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Users' Perceptions of E-Libraries in Punjab, Pakistan

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Abstract

The present study employed a quantitative research approach to explore users' perceptions of e-libraries established under the Punjab E-Library Project (PELP) in Punjab, Pakistan. On the basis of the literature review, a questionnaire was developed to gather necessary data for addressing the research questions. The quantitative data was collected from users of four e-libraries by employing the convenience sampling technique. The findings indicate that the majority of the respondents used e-libraries to gain benefit from their resources and services. The respondents used various electronic gadgets, such as desktop computers, laptops, smartphones, tablets to access and use resources and services of the libraries. The respondents viewed services of the libraries as reliable, user-friendly, and easily accessible. E-resources offered by the libraries adequately meet their information needs. The findings have implications for the library administration and LIS professionals to continue and further improve resources and services of the libraries in accordance with users' needs and expectation.

Keywords: Electronic libraries, digital libraries, electronic resources, electronic services, users' perceptions, Punjab e-library project, Punjab, Pakistan

Introduction

The first published usage of the term ‘electronica libraries’ (e-libraries) may be traced back to a report of the Corporation for National Research Initiatives (CNRI) published in 1988, which was further popularized by different organizations and Research in Digital Libraries (DLs) Initiative announced in late 1993 (Griffin, 1998). E-library has now become a buzzword in the ever-expanding field of knowledge, information, and learning. It is a modern form of a library that utilizes computer-based electronic resources to augment the process of learning and revamp library services (Okyere-Kwakye & Nor, 2020). It is a multi-disciplinary concept as several academic disciplines particularly relevant to computer science that includes information systems, data science, information technology, the web, artificial intelligence, cloud technology, and machine learning are utilized by such libraries for providing multi-dimensional services to their users (Kumar, Kumar, & Raj, 2018).

The information systems have transformed researchers’ information-seeking behavior, and electronic resources have become the most often used tools for researchers to stay up-to-date with new material in their respective specialized areas. Many educational institutions across the world have shifted from the traditional style of materials and study to digital formats (Olle and Borrego, 2010). E-libraries are a form of sophisticated, modernized, and complex information systems (Fox, 1993), as they serve highly diversified, integrated, interrelated, and interdependent services from selection, collection, preservation, distribution, and retention of the digitized resources. E-libraries are pivotal for providing the requisite data services promptly to the users regardless of their location (Venkata, 2009). The promise of an e-library resides in its usage of a digital network connection in the library, where users may enjoy the pleasure of being at a place while yet accessing the library’s contents. Hence, an e-library reduces physical barriers for information storage, access, recovery, and sharing of

information to users both locally and globally with the use of an internet network (Theresa & Jerome, 2010).

Statement of the problem

With the advent of ICT into libraries, the way the information is created, preserved, organized and disseminated has changed. It has also affected users' information seeking behavior. Users now expect the libraries to provide their required information at their offices, homes or whatever location they work at. Keeping in view benefits of e-libraries and users' expectations, the establishment of the e-libraries is on the rise across the globe. In Pakistan, the Government of Punjab has set up e-libraries in the major districts of the province to provide access to electronic resources and services in order to meet users' information needs remotely. In order to find out how far these e-libraries are effective in meeting users' information needs, there was a need to explore users' perceptions and usage of these libraries, so that necessary measures can be taken to improve these libraries in line with users' expectations.

Research questions of the study

The purpose of this study is to explore users' perceptions of e-libraries in Punjab, Pakistan. It aims to address the following research questions:

- 1) What is the usage of e-libraries among users?
- 2) What electronic gadgets do users have to use resources and services of e-libraries?
- 3) What is the level of users' expertise to use electronic gadgets?
- 4) What are users' perceptions about e-libraries?

Literature review

Need of e-libraries

The development of e-libraries or digital libraries or virtual libraries can be traced back to the production of the first-ever e-book by Guttenberg during the year of 1971 which came out as a result of quenching Michael S. Hart's thirst for serving the users of library services in e-formats (Bazillion, 2001). The advent of e-resources is a major innovation of the modern age that has a significant impact on the scholarly and educational community and the utilization of such information sources has been widely improved and established (Amjad, 2013).

In recent times, the internet has revolutionized the concept of modern e-libraries. Being one of the most significant tools for searching, collecting, storing, retrieving, and disseminating information, it has paved the way for the robust establishment of such libraries across the globe (Arms, 2005). Digitized resources, especially e-journals, have become part and parcel of today's academia, and the academic community relies on them to a greater extent for delivering their professional, academic, and research endeavors (Feng, Jeusfeld, & Hoppenbrouwers, 2005).

The research fraternity prefers digital library resources because of their reliability, authenticity, and convenience (Chirra & Margam, 2009). The research conducted by Dorner (2004) brought out that there is a significant positive relationship between the procurement and implementation of e-resources and the academic and research output. A comparative study of the digital and physical libraries and their services in real-time setting by Notess (2004) at the Indiana University, USA, brought significant results regarding the usage of digitized resources than that of the traditional library services. Likewise, Al-Saleh (2004) found that 61.1% of the respondents utilize digital resources for preparing their class assignments in higher education institutions in Saudi Arabia. Whereas, 50% of them used these resources for academic pursuits

and 47% of the participants benefited from such services for their personal use. As noted by Marchionini, Plaisant, and Komlodi (2003), the success of digital library resources may be assessed by the level of satisfaction expressed by the users, the achievement of their information needs, and enhancement in their achievements over time. A study conducted by Mandel and Minimanl (1997) concluded that e-resources and their usage for completion of academic and research pursuits appeared satisfactory to the users.

McMartin et al. (2008) analyzed the responses of students and faculty members, regarding usage of electronic resources, from 119 institutes of higher learning across the United States. The survey concluded that the users were pleased with the services offered by digital libraries. There is a budding consensus of the researchers regarding the awe-inspiring role of digital resources to augment their respective research agenda and share authentic knowledge through e-resources, especially using e-journals (Borrego, 2007). There is a mounting indication that technologically-enabled learning environments have a positive correlation with education and economic advancement and providing life opportunities (Thioune, 2003). Another research study conducted by Hoq (2015) underscores that ICT interventions in the provision of library services can accelerate life opportunities for the users as compared to the traditional library setups. Hence, digital libraries are pivotal in the sense that they can help bridge the widespread digital divide as well as reduce the urban-rural disparities across communities (Bashir, 2011). A study in the context of rural communities of Malaysia highlights that e-libraries can potentially advance the literacy rates (Ramzan, 2004), health and well-being, and economic opportunities that may lead towards community empowerment (Samsuddin & Shaffril, 2019). In short, e-libraries facilitate effective information distribution to all users at a low cost and play a critical role in knowledge development and distribution (Anyim, 2018).

Establishment of e-libraries in Punjab

The Government of Punjab established e-libraries under the Punjab E-Library Project in the major districts across the province in order to revive and thrive the culture of reading and learning amongst the public at large. These libraries are linked to a central digital platform, called Central Digital Library, at the Data Centre of Punjab Information Technology Board in Lahore. This platform provides users with the access to multiple e-resources such as, e-books, e-journals, e-theses, documentaries, audio-visual materials, e-magazines, national and international e-newspapers, reference materials, data sources, and hundreds of indigenous documents (E-library, n. d.).

The main objectives of e-libraries are as follows:

- “Revitalization of the listening and thinking culture in the broader public, particularly among kids, families, and elderly persons;
- Inculcate e-reading and e-learning culture between the general public, students, teachers, and our society at great;
- Establish and run a centralized Digital Library of e-books, e-theses, Pakistani laws, Pakistani press clippings, annual company reports, and indexes of Pakistani periodicals, documentaries, and DVDs;
- Investigate and supply free, paid, subscription, and indigenous e-resources;
- Promote and convince authors/publishers to make eversions of their publications freely available online readings and charged downloading via electronic payments (simple paisa, for example);
- Give general population online access to great worldwide e-collections;
- Give network access by VPN and on-site access via hotspots in Punjab libraries;
- Economize access to information” (E-library, n. d.).

Research methodology

The present study employed the quantitative research method to address the research questions. On the basis of literature review, a questionnaire was designed to explore users' perceptions about e-libraries. The necessary quantitative data was collected from users of four e-libraries established under the Punjab E-Library Project in South Punjab, Pakistan i.e. E-Library Bahawalpur, E-library Rahim Yar Khan, E-Library Multan, and E-Library Vehari. by employing the convenience sampling technique.

Data analysis

The data gathered through the questionnaire was entered into IBM SPSS, Statistics, Version 21 for analysis. The descriptive statistics (i.e. means, frequencies, percentages, and standard deviation values) have been used to analyze and describe the data. The data are analyzed and presented under the following sections.

Response rate

Out of 400 respondents who were delivered the questionnaires, 301 respondents filled and returned the questionnaire with a response rate of around 75%. Amongst these 301 respondents, the majority of the respondents 92 (30.5%) belonged to e-library Vehari, 81 (27.0%) to e-library Bahawalpur, 70 (23.2%) to e-library Multan and 58 (19.3%) to e-library Rahim Yar Khan (Table 1).

Table 1: Response rate (N = 301)

Name of e-library	Frequency	Percentage
E- Library Vehari	92	30.5
E- Library Bhawalpur	81	27.0
E- Library Multan	70	23.2
E- Library Rahim Yar Khan	58	19.3
Total	301	100.0

Respondents' gender

Among 301 total respondents, the majority of the respondents (221, 73.4 %) were male and 80 (26.6%) were female (Table 2).

Table 2: Respondents' gender (N=301)

Gender	Frequency	Percentage
Male	221	73.4
Female	80	26.6
Total	301	100.0

Respondents' area

Out of 301 respondents, 157 (52.2 %) respondents hailed from rural areas, while 144 (47.8%) were from urban backgrounds (Table 3).

Table 3: Respondents' area (N=301)

Area	Frequency	Percentage
Rural	157	52.2
Urban	144	47.8
Total	301	100.0

Respondents' age group

As far as age groups of the respondents is concerned, the majority of the respondents 182 (60.5%) were between 21-25 years of age, 75 (24.9%) were between 15-20 years of age, and 44 (14.6%) were between 26-29 years of age (Table 4).

Table 4: Respondents' age group (N=301)

Age Group	Frequency	Percentage
21-25 years	182	60.5
15-20 years	75	24.9
26-29 years	44	14.6
Total	301	100.0

Respondents' academic qualification

Respondents were asked to inform about their academic qualifications. Out of 301 respondents, the majority of the respondents 125 (41.5%) held a Master's degree, 91 (30.2%) an undergraduate degree, 43 (14.3%) an intermediate certificate, while 39 (13.0 %) had an M.Phil, degree and 3 (1.0 %) a Ph.D. degree (Table 5).

Table 5: Respondents' academic qualification (N=301)

Academic qualification	Frequency	Percentage
Master	125	41.5
Undergraduate	91	30.2
Intermediate	43	14.3
M.Phil	39	13.0
Ph.D.	3	1.0
Total	301	100.0

Usage of e-library

The respondents were asked to inform whether they used the e-library. Out of 301 respondents, most of the respondents (251, 83.4%) informed that they used services and resource of the e-library, while 50 (16.6%) respondents denoted that they did not utilize the e-library services and resources (Table 6).

Table 6: Usage of e-library (N=301)

Use of e-library	Frequency	Percentage
Yes	251	83.4
No	50	16.6
Total	301	100.0

Duration of e-library usage

Of the 251 respondents who used the e-library, 113 (45.0%) respondents had been using the e-library for less than one year and 112 (44.6%) participants for 1-2 years. While, 21 (8.4%) respondents informed that they had been benefitting from the services and resources of the e-library for 3-5 years, and only 5 (2.0%) respondents for more than five years (Table 7).

Table 7: Duration of e-library usage (N=251)

Duration	Frequency	Percentage
Less than 1 Year	113	45.0
1-2 Years	112	44.6
3-5 Years	21	8.4
More than 5 Years	5	2.0
Total	251	100.0

Amount of time spent on using e-library

Out of 251 survey respondents who used the e-library, 124 (49.4%) participants informed that they usually spent one hour or less in a week on using the e-library, 102 (40.6%) 1-5 hours, 23 (9.1%) 5-10 hours per week. While, only 2 (0.8%) participants reported that they spent more than 10 hours per week to utilize the e-library (Table 8).

Table 8: Time spent on using the e-library (N=251)

Time spent	Frequency	Percentage
1 hour or less	124	49.4
1-5 hours	102	40.6
5-10 hours	23	9.1
Over 10 hours	2	0.8
Total	251	100.0

Availability of electronic gadgets with respondents

Out of 301 respondents, 109 (36.2%) respondents had desktop computers, 86 (28.6%) laptops, 72 (23.9%) smartphones, 34 (11.3%) tablets for using the resources and services of the e-library (Table 9).

Table 9: Availability of electronic gadgets with the respondents (N=301)

Type of Gadgets	Frequency	Percentage
Desktop	109	36.2
Laptop	86	28.6
Smartphone	72	23.9
Tablet	34	11.3
Total	301	100.0

Respondents' expertise in operating electronic gadgets

The participants were asked to rate the level of their expertise to use various electronic gadgets required to access electronic resources and services offered by the e-library. The majority of the respondents (99, 32.9%) rated the level of their expertise to use electronic gadgets as very good, 77 (25.6%) as excellent, 69 (22.9%) as good, 52 (17.3%) as satisfactory. While, 4 (1.3%) respondents reported that they lacked necessary expertise to use the electronic gadgets (Table 10).

Table 10: Respondents' expertise in operating electronic gadgets (N=301)

Level of Expertise	Frequency	Percentage
Very Good	99	32.9
Excellent	77	25.6
Good	69	22.9
Satisfactory	52	17.3
Unsatisfactory	4	1.3
Total	301	100.0

Respondents' perceptions about e-libraries

The respondents' perceptions about e-libraries (EL) and their resources and services were obtained by using a five-point Likert scale (1=Strongly disagree, 2=Disagree, 3=Undecided, 4=Agree, 5= Strongly agree). The respondents agreed that the services offered by EL are user-friendly (M=3.95, SD=.872) and easily accessible (M=3.88, SD=.948). They agreed that EL has revived the reading and learning culture (M=3.88, SD=.753), inculcated e-reading and e-learning culture in users, especially amongst students (M=3.88, SD=.723). They also agreed that the services offered by EL are reliable (M=3.87, SD=.855), the material they need for studies come from EL (M=3.86, SD=.850), e-resource offered by the EL meet their

information needs (M=3.85, SD=.846), they often utilize the EL and its resources and services (M=3.71, SD=.792) (Table 11).

Table 11: Respondents' perceptions about e-libraries

Statements	N	Mean	SD
The services offered by EL are user-friendly	301	3.95	.872
The services offered by EL are easily accessible	301	3.88	.948
EL has revived the reading and learning culture	301	3.88	.753
EL has inculcated e-reading and e-learning culture in users, especially amongst students	301	3.88	.723
The services offered by EL are reliable	301	3.87	.855
The material I need for my studies come from e-library	301	3.86	.850
E-resources offered by EL meet my information needs	301	3.85	.846
I often utilize the e-Library and its resources	301	3.71	.792

T-test was performed to determine the difference between perceptions of male and female participants regarding EL. No significant difference between the perceptions of male and female participants about e-library, and its resources and services was found, with the significant value of 0.615 (Table 12).

Table 12: Result of t-test regarding respondents' perceptions about e-library with respect to gender

Statement	N	Gender	Mean	T	Sig.
Perceptions about e-library	221	Male	3.78	.504	.615
	80	Female	3.74		

Similarly, a t-test was performed to determine the difference between the perceptions of respondents living in rural and urban areas about EL. There is a statistically significant difference between the perceptions of respondents hailing from rural and urban areas about resources and services of EL, as the value of p is .001 which is less than the significant value of .05 (Table 13).

Table 13: Result of t-test regarding respondents' perceptions about e-library with respect to area

Statement	N	Area	Mean	T	Sig.
Perceptions about e-library	157	Rural	3.88	3.555	.001
	144	Urban	3.64		

Findings of the study

The major findings of the study with relation to the research questions are described as follows:

R.Q1. What is the usage of e-libraries among users?

The results show that the majority of the respondents used resources and services of e-libraries. Most of them had been using the libraries for less than two years, some of them for more than three years and a small number of participants for more than five years. Nearly half of the respondents spent one hour per week on using the library. A significant number of

participants used the library for one to five hours a week, while some of them benefitted from the library resources and service for five to ten hours in a week.

R.Q 2. What electronic gadgets do the users have to use resources and services of e-libraries?

The findings reveal that most of the respondents had desktop computers to access and use resources and services of the e-libraries. A significant number of participants had laptops and smartphones, while some of them possessed tablets for this purpose.

R.Q 3. What is the level of users' expertise to use electronic gadgets?

The majority of the respondents rated the level of their expertise to use electronic gadgets as very good, a significant number of participants as excellent, another significant number of users as good, while some of them rated their expertise to use the gadgets as satisfactory. It implies that most the respondents possessed adequate skills to use electronic gadgets effectively to use e-library resources and services.

R.Q. 4. What are users' perceptions about e-libraries?

The respondents considered that services offered by e-libraries are user-friendly, easily accessible and reliable. They were of the view that e-libraries have revived the reading and learning culture, and inculcated e-reading and e-learning habits in users. E-resource offered by the libraries meet their information needs as they obtained most of the reading material they needed for studies from the e-libraries. The respondent seemed satisfied with resources and services of the libraries. No significant difference between the perceptions of male and female participants about e-library, and its resources and services was found. Whereas, a statistically significant difference between the perceptions of respondents hailing from rural and urban areas about e-library resources and services was found.

Conclusion

The study employed the quantitative research method to address the research questions. The quantitative data was collected from users of four e-libraries established under the Punjab E-Library Project in South by employing the convenience sampling technique. The findings suggest that the majority of the respondents used e-libraries to gain benefit from their resources and services. The respondents had been using the libraries for more than two years. The respondents possessed various electronic gadgets, such as desktop computers, laptops, smartphones, tablets to access and use resources and services of the libraries, had adequate skills and expertise to utilize these gadgets. The respondents seemed satisfied with resources and services of the libraries. They viewed services of the libraries as reliable, user-friendly, and easily accessible. They obtained required information from resources of the libraries to meet their information needs, and were of the view that the libraries have inculcated e-reading and e-learning culture among users. The findings have implications for the library administration and LIS professionals to continue and further improve resources and services of the libraries in accordance with users' expectation and satisfaction.

Recommendations

The following recommendations are made:

1. The government authorities should enhance budget of the libraries in order to enhance resources and infrastructure including ICT equipment of the libraries.
2. The libraries should improve their ICT infrastructure including computers, internet, website, VPN to facilitate users to access and use the service and resources effectively.
3. The libraries should hire competent and skilled LIS professionals to manage libraries effectively. The existing staff should be provided with the opportunity to brush up their professional knowledge and skills. In-house training sessions should be arranged for

the library professionals, and the staff should be encouraged to attend workshops, seminars organized by library associations and schools in the country.

4. The e-resources of the libraries should be enhanced keeping in view users' information needs in different subject areas.
5. The libraries should promote and publicize their resources and services regularly through some effective marketing techniques such as awareness sessions, publicity through radio, television, newspapers, brochures, etc.
6. Libraries should be open 24/7 or their opening hours should be extended so that maximum people can get benefit from the facilities offered by the e-libraries;
7. E-libraries should publish regular reports (at least every quarter) regarding the number of users they served, the number of new e-resources they added, any process improvements, details regarding the awareness sessions and seminars conducted by them. Such gesture will not only help tap the performance but also promote a healthy competition among the counterparts to take the lead while transforming their processes.

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