources in my library	21(60)	14(40)
Personal inabilities	15(42.9)	20(57.1)
Poor in service training provision	24(68.6)	11(31.4)
Lack of co-ordination among library staff	25(71.4)	10(28.6)
Lack of initiative from professional associations to conduct specialized training programs	30(85)	5(14.3)

6. Key Findings of the Study

- The information was gathered from LIS professionals working in the public libraries of Khyber Pakhtunkhwa. According to the findings, 35 out of 40 LIS professionals responded to the questionnaire, with 85.7% were male and 14.3 % were female.

- It was found that most of the respondents were in the age group between 36-50 years. Out of which 8(22.9%) were with 36-40 years, 7(20%) respondents with the age of 40-45 years and 8(22.9%) with the age group of 40-50 years. The statistics disclose that 31(88.6%) LIS professionals had the degree of Master in Library and Information Science (MLIS) and two (5.7%) respondents were M. Phil in LIS.
- The majority, 51.4% of the respondents were librarians, followed by Library Assistant with 17.1%, Librarian-2 with 14.3%, Classifier with 5.7%, while Chief Librarian, Senior Librarian, Cataloguer and Deputy Librarian each with 2.9%. It was found that the majority, 37.1% of the LIS professionals, had 6-10 years of experience, 20% with more than 25 years of experience, 17.1% with up to 5 years of experience, 14.3% of respondents had 16-20 years experience and 11.3% of respondents had 11-15 years experience.
- The result shows that most of the respondents had the skills to work on the windows (Mean=3.71) and Linux (M=2.34) operating systems. However, they had limited or no knowledge of the Unix operating system (Mean=1.82).
- It was observed that the majority of respondents had the skills to work on various automation software, including INMAGIC (Mean=3.60), Insignia (Mean=3.60), CDS/ISIS (Mean=3.42), KOHA (Mean=3.34) and LAMP (Mean=3.22). Moreover, the respondents had significantly less knowledge and skills to work on various content management applications such as EPrints (Mean=2.77), Caliber (Mean=2.74), Greenstone and Dspace respondents with (Mean=2.68).
- It was found that most of the respondents had the competencies and skills to work on various application software, including Microsoft Word (Mean=4.42), MS Excel (Mean=3.94), MS PowerPoint (Mean=3.80), In-Page (Mean=3.51), MS Access (Mean=3.51), and Photoshop (Mean=3.25).
- The data shows that most of the respondents had excellent knowledge of search engines (Mean=4.28), e-mail composing, sending, receiving, and file attachment (Mean=4.05). Web browsing (Mean=3.97), social media application and networks (Mean=3.82), searching e-journals (Mean=3.65), bibliographic databases (Mean=3.65), the use of the internet for collection development (Mean=3.11), webpage designing (Mean=3.25), use of the internet for reference queries (Mean=3.11) and wikis (Mean=3.02).

- The findings show that the respondents used various sources and methods for acquiring ICT skills. These included formal education (85%), self-study (80%), through colleagues (71.4%), attending workshops/seminars (65.75%), tours to other institutions (60%), curriculum at LIS schools (51.4%) and web-based tutorials (40%)
- The respondents identified some areas where they needed additional training. These areas include library automation software packages, internet tools and techniques, searching techniques and strategies, digital library and institutional repository software and evaluation of online information resources. The other areas were online cataloguing, applications software bibliographic databases, web page designing, Library of Congress Subject Heading, Web Dewey, and searching of e-contents.
- It was found that there were problems faced by the respondents while acquiring ICT skills. These problems were, lack of initiative from professional associations to conduct training programs (85%), financial problems (82.9%), limited opportunities (82.9%), lack of coordination among library staff (71.4%), lacking in-service training provision (68.6%), lack of written continuing professional development (CPD) policies (62.9%), lack ICT resources (60%), tight working schedule (51.4%) and lack of sufficient staff in the library (51.4%).

7. Recommendations

Keeping in view the study results following are some of the recommendations to enhance ICT use among LIS professionals.

- The current trends and recent ICT scenarios suggest that the library professionals should equip themselves with the latest ICT competencies to fulfil clients' required information needs.
- Training should be organized for LIS professionals to enhance their competencies to work on various operating systems, like Windows, Linux and Unix.
- Workshops on Integrated Library Softwares (ILS) should be organized to raise awareness and skills among LIS professionals to automate the libraries effectively. The library professionals should also enhance their digital content management system capabilities to manage their digital content and develop digital libraries.
- Training is needed to improve the skills of LIS practitioners on software applications like MS Word, MS Excel, MS PowerPoint, and MS Access.

- The professional associations and LIS schools should organize training programs and short courses related to ICT for LIS professionals. Moreover, special training and workshops should be arranged to enhance LIS professionals' skills regarding web applications such as web browsing, social media applications, searching techniques use of bibliographic databases, web page designing, use of the internet for reference queries, and wikis.
- Library professionals should develop their specialized skills in emerging areas of ICT such as library software packages, assessment of online information tools, online cataloguing, web designing, use of Library of the Congress Subject Headings, and the use of Web Dewey.
- Keeping the tremendous development in Information and Communication Technologies (ICT), library schools should redesign their curriculum.
- The library authorities should develop ICT infrastructure and arrange ICT training programs based on the needs of library workers to inform them on current ICT tools. Furthermore, library practitioners should offer incentives to encourage them to initiate ICT-based programs for their library patrons.
- The higher authorities of libraries should take practical steps to resolve the issues identified by library practitioners as barriers to promote their ICT competencies and skills.

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