

University of Nebraska - Lincoln

DigitalCommons@University of Nebraska - Lincoln

Library Philosophy and Practice (e-journal)

Libraries at University of Nebraska-Lincoln

8-31-2021

E-readiness Assessment in Public Libraries: A Case Study of Khyber Pakhtunkhwa, Pakistan

Asim Rashid

Khyber Pakhtunkhwa Elementary and Secondary Education, asimlis77@gmail.com

Mohammad Hussain

Department of LIS, Khushal Khan Khattak University Karak, Khyber Pakhtunkhwa, Pakistan, mhustb@gmail.com

Naveed Iqbal

Department of LIS, Khushal Khan Khattak University Karak, Khyber Pakhtunkhwa, Pakistan, naveedmlis98@gmail.com

Luqman Saeed

Khyber Pakhtunkhwa Elementary and Secondary Education, luqmansaeed_87@yahoo.com

Follow this and additional works at: <https://digitalcommons.unl.edu/libphilprac>



Part of the [Library and Information Science Commons](#)

Rashid, Asim; Hussain, Mohammad; Iqbal, Naveed; and Saeed, Luqman, "E-readiness Assessment in Public Libraries: A Case Study of Khyber Pakhtunkhwa, Pakistan" (2021). *Library Philosophy and Practice (e-journal)*. 6255.

<https://digitalcommons.unl.edu/libphilprac/6255>

E-readiness Assessment in Public Libraries: A Case Study of Khyber Pakhtunkhwa, Pakistan

Asim Rasheed¹, Mohammad Hussain², Naveed Iqbal³, Luqman Saeed⁴

Abstract

Purpose: This study probed e-readiness in public libraries regarding human resources, electronic infrastructure and Network support & IT penetration in services and operations. It also assessed the status of the budget, staff, collection and services of libraries.

Method/Design: The study population comprised 14 public libraries of Khyber Pakhtunkhwa. A quantitative approach was used and the questionnaire-based survey was conducted to collect data from the librarians of public libraries. The collected data was analyzed using the Statistical Package for Social Sciences version 23.

Results: It was found that all libraries were run by LIS professional staff; however, the libraries had limited financial, human and information resources. The e-readiness of human resources demonstrates that they had limited knowledge and a moderate level of skills of ICT and other technologies. All libraries had integrated library software; however, the ICT infrastructure was poor in almost all libraries. It was also observed that the libraries poorly or moderately implemented the IT in the delivery of services. The key factors affecting e-readiness were lack of IT infrastructure, insufficient financial resources and shortage of IT staff.

Implication: The study's findings could be beneficial to the authorities. The key point to be considered includes, sufficient funds should be allocated to procure more resources and ICT apparatus, training be arranged to library staff to enhance their ICT knowledge and skills, libraries should develop proper ICT infrastructure and ICT applications should be used in the library operations and services.

Originality: This is the first study in the country to assess the e-readiness of public libraries. It will fill the literature gap and guide the researchers to do similar studies across the country.

Keywords: E-readiness, Information and Communication Technologies, ICT, Public Libraries, Khyber Pakhtunkhwa, Pakistan

Introduction

The benefits of Information and communication Technologies (ICT) applications in libraries cannot be overemphasized; one of the main benefits is that it enhances creativity and

^{1,4} Khyber Pakhtunkhwa Elementary and Secondary Education

^{2,3} Department of LIS, Khushal Khan Khattak University Karak, Khyber Pakhtunkhwa, Pakistan

innovation, facilitates access to information, provides access to a wide range of information at a time, makes it cost-effective, satisfies users, improves and accelerates the retrieval of information, facilitates the search for information, etc. (Blurton, 1999; Dabbas, 2008). According to Kude (2016), the term ICT includes any communication device or application, encompassing radio, TV, cellular phones, computers and network, hardware and software, satellite systems as well as the various services and applications associated with them. Islam and Islam (2006) stated that ICT is a comprehensive concept that runs parallel with information technology (IT), which denotes not only a single unit of technology but an assembly of technologies. E-readiness refers to an organization's capability to benefit from the computer network and the internet as an engine of retrieving and sharing e-materials. Formally e-readiness can be defined as; "the degree to which a country, business enterprises, the community is prepared and qualified to participate in the networked world in their degree of relative knowledge and preparedness in most of the important areas for the adoption and use of ICT".

Nwabueze and Ibeh (2013) opined that the advent of the internet and other ICT led to information explosion and placed a substantial burden on libraries as custodians of information and other knowledge-based resources. This resulted in libraries facing new challenges, competition, demands, expectations, and various information services from users tailored to their needs. Libraries can significantly benefit from the use of ICT. It improves technical processing and information services (Gill, 2001; Hussain, Khan & Zaidi, 2013). The use of information technologies in libraries can be divided into two broad categories: computer systems and telecommunication systems; Computer systems include all those technologies used for processing information and telecommunication comprise all those technologies used for disseminating information. both these technologies are referred to as ICT (Sheva, 2005)

The organizations where libraries are equipped with e-readiness technology should upgrade them from manual to electronic, which will show minor hindrance for the clients to get insight into the resources, thus making it more prolific and more accessible to share information and communication among libraries within a supportive and recoverable information limit. The e-readiness model designed by by Noorafrooz, Hariri and Hanafizadeh (2012) was modified for the current study to assess e-readiness in public libraries of Khyber Pakhtunkhwa.

E-readiness Assessment Models

Various organizations and institutions develop different models to assess e-readiness. Each model has its objectives, features and dimensions to study e-readiness (Hourali et al., 2008). These can be broadly divided into two categories macrolevel and microlevel. Macrolevel models are those which assess the e-readiness of communities and nations to benefit from ICT facilities at the macro level; these models include such as the Asian-Pacific Economic Cooperation, Computer System Policy Project, Center for International Development (CID), International Telecommunication Union and Networked Readiness Index (NRI). The microlevel models are those designed by individuals and organizations to measure their e-readiness at the microlevel to benefit from ICT facilities; this category includes models like iQNet, Verdict and Perceived Electronic Readiness Model (Keimasi & Chitsazan, 2015). Each e-readiness tool has some defined dimensions and indicators. For example, the CID e-readiness model has five dimensions and 19 indicators (Fathian et al., 2008; Kashorda and Waema, 2011). NRI consists of two indexes and some sub-indexes (Kirkman et al., 2002).

Noorafrooz et al. (2012) developed “e-readiness assessment model” to examine the e-readiness of academic libraries in Iran”. This model was modified with minor changes for the current study. As shown in Figure, it consist of three dimensions, “human resources, electronic infrastructure, and “network support and ICT based services and programs and programs” along with eight components and some indicators.

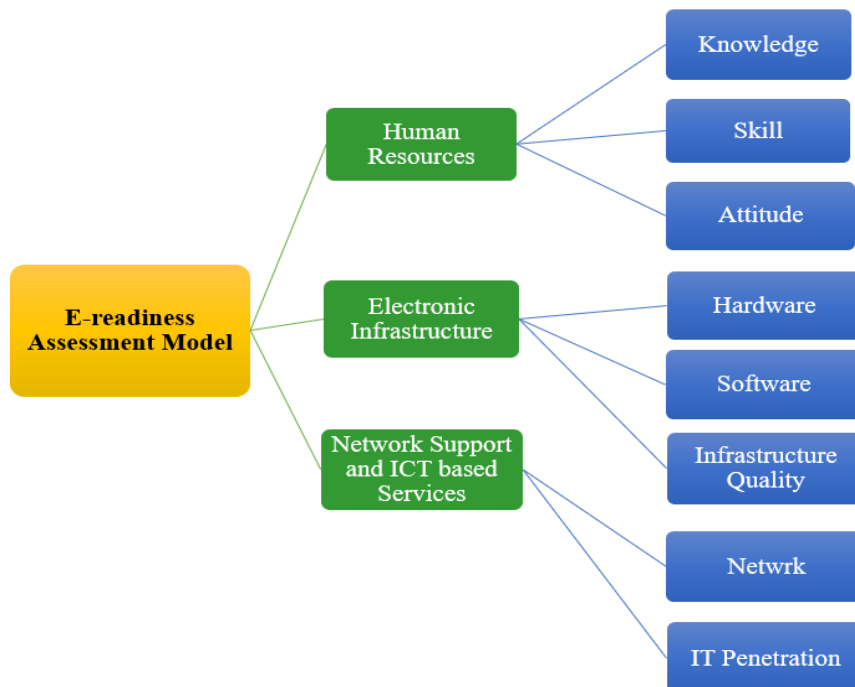


Figure 1 E-readiness Assessment Model

Literature Review

Hussain, Idrees, Faqir, and Haider (2021) evaluated the information and communication technology (ICT) facilities at public libraries and found that most had either terrible or no IT infrastructure. Most libraries had no e-collection and worked without IT personnel. The study also noted challenges that libraries confront in developing ICT infrastructure. Hussain and Nayab (2021) evaluated the ICT competencies of library personnel and found that the staff had knowledge and skills of integrated library systems, Microsoft Office and various web applications. However, they had limited knowledge and no skills to operate and work on institutional repository software. The study also pointed out some problems faced by the library staff while acquiring ICT skills. Rafi (2020) found that the number of visitors, library membership and the use of library services showed a correlation with literacy rate. The available databases were not properly used among users. It was recommended that more public libraries be established to meet the educational and recreational needs of the people.

Warrairch, Haq, and Ameen (2016) emphasized that public libraries play an important role in society in the form of literacy, economy, and cultural development of a region, empower the society and provide resources to the people of the community. Husain and Nazim (2015) investigated the status of ICT in academic libraries of India and found that the libraries used traditional methods for the organization and retrieval of information. Modern ICT-based tools, such as blogs, wikis, RSS, and social networks, were not commonly used in these libraries. The lack of trained librarians, low ICT skills, inadequate infrastructures and lack of funds were the main barriers faced by the libraries in the implementation of ICT. Kumar and Goudar (2013) examined the ICT skills of professionals working in academic libraries and found that the LIS professionals had a desirable level of ICT skills. Sampath Kumar and Biradar (2010) reported that the use of ICT still at a low level in Karnataka College libraries was. The most important reason for that was the lack of adequate funding and IT literate staff.

Kapondera (2016) surveyed ICT use in Mzuzu University Library in Malawi and observed that the library staff had access to ICT resources and services such as the internet, OPAC, computers, and online databases. Though the library staff had good ICT skills, there was still less use of ICT-related technologies in the library due to insufficient budget and lack of user skills. Iyabode (2015) assessed ICT facilities in Nigerian institutions and found that most libraries did not adopt ICT facilities and the staff had varying levels of ICT knowledge.

Many researchers examined the e-readiness of academic libraries in Iran and concluded that the status of e-readiness in most libraries was of moderate or low level (Mahdian, 2013; Nematollahi, 2014; Noorafrooz et al., 2012; Norouzi and Jafarpour, 2013; Shahini, 2014). Badamchi (2012) evaluated Iranian public libraries and found that their e-readiness was 53 percent. Mesgarzadeh and Sepehr (2010) assessed the e-readiness of the Atomic Energy Organization of Iran library. They found that this library had adequate facilities for the creation of a digital library.

Objectives of the Study

The study was designed to achieve the following objectives:-

- To see the status of public libraries in Khyber Pakhtunkhwa
- To present information about the services, building, staff and collection of public libraries.
- To assess the e-readiness of public libraries in term of human resources, electronic infrastructure and network support & ICT based services.
- To identify the factors, influence the e-readiness in public libraries

Statement of the Problem

People are usually unaware of the resources, services and available facilities in the library. This study is an attempt to inform them about what these libraries have and do not have. Moreover, public libraries need to change their traditional environment regarding the collection, services, and staff. The library authorities should make efforts to apply the applications of ICT in their services and resources. At global level the libraries have adopted Information and Communication Technologies (ICT) and IT applications to deliver services at the global level. This study examined whether the modern gadgets and tools have been adopted in the public libraries of Khyber Pakhtunkhwa and also presented a clear picture of where our libraries stand in this technologically mediated era. This study is the first study of its nature to be conducted on the province's public libraries.

Research Methodology and Design

The research was quantitative in nature and the survey research method was used to collect data from the respondents. The data regarding e-readiness was collected from the librarians of 14 public libraries of the provinces in 2019. The evaluation and assessment of e-

readiness of public libraries of Khyber Pakhtunkhwa were checked with the e-readiness assessment model (see Figure 1) As stated earlier, this model was modified, keeping in view the objectives of the study.

The study population was spread over a large geographical area; therefore, questionnaire was the most appropriate tool to achieve the stated objectives. The researchers designed a questionnaire based on the principles of the e-readiness assessment model (Noorafrooz, Hariri, & Hanafizadeh, 2012). The questionnaire was also validated by the experts, then distributed among the respondents for data collection. The collected was analyzed by using Statistical Packages for Social Sciences (SPSS version 22).

Furthermore, the paper's references are prepared and formatted in accordance with the Publication Manual of the American Psychological Association (APA 6th ed.). Moreover, EndNote x8, a citation management application, was used to manage and organize the references.

Data Analysis and Interpretations

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

Establishment and Management of Libraries

The data given in Table 1 shows that there were 14 public libraries in the province of Khyber Pakhtunkhwa. All these libraries were working under the administrative control of the Directorate of Archives and Libraries Khyber Pakhtunkhwa.

When Pakistan came into existence, there was one library in the Peshawar district. The government failed to open a new library until 1990. The oldest library was the Peshawar Public Library, renamed the Shohada-e-Army Public School Public Library after the incidence of Army Public School in Peshawar. The data demonstrate that most of the libraries were established in the last two decades while only three libraries were established from 1990 to 2000.

Table 1
Year of Establishment and Budget Statistics of Libraries

S. No.	Name of Library	Year of Establishment	Budget (PKR*) Year 2017–2018	Budget (PKR*) Year 2018–2019
1	Shohada e Army Public School Public Library Peshawar	1946	84.88 million	96.5 million
2	Rehman Baba Public Library, Peshawar	2006	4.4 million	6.6 million
3	Swat Public Library, Swat	2010	7.0 million	9.1 million
4	Khushal Khan Khattak Memorial Library Akora Khattak, Newshehra	1994	4.7 million	7.2 million
5	Bannu Public Library, Bannu	2005	5.7 million	8.0 million
6	Chitral Public Library, Chitral	2017	6.6 million	8.3million
7	Mardan Public Library	1990	7.9 million	9,8 million
8	Sawabi Public Library, Sawabi	2007	8.2 million	9.5 million
9	Hakeem Abdussalam Public Library, Haripur	2013	16.6 million	11.2million
10	Mufti Mahmood Public Library, DI Khan	2009	4.7 million	8.8 million
11	Kohat Public Library, Kohat	2017	3.2 million	4.5 million
12	Lakki Public Library, Lakki Marwat	2016	4.5 million	6.1 million
13	Abbottabad Public Library, Abbottabad	1993	11.2 million	12.2 million
14	Timergara Public Library, Dir	2014	8.9 million	9.3 million

Note: PKR* Means Pakistan Rupee

Budget of Libraries in Pakistani Rupees

The total budget statistics of public libraries for the years 2018 and 2019 are given in Table 1. These statistics show that the libraries had very less budget because the total budget of most libraries was less than 10 million. It was also observed that all the libraries were run by LIS professionals.

Physical Infrastructure of Public Libraries

All the public libraries were housed in their own (government) buildings. The buildings of most libraries were 54,450 square feet. The two libraries did not have an alternate power supply. Twelve libraries had separate sections for children and women, and these sections also

had related information resources for their users. It was also observed that the majority of the libraries had sufficient seating capacity ranged from 200 to 250, while there was also a library with a seating capacity of 30 to 60.

Human Resources

The data collected from the surveyed libraries shows that all libraries had LIS professional staff. As data given in Table 2 shows, the number of LIS professionals varies from library to library. Nine (64.3%) libraries had 1-2 LIS professionals, 4(28.6%) libraries had 3-5 professionals and one (7.1%) library had more than 5 LIS professional staff. The data of non-professional staff is also mentioned in Table 2, which shows that 6(42.9%) had more than 20 non-professional staff, 5(35.7%) libraries had 15-20 and 2(14.3%) libraries worked with 10-15 non-professional staff.

Table 2

Status of Human Resources

Professional Staff	Frequency	Percentage (%)
1-2	9	64.3%
3-5	4	28.6%
> 5	1	7.1%
Non-Professional Staff		
5-10	1	7.1%
10-15	2	14.3%
15-20	5	35.7%
>20	6	42.9%

Number of Registered Member and Services of Libraires

It was explored that all the libraries offered reference and circulation services to their users however eleven libraries offered photo copying services. The libraries timing was from 9 AM to 8 PM. As for as the data of registered member is concerned 7(50%) libraries had up to 1000 registered members 3 (21.4%) libraries had members from 1001 to 1500 and 4 (28.6%) libraries the had more than 2000 registered users.

Table 3
Status of Registered Member

Registered Members	Frequency	Percentage (%)
Up to 1000	7	50.0%
1001 to 1500	3	21.4%
> 2000	4	28.6%

Information Resources in Public Libraries

The data was collected from the librarians about the information resources available in public libraries. There were 6 (42.9%) libraries with books ranged from 10000-15000 3(21.4%) libraries had 15001-20000 books and book collection of 3(21.4%) libraries were from 20001-25000 and 2(14.3%) libraries had more than 30,000 books. It was found that 2(14.3%) libraries procured 1-4 newspapers, 6(42.9%) libraries acquired 5-8 newspapers and 6 (42.9%) libraries procured more than 8 newspapers. The statistics about the subscriptions of journals/magazines illustrate that majority of the libraries subscribed 2-4 journals/magazines. It was also observed that one library had a collection of CD/DVD, e-books and collection for special people. It was detected that the collection of all libraries were classified according to the Dewey Decimal Classification system; however, the resources of only seven were properly catalogued.

Table 4
Libraries' Collection

Number of Books	Frequency	Percentage (%)
10,000-15,000	6	42.9%
15,001-20,000	3	21.4%
20,001-25,000	3	21.4%
> 30,000	2	14.3%
Number of Newspapers		
1-4	2	14.3%
5-8	6	42.9%
>8	6	42.9%
Magazine/Journal Subscription		
2-4	12	85.7%
5-7	1	7.1%
>7	1	7.1%

E-readiness Status in term of Human Resources

The data about the dimension of human resources was collected from the heads of public libraries and presented in Table 5. The components of this dimension, including "Knowledge, skills and attitude along with their indicators, are given with their means values and accumulative means scores of the components. The accumulative means scores of the components indicate that component of "Attitude" (3.04) received a higher means score than "Knowledge" (2.49) and "Skills" (2.85). The means scores of these two components are below 3, which indicates that they had either poor or moderate knowledge and skills of ICT.

Table 5

E-readiness Status of Public Libraries in term of Human Resources

Component	Indicator	Indicator Score	Component Score
Knowledge	In-service or continuous training of IT to library personnel	3.50	2.49
	Capability of personnel for using network and internet for research objectives and promoting studies	1.71	
	Presence of ICT experts with relevant education certificate	2.28	
Skill	Digital literacy level of library staff	3.35	2.85
	Information literacy level of library staff	3.92	
	Library staff proficiency to design and develop web pages	2.21	
	Library staff proficiency regarding network operation, internet usage in research work, and user advancement and organization research	1.78	
	Level of information and digital literacy of library librarian and personnel	3.00	
Attitude	Awareness of librarian and personnel of the potential of ICT	3.42	3.04
	Capability of personnel for using ICT tools	3.21	
	Access to specialized counsellors related to ICT out of the library	2.21	
	The reliance and credence of the staff to ICT effectiveness in the library	3.35	

Scale: 1= None, 2= Poor, 3= Moderate, 4= High and 5= Very high

E-readiness Status in terms of Electronic Infrastructure

The Table 6 demonstrates the assessment of the dimension electronic infrastructure. The information was gathered from the heads of public libraries regarding the status of electronic infrastructure and displayed in Table 6. This dimension has three components, namely hardware software and Infrastructure quality. The results indicate that the component of "software " shows

a higher value (Mean=4.57) than the other two components. The mean score of the software dimension states that all the surveyed respondents admitted that their libraries had integrated library software for the automation of the library services and other routine works. The availability of hardware facilities was also satisfactory and it can be deduced that the majority libraries were equipped with these facilities.

The librarians of public libraries also assessed the quality of the ICT infrastructure and facilities. The mean values of some of the indicators are very low, indicating the very poor qualities of these facilities. The accumulative means of the dimension is just about average, which means that the qualities of these facilities need much improvement in libraries.

Table: 6.

E-readiness Status of Public Libraries in terms of Electronic Infrastructure

Component	Indicator	Indicators Score	Component Score
Hardware	Existence of facilities and hardware such as computer, scanner, printer, copy, and fax in the library	4.42	4.03
	Existence of telephone in the library	4.28	
	Existence of cell phone in the library	4.35	
	Existence of email in the library and for the personnel	2.64	
	Existence of computer and internet site in the library for members	4.35	
	Existence of computer and internet site in the library for personnel	4.00	
	Existence of a section called IT in the library	4.21	
Software	Existence of an integrated library software	4.57	4.57
Infrastructure Quality	The quality of the organization's support for ICT in the library	3.42	2.29
	The quality of internet bandwidth speed in the library"	3.64	
	Quality of ICT support	2.00	
	Number of computers per users	2.21	
	Number of phone lines per personnel	1.78	
	Number of online users or network population	1.35	
	Number of computers connected to internet for every 20 users in the library"	2.35	
	Number of personnel with personal e-mail	1.64	

Scale: 1= None, 2= Poor, 3= Moderate, 4= High and 5= Very high

Network Support and ICT based Services

The librarians were asked how much the public libraries adopted and implemented the ICT applications in resources, services, and other routine works. The means scores of the various indicators stipulate that the conditions regarding the ICT penetration in public libraries are astonishing. The accumulative mean score shows that the surveyed libraries poorly or moderately implemented the ICT-based services and facilities. The second-dimension network also has below the average value (2.44), which also needs much improvement.

Table: 8.

E-readiness Status of Public Libraries in terms of IT penetration

Component	Indicator	Indicator Score	Component Score
Network	Existence of network in the library	3.78	2.44
	Existence of website for the library	2.28	
	Existence of weblog for the library	2.07	
	Existence of portal for the library	1.64	
IT Penetration	Using ICT in marketing and promoting library resources	2.85	2.52
	Using knowledge management and customer relationship management software	2.28	
	Using RFID technology in the library	2.07	
	Using ICT, such as telephone, internet, e-mail, SMS, etc. to communicate with other libraries	3.71	
	Using ICT and the online environment in the organization of library resources	2.14	
	Using ICT, especially the internet, in orders and collection development of the library	2.64	
	Using Web 2.0 technologies in the library	2.00	

Scale: 1= None, 2= Poor, 3= Moderate, 4= High and 5= Very high

Factors Influencing e-readiness

Table: 9 shows that the factors affecting e-readiness in public libraries. All the factors have a higher mean score indicating that all these factors highly affect the e-readiness in public libraries. The most important factors identified by the librarians were lack of “IT infrastructure” ($\mu=4.64$), lack of IT staff ($\mu=4.50$), insufficient financial resources ($\mu=4.42$) and “cooperation from high authority” ($\mu=3.92$) displaying a considerable gap.

Table 9

Factors Influencing e-readiness

Component	Indicator	Indicator Score	Component Score
Lack of e-readiness factors	Experience staff	4.00	4.28
	IT professional staff	4.50	
	Financial resources	4.42	
	Technical support	4.21	
	Cooperation from high authority	3.92	
	IT infrastructure	4.64	

Scale: Note: 5= Strongly Agree, 4= Agree, 3= Neutral, 2=Disagree, 1=Strongly Disagree

Findings

The major findings of the study are: -

- There were 14 public libraries in the province of Khyber Pakhtunkhwa and all these worked under the administrative control of the Directorate of Archives and Libraries Peshawar, Khyber Pakhtunkhwa.
- The budget statistics of 2018 and 2019 show that the libraries received very less budget to run the libraries' operations and activities.
- All the libraries were housed in their own buildings constructed by the government and most of these had separate sections for children and women. It was also observed that the majority of the libraries had sufficient seating capacity.
- All the libraries were run by LIS professional staff; there was also non-professional staff to do routine and managerial work. All the libraries offered reference and circulation services to their users. The library's timing was from 9 AM to 8 PM. The majority of the libraries had up to 1000 registered members.
- The libraries had books ranging from 10000-25000, while two libraries had more than 30,000 books. It was found that all the libraries procured newspapers in varied numbers and the majority of the libraries subscribed 2-4 journals.
- The collection of libraries was classified according to the Dewey Decimal Classification system; however, the resources of only seven libraries were catalogued.
- The e-readiness of human resources demonstrate that the component of attitude" received a higher means score (3.04) than "Knowledge" (2.49) and "Skills" (2.85). The means

scores of the two components are below 3, indicating that they had either poor or moderate Knowledge and skills of ICT.

- The e-readiness of electronic infrastructure shows that the component of "software" received a higher value (Mean=4.57), indicating that all the surveyed libraries had integrated library software to automate the library services and other routine works. The availability of hardware facilities was also satisfactory in the libraries.
- The mean values of some of the indicators of the component "infrastructure quality" were found very low, indicating the very poor qualities of these facilities. The accumulative means of the component is just about average, which means that facilities need much improvement in the surveyed libraries.
- The accumulative mean score of the component "IT penetration" shows that the surveyed libraries poorly or moderately implemented IT in services and other library operations. The component, "network," also has below the average value (2.44).
- The study explored some factors affecting e-readiness in public libraries: lack of IT infrastructure, shortage of IT staff, insufficient financial resources and lack of cooperation from high authorities, and lack of experienced staff.

Recommendations

Keeping in view the study results following are some of the recommendations to develop and enhance e-readiness in public libraries.

- All the components of the existing public libraries need much improvement; therefore, the government should provide all the necessary resources and facilities as a matter of urgency.
- public libraries should be established in each district of the province to satisfy the informational and recreational needs of the population
- Extension services may be introduced to attract the public to use library resources and enhance the membership of libraries.
- More posts of LIS professionals should be created and appointed to provide better services to the users.
- All the libraries should be opened 24/7 or for a longer time to make possible the best use of the library resources.

- The existing services need much improvement, and more services should be offered, such as Current Awareness Services (CAS), Selective Dissemination of Information (SDI), abstracting and indexing services and reprographic services.
- The concerned authorities should allocate sufficient funds to the libraries to procure both printed and electronic information resources. Moreover, the library should subscribe to more research journals/magazines.
- ICT training should be provided to the library staff to enhance their knowledge and skills regarding the new application and tools used in the libraries to provide the best possible services to their clientele.
- Every library should have a computer lab equipped with computers, internet and Wi-Fi connectivity, where users could browse and access scholarly literature.
- The ICT infrastructure of public libraries needs much improvement. ICT equipment and accessories such as laptops, databases, network servers, multimedia projectors, digital cameras, UPS, scanners, backup devices such as hard disk and DVD/CD could be acquired as these are essential requirements of the technological and digital age.
- It was identified that the public libraries were facing many challenges. The government and the departments concerned should work and make appropriate arrangements to address all these issues so that these information hubs actively serve society.

References

- Badamchi, W. R. (2012). *The Study and Evaluation of E-readiness Assessment Indicators for Iranian Public Libraries Institution* (Doctoral dissertation, Master's Thesis. North Tehran, Iran: Islamic Azad University.[in Persian]).
- Blurton, C. (1999). New directions in education. *The world communication and information*, 46-61.
- Dabas, K. (2008). *IT applications for TQM and library marketing*. New Delhi: Ess Publications.
- Fathian, M., Akhavan, P., & Hoorali, M. (2008). E-readiness assessment of non-profit ICT SMEs in a developing country: The case of Iran. *Technovation*, 28(9), 578-590.
- Gill, P. (2001). *The public library service: IFLA/UNESCO guidelines for development* (Vol. 97): NBD Biblion Publishers.
- Hourali M., et al. (2008). A model for E-readiness assessment of Iranian small and medium enterprises. *Journal of Faculty of Engineering*, 41(7), 969-985.
- Hussain, M., Idrees, H., Faqir, K., & Haider, M. S. (2021). Assessment of ICT Facilities in the Public Libraries of Khyber Pakhtunkhwa: A Descriptive Study. *Library Philosophy and Practice (e-journal)*, 1-18. <https://digitalcommons.unl.edu/libphilprac/5949>
- Hussain, A., Khan, M. A., & Zaidi, N. F. (2013). The ICT based library and Information services: a case study of B-Schools in Delhi and NCR region. *Library Philosophy and Practice (e-journal)*, paper, 1011.
- Hussain, M., & Nayab, S. (2021). Assessment of ICT competencies of lis professionals in public libraries of Khyber Pakhtunkhwa: A quantitative study. *Library Philosophy and Practice (e-journal)*, 1-18. Retrieved from <https://digitalcommons.unl.edu/libphilprac/5661>
- Husain, S., & Nazim, M. (2015). Use of different information and communication technologies in Indian academic libraries. *Library review*.64(1/2), 135-153.
- Islam, S., & Islam, N. (2006). Information and communication technology (ICT) in libraries: A new dimension in librarianship. *Asian Journal of Information Technology*, 5(8), 809-817.
- Iyabode, M.O. (2015). Availability and use of information and communication technology (ICT) facilities by staff of tertiary institutions' libraries in Ondo and Ekiti States. *International Journal of Humanities and Cultural Studies*, 1(4), 1-11.
- Shuva, N. Z. (2005). Implementing information and communication technology in public libraries of Bangladesh. *The International information & library review*, 37(3), 159-168.

- Kapondera, S.K. (2016), "The use and impact of information and communication technology on Malawian academic libraries: A case study of Mzuzua University Library", in *Proceedings of INTCESS2016 3rd International Conference on Education and Social Sciences, 8-10 February, Istanbul, Turkey*, 737-746.
- Kashorda, M., & Waema, T. M. (2011). ICT indicators in higher education: Towards an e-readiness assessment model, 57.
- Keimasi, M., & Chitsazan, H. (2015). Organizational e-readiness web: a model for evaluating e-readiness of Iranian commercial banks in order to develop e-banking. *International Letters of Social and Humanistic Sciences*, 64, 133-142.
- Kirkman, G., Cornelius, P., Sachs, J., & Schwab, K. (2002). The global information technology report 2001-2002. *New York: Oxford*, 4.
- Kude, N. (2016). Use of ICT for the information services and smart librarianship. *International Journal of Innovative Research and Development*, 5(2), 376-379.
- Kumar, P., & Goudar, K. (2013). ICT skills of library professionals in Gulbarga city. *Indian Streams Research Journal*, 2(12), 17-97.
- Kumar, B. T., & Biradar, B. S. (2010). Use of ICT in college libraries in Karnataka, India: A survey. *Program: Electronic Library and Information Systems*, 44(3), 271-282.
- Mahdian, Z. (2013). *Survey of the E-readiness in the Shiraz Medical University libraries from the Managers' Viewpoint* (Doctoral dissertation, Master's thesis. Iran: Shiraz University of Medical Sciences.[in Persian]).
- Nematollahi, Z. (2014). *E-readiness Survey of University Libraries in Shiraz* (Doctoral dissertation, Master's Thesis. Iran: Shahid Chamran University.[in Persian]).
- Noorafrooz, A.H., Hariri, N. and Hanafizadeh, P. (2012). Assessment of electronic readiness of academic libraries: the case of Allameh Tabatabaee University. *Quarterly Information Systems & Services*, 1(2), 17-36 [in Persian].
- Norouzi, Y. and Jafarpour, I. (2013), "Survey of the e-readiness in university libraries: The case of Tabriz University libraries", *Library and Information Science*, 16(1), 123-150 [in Persian].
- Nwabueze, A., & Ibeh, P. (2013). Extent of information and communication technologies integration in public library services in Anambra State Nigeria. *Journal of Applied Information Science and Technology*, 6(2013), 27-37.

- Rafi, M., Ahmad, K. & Jian Ming, Z. (2020), Increasing or decreasing reading trend: An overview of the current status of the public libraries in Khyber Pakhtunkhwa, Pakistan, *Library Management*.<https://doi.org/10.1108/LM-01-2020-0006>.
- Shahini, S. (2014), *E-readiness Survey of University Libraries in Ahvaz from the Managers' and Libraries' Viewpoint*, Master's thesis, Shahid Chamran University, Iran [in Persian].
- Shuva, N. Z. (2005). Implementing information and communication technology in public libraries of Bangladesh. *The International information & library review*, 37(3), 159-168.
- Warraich, N. F., Haq, I., & Ameen, K. (2016). Status of public libraries in Rawalpindi district, Pakistan. *Public Library Quarterly*, 35(1), 72-82.