



ASIAN BULLETIN OF BIG DATA MANAGEMENT

<http://abbdm.com/>

ISSN (Print): 2959-0795

ISSN (online): 2959-0809

The Perspective of Reading in the Digital Age: Insight from a Study of Digital Literacy Skills at Liaquat Memorial Library Karachi

Naseem Ullah Khan*

Chronicle**Abstract****Article history****Received:** Nov 3, 2024**Received in the revised format:** Nov 27, 2024**Accepted:** Dec 11, 2024**Available online:** Dec 28, 2024

Naseem Ullah Khan is currently affiliated with the Department of library information sciences, University of Karachi, Pakistan.

Email: naseem0601@gmail.com

This article aims to identify the need for digital literacy skills of one of the greatest and oldest public library users, Liaquat Memorial Library (LML). The study investigates the basic needs of library users and how much a public library supports their users in using different services, computers, the internet, e-resources, and their skills in using digital tools for reading in the library. This article focuses on the users of a public library, which is present in a metropolitan city in Pakistan. Liaquat Memorial Library (LML) has a vast number of repositories, and these repositories must be digitized. It is essential to suggest that the digitization of documents is required, and for digitization, first, we must check the interest and level of users in digital literacy. To achieve the desired knowledge of Liaquat Memorial Library (LML) users, comprehensive work has been developed to measure the identifying needs of users in Liaquat Memorial Library (LML). Data was collected from daily library visitors using a quantitative survey method. A peer-reviewed and pre-tested questionnaire was used to gather quantitative information from the respondents. Almost fifteen hundred users visit the Liaquat Memorial Library (LML) daily, and a total of 423 users participate in filling out the questionnaire on a printed form. The study reveals the digital literacy of Liaquat Memorial Library (LML) users. The Liaquat Memorial Library (LML) users are highly skilled in using different applications and digital platforms for knowledge gain. The study also reveals that users know digital literacy skills, but LML still runs in the old, traditional format. The result shows that users know digital literacy and require digitization in LML to develop the community and their future.

Corresponding Author*

Keywords: Digital literacy (DL), Digital Literacy Skills (DLS), Liaquat Memorial Library (LML), Public libraries, Diverse communities, Internet of Things (IoT), Internet, and Information and Communication Technology (ICT).

© 2024 The Asian Academy of Business and social science research Ltd Pakistan.

INTRODUCTION

Public libraries are made for diverse communities, and in public libraries, people come here as a place to read, write, and relax during their busiest lifespan. In Pakistan, fast Internet came late compared to developed countries. With the arrival of the Internet in libraries, the concept of traditional libraries has changed. People go there for wireless networks, enjoy social media sites, surf hours, and search different cities for educational purposes. According to Trepanier (2012), having digital skills means using computer hardware and software, information systems, and other contemporary technical instruments and handling electronic data securely. According to Chinien and Boutin (2011), "digital technical skills" refers to the use of technical tools, software applications, and expertise to implement security measures to secure electronic data." Digital literacy is the capacity to locate, utilize, and produce information using digital tools. Public capacity increased after libraries provided internet facilities, and people spent hours in libraries. When the strength increased, managing the people and patron registration was challenging for the public libraries, so they started to build better services like E-library corners, silent rooms, or halls instead of issuing books for

home reading. Public libraries have begun to enhance their study areas and provide internet services in a silent and comfortable environment. The single book concept is gone, along with access to the internet for every person in Pakistan. With the spread of internet facilities, information is overloaded, and people do not rely on a single source of information. In the 21st century, life is switching to digital. We can call today's world a digital world. In this digital world, we must have adequate knowledge about digital literacy, and comprehensive skills are required to use different digital devices. DL is developing daily, and technology is being enhanced and included in every aspect of life.

AI is the advanced shape of technology and improves people's performance, education, and products. The definition of DL is the range of practices people engage in working together, creating, and communicating using digital texts and technologies. The capacity to explore and understand online information is increasingly essential in today's quickly expanding digital environment (ALA, 2011). People who use the internet for all their work purposes are called "netizens" or "net users." The term "digital literacy" was first used in the 1990s, at the height of the Internet revolution. Before it, "computer literacy" received greater attention. However, historian and educator Paul Gilster first used "digital literacy" in 1997, claiming that it encompassed more than technological proficiency. He claimed the goal is to "master concepts, not keyboard shortcuts." DL means that you know existing technologies, your communication skills are very high online, and you can manage the team by leveraging technologies. Different applications were launched during the Coronavirus pandemic to acquire online learning. To preserve their existence in the technological age, libraries must incorporate current technology.

The library environment has altered because of Internet and web usage. Web 2.0 libraries must establish social media, e-books, OPAC, virtual reference services, interact online with a librarian, text message notification services, bibliographic details and resource data, and text-a-librarian services. Libraries may assist patrons by educating them and giving them information based on their interests (Negi et al., J. P., 2014). Martin (2008) provided a thorough explanation of "Digital Literacy". He groups "co-literacies" that have expanded new and enhanced relevance in the electronic field, such as media, visual, and ICT literacy. Public libraries are the hub of all communities and provide facilities for ordinary people. They play a vital role in community development. Many university students visit the library to prepare for exams at the LML. During exams, all the halls (Main hall, CSS section, ladies' section) are full of students, and some leave the library due to the shortage of sitting places in library halls. In LML, the problem is different from the place or people. The research aims to determine how people will benefit from LML in this digitized area of our future, how people will literate themselves according to the digital services, and what users of public libraries want.

Liaquat Memorial Library

DLS is needed among LML readers to pinpoint potential areas for development. LML is one of the most extensive public libraries in Sindh, Pakistan, near Liaquat National Hospital in Karachi. It has various sections, including the CSS section, Quran Section, Ladies' research corner, Separate Mosque for female and male users, newspaper section, and main hall with an upper and lower portion for reading. Lincoln Corner, E-library, Canteen, Children, and Photocopy facilities are also available in LML. Almost 1500 to 2000 people visit LML. It is a silent Library and the best place for reading, writing, and preparation at any time in the library. Liaquat Memorial Library has more than

two hundred thousand printed books collections. Almost everyone came to the library with their laptops, Android phones, or other gadgets for learning. Separate Wireless routers are available in every room of the library. LML also provides an E-library corner with a concise space where 10 to 12 people will sit simultaneously. The e-corner has no time limit for single computer users.

- To determine the level of DLS of the Liaquat Memorial Library readers.
- To assess LML readers' preferred format between print and electronic media.
- To assess the availability of reading material on paper or electronic sources in LML.
- To evaluate the problems the LML readers face in searching for reading material.

Significance of the Study

The LML, one of the oldest public libraries in Pakistan, is not just a place for knowledge and exam preparation but a cornerstone of the community. This study is critical because of several reasons. First, it evaluates the general digital skills used by the users in the library. The second thing is how to focus on the different facilities provided in the most significant public library. The third reason is their knowledge of new DL tools such as online databases, e-books, and digital reference services. The fourth issue highlighted the feasibility of digital literacy and which format they prefer to read most. This research will be helpful for the upcoming development of public libraries.

LITERATURE REVIEW

According to Abass, Hussain, and Rasool (2019), DL can be a powerful tool for overcoming educational challenges. While they found that its use to access information has little effect on a student's GPA, it significantly impacts their communication skills, research ability, and confidence. Asad, M. M. Gul, and Lashari (2020) further highlight the empowering potential of digital literacy. Their study shows that if teachers are equipped with digital literacy, their students can continue their education even in challenging circumstances, such as the Corona epidemic. Aabo (2005) discussed the function and importance of public libraries in the digital age while considering the difficulties brought on by technological development and the internet. It draws attention to potential drawbacks of the digital age, like the digital divide and the loss of sense of place that would reduce social engagement. According to prior research, public libraries significantly affect people's lives and populations. The article focuses on the distinctive qualities of public libraries as actual gathering places and makes a case for enhancing their democratic function in fostering social inclusion and citizenship. The Norwegian Ministry of Culture deems public libraries crucial for advancing democracy and cultural and educational policies.

According to Ahmed and Rehman (2016), there are no opportunities for skill learning or improvement, and librarians' current competence levels must be improved. Additionally, their findings recommended training to raise the present level of digital abilities, which might enable these librarians to address the issue of skill gaps in Pakistan. According to Baro et al. (2019), university professors had relatively high levels of DL while utilizing open-source software, email, and other technologies. Brown (2009) investigated the connection between pupils and their level of DL performance and concluded that there is a good connection between the two. Christy and Yusuf (2021) studied academic librarians' levels of DL in Nigerian universities. The article claimed

that website creation and metadata knowledge could be higher to moderate. The study shows that the sample investigated needs better digital literacy. The study also discusses the financial difficulties and lack of interest library professionals have challenges in DL.

Burdi (2023) highlighted the issues public libraries face in Pakistan in this digitized era. The study was based on articles, websites, e-books, journals, etc. Data was collected from all three sources (primary, secondary, and tertiary). The researcher highlighted that information literacy is critical these days. However, the main issue is that public libraries must still be based on old digital technologies. The primary users are university students who require the latest technologies to gain knowledge. The researcher highlighted basic computer skills as the central issue in public libraries' efforts to promote literacy in Pakistan. Pakistani libraries need skilled workers, and they must be required to collaborate with school and university libraries. The study stresses to policymakers the need to promote public libraries for diverse communities. They attempted to demonstrate DL abilities among healthcare professionals at the GGS Medical College in Faridkot, Punjab, Brar, I.S. (2015). As the first line of defense in a pandemic, healthcare personnel should be prepared to manage raw data for further industrial research. Microsoft Office and other internet-based programs were known to 84% of the study participants. Eighty percent of the researchers could evaluate the accuracy and dependability of the data they used in their research, which included 94% of them using data from various e-resources.

According to a study by Deng (2010) conducted in Australia, DL profoundly impacts our daily routines. People use electronic resources for various purposes, including learning about a particular topic, gaining general knowledge, locating answers to specific questions, finishing coursework and projects, perusing existing works like literature, writing essays, and aiding decision-making. Users employ electronic resources for all of the purposes above, he continued. Users today rely on the accessibility of electronic resources to fulfill many of their academic obligations, claims the report. Therefore, digital learning resources are crucial to education, including laptops, cellphones, tablets, desktops, and other relevant electronic database resources.

Echo360 (2012) stated that students today need to link with their peers, teachers, and university to exchange information. When discussing their studies with classmates, students may use Facebook or other social networking sites, but they hardly ever communicate with their teachers using these platforms. With their easy internet access, teenagers increasingly use it for academic research. According to Thomas (2004), they use it as their primary resource for completing school projects 71% of the time, visit websites made by their school or class 58% of the time, download study materials 34% of the time, and even create webpages for school projects 17% of the time. This underscores the significant role of digital literacy in academic research. According to Eshet-Alkalai (2004), digital literacy means using technologies that require various challenging cognitive, physical, sociological, and emotional skills to function correctly in digital environments. According to Eurostat's (2015) research, almost 80% of young people only use the Internet for social interactions. However, relatively little technology is used by the public for educational reasons. In university libraries in the Nigerian states of Edo and Delta, Emiri attempted to investigate the current levels of DL among librarians. Many librarians used email for communication; they had become digitally literate through IT programs but only used it moderately. Library service delivery has benefited from individuals with strong digital literacy skills.

Lack of digital infrastructure, financial limitations, and training hindered delivering digital skills. Libraries should hire librarians who are proficient with technology, or they should implement competency development programs. (Emiri, 2017) Fraser (2009) defined DL as the accumulation of analytical reasoning, technological understanding, and social interaction. This is an alteration of Newman's explanation. This foundational work highlights the value of actual practice and involvement in daily life as essential to developing socially situated digital literacy (DLS). DLS is the competency to use computer technologies without the help of professional and qualified staff present in the library. With the invention of the Internet and social media, these skills have been shifted to mobile devices.

Gillen and Barton (2009) suggested looking for similarities and similarities rather than apparent differences to separate the different ideas. The term "digital literacy" was created to take the role of many outmoded literacies, including information literacy, computer expertise, artistic literacy, and technological competence. Exploring new and original terms that are more relevant in the Internet era and online communications took much effort. The term DL first appeared in the book (Gilster, 1997). He tried to clarify the concept of digital literacy, shifting it from "the capability to retrieve distributed computing assets and utilize them to begin "partly about our ability to communicate with others to discuss problems and obtain support as well as our comprehension of other people."

Ginger (2015) explores in his dissertation how public libraries support digital literacy in impoverished populations in Illinois. Data were gathered through site visits and librarian interviews in sixteen places with high poverty rates. The results show that libraries are increasingly important because they aggressively promote aided public computers, coordinate neighborhood networking initiatives, and foster generative learning opportunities. These findings have significant ramifications for social inclusion, diversity, and the development of digital literacy programs. Jeffrey et al. (2011) conducted a case report created among four institutions of more excellent learning to investigate the challenges and assistance students need to develop digital information literacy. Digital competency development requires skill development procedures, not just exposure to technology. Socioeconomic limitations, gender prejudice, age differences, and adaptation to new technology are all significant roadblocks in this process. One way to overcome this barrier is through social media-enabled collaborative learning.

Khatun et al. (2015) inspected the public library staff in Norway to learn more about their digital literacy levels and the challenges in developing their knowledge. Library professionals advise overcoming three obstacles to improve DLS: organizational, personal, and technological. Experience is crucial for enhancing digital literacy abilities, so educating young professionals about the field of librarianship by seasoned professionals can remove this barrier. Technology-related barriers can be overcome with training and regular orientation programs.

Kinney (2010) stated that American community libraries increasingly offer Internet access as a vital service in closing the digital divide. Researchers have examined the growth of freely accessible devices in library systems serving various economic statuses and demographic communities using data from the 2000 United States Census. No differences were discovered based on household income, but a growing gap was seen in regions with higher proportions of non-white and non-English-speaking households. Additionally, research on the influence of connectivity to the Internet on library use reveals that having Internet terminals encourages visits and

regard transactions but has little impact on circulation. Additionally, there is no discernible correlation between the number of Internet terminals and library usage. The literature highlights the value of equitable Internet access and services designed to suit the requirements of distinct communities in public libraries.

According to McShane (2011), public libraries have recently experimented with incorporating user-generated or community-contributed information using Web 2.0 tools. Although some commentators perceive this as a departure from information power and the professional paradigm, the article makes the case for caution. This implies that such experiments should be investigated, considering the more extensive organizational stipulations of literacy, civic participation, and access. The review focuses explicitly on libraries in Australia. It emphasizes how digital technologies change library practices and how libraries relate to schools and formal and informal education. It mentions how significant public libraries embrace participatory culture to build new relationships with audiences, improve their understanding of collections, and promote innovation. However, more research is required to fully comprehend how these initiatives fit into the larger literacy project and how they might be used in the informal education sector. According to the literature review, a critical analysis of the relationship between in-school and out-of-school literacy is also required, which notes a need for more crucial writing in public libraries and literacy.

Newman (2009) defines three key components of digital literacy: digital tool expertise, critical thought, and societal mindfulness. Later, a fourth component known as "transformational abilities" was included by this author, which provides for an understanding of ongoing personal progress and the capacity to influence an altered environment. Johnston (2020) investigated the structure of DLs used in Australian libraries to give students those abilities and recommended DL training in library schools. The creation of a panel of experts, with students serving on it, a uniform approach to DLS, aligning curriculum objectives, and cooperating on DL activities at the university stage are the phases anticipated as being necessary to include digital literacy skills.

Nguyen and Habók's (2022) research on the degree of digital literacy among 1661 English language learners enrolled at Vietnamese universities included an evaluation of the student's perceived technical competence, attitudes about utilizing it, and frequency of using such tools to learn English. According to the research, most students can access digital devices at home and school. The kids' technological aptitude is average and below average, and they receive enough teaching in digital literacy.

Pautz (2013) reviewed the research on managing internet connectivity in public libraries, highlighting the value of expert access management and addressing both practical and moral issues. The review emphasizes the significance of not restricting access to information and draws comparisons between controlling internet access and conventional stock selection. Additionally, it discusses the dangers posed by technological filters and provides techniques for preserving librarian principles while fostering information literacy and user autonomy. The review gives librarians helpful advice, increasing their knowledge of potential tools and reinforcing their function as information access facilitators. Overall, this essay advances public library internet access management knowledge and answers pertinent and timely queries for librarians. Parvathamma & Pattar (2013) performed a study within the student communities in management institutes in the Davanagere District of Karnataka to gain an understanding of the information and communication technologies (ICT) and

internet-based services utilized by students to develop a curriculum for DL courses. According to the study, most respondents own personal computers with internet access. For classwork, students preferred to use laptops. The most popular Web 2.0 tool for individual use among students was email. Although students were familiar with literacy and ICT resources, they were not using them effectively; it was therefore advised to promote autonomous digital users through good professional training. The study states that having an adequate degree of digital literacy allows one to function in the community.

Ranieri, Fini, and Calvani (2009) believe digital literacy is tangible and intangible. They defined DL as the capacity to discover and interpret novel technical circumstances in an adaptable manner. DL is a vast term that encompasses a variety of literacies. The two most significant literacies are Web 2.0 literacy and information literacy, which fall under the general category of DL. The initial phase of information literacy is needed to comprehend the need for information, the ability to find information, the capacity to critically evaluate it, and the efficacy and capacity to use it. Ramzan, M., & Singh, D. (2009) investigated how Pakistani libraries used IT applications. The study discovered that the surveyed libraries had audio players, backup drives, and barcode readers. Most participants, 116 (53%), said they have a fax machine (47), a CD/DVD player, digital cameras (24), digital scanners (23), printers, and photocopiers, which are trendy pieces of hardware. The number of respondents mentioned having access to an intranet and email (n=155) was 200. According to the findings, most respondents (n=42) had internal and web OPAC. The findings showed that a sizable majority of libraries were employing internal library automation systems. The most widely used library automation system in Pakistani libraries was CDS/ISIS. According to the report, public and private libraries established solid IT infrastructure.

Rafiq and Ameen (2013) examined Pakistani universities' perspectives on digitization. The study reveals that digitization is adopted in one-third of libraries. They increased their web access, offered online material, and preserved their material. Social sciences are their primary focus. The study shows that formal policy has yet to be adopted for digitization in these libraries. In this study, it is commonly observed that most of the digitization is done regarding their thesis and dissertation, and other types of books like printed newspapers and journals are not the focus of digitization. The study further suggests that universities will put more effort into digitization in the future. The author told us that other countries have provided digital services, and developing countries need help with digitization. HEC and the National Library of Pakistan must take responsibility for digitization in Pakistan.

Rafi et al. (2021) study reveals that humans started from the Stone Age and, after passing several stages, now shifted to the digital age. Public libraries are open universities and heritage preservation. Public libraries are the open place of knowledge for diverse communities. The study emphasizes that the resources provided in Khyber Pakhtunkhwa public libraries are traditional and that the reading trend in the library is that of an open university. The findings of this study show that the number of people in Khyber Pakhtunkhwa in public libraries is decreasing due to unawareness of digital literacy. The people of the most populated districts rely on single-district libraries and need more resources and traditional ways of learning. The study also emphasizes that public libraries must increase their reading resources and create more libraries in dense populations according to the needs of the public.

Rafiq and Ameen (2013) studied the prevailing digitization procedures in university libraries in Pakistan. The study reveals that universities are progressing very slowly in

digitization, and the progress varies from material to material. The higher rate of digitization is in the field of thesis and dissertation in universities. The study also needs to reveal a formal policy for digitizing university libraries. Universities are in the budding stages of converting libraries into digital forms, far beyond meeting the rest of the world. The study also highlighted the issues libraries face: increased access to material, increased published material, and the damaging problems of rare material. Pakistan is in the earlier stage of digitization but requires planning and learning lessons from the digitization process.

Real, Bertot, and Jaeger (2014) discussed the comparison to their urban and suburban counterparts; rural public libraries need more study focus, which has no apparent effects on differences in access to technology. The authors provided insight into the issue within the context of digital inclusion by combining data from various studies. The disparities go beyond the availability of technological infrastructure, as rural libraries' full potential is hampered by a lack of staff and a dependence on community funding. While acknowledging the obstacles that must be overcome, the authors offer solutions to address these disparities. Rural libraries frequently play an essential role in fostering connections between disconnected communities to free broadband and computers.

Riel (2012) highlighted the DLS of the distinguished types of mass participants. The thesis highlighted that if DL is earlier for the mass participant, what kind of DLS is required to improve the students? The study reveals that the inclusion of digital technologies makes the requirement for DLS vital for everyone. The study shows that those with greater digital literacy enjoy social capital, effect, and outcomes. The study used a 2012 technology use survey based on five hypotheses. It reveals that DL indicates that respondents with excellent digital literacy skills can participate in social, political, and online activities.

According to Soroya and Ameen (2016), reading habits among students have changed significantly over the last five years. The extensive use of digital gadgets and reading materials is responsible for this transformation. These variables have led to a rise in the kids' overall digital reading time. These findings have significant ramifications for spotting patterns in reading behavior and establishing library services that consider student preferences and behaviors. According to Qutab et al.'s (2014) research, several libraries, such as the Government College University Library in Lahore, the National Library of Pakistan, the Punjab Public Library in Lahore, and the International Islamic University in Islamabad, are working to digitize their manuscript collections. Saeed et al. (2000) studied library use and discovered that 50% provide Internet access. Results revealed that many libraries only have dial-up connections.

Moreover, Internet services and the hardware in the assessed libraries could have been sparser. They provided online subscriptions to e-journals, collection development, inter-library loans, and document delivery services. Following the findings, a sizable number of libraries were using online services for the library. Most libraries (103) were utilizing the Internet for reference services. In the libraries surveyed, there was a perceived need for personnel with technical expertise and the capability to search online knowledge reservoirs. Shopova (2014) emphasized the importance of DL for university students. They discussed the changing trend of learning and students' special digital skills. Subaveerapandiyan and Sinha (2022) stated that DL is available everywhere, in urban and rural areas. Students prefer electronic resources instead of print material. They quickly retrieve their required information from online resources. Zabed Ahmed (2013) investigated the online paid resources provided by

the universities to the eight public libraries. The researcher uses the questionnaire to measure the satisfaction level, increasing the level of online resources. Mann-Whitney and Kruskal-Wallis tests and Chi Squair tests are used for data analysis. The findings show that the faculty members are not satisfied with online resources but need help choosing electronic resources, cannot access resources from home, and have slow downloads on their computers. The study also identified the issues regarding online resources. The study suggests the main reasons are poor IT infrastructure and slow interest in utilizing online resources. The faculty members are unwilling to use e-resources daily. The study also highlighted the faculty's need for online resources.

Zan et al. (2021) researched the DLS of faculty and students at the University of Bartu, Turkey. The quantitative method is used for data collection through survey techniques. The first-grade divisions of psychology, history, Turkish language and literature (TLL), and contemporary Turkish dialects and literature (CTDL) of Bartu University contributed 226 responses. The study's findings on the variation of digital literacy skills across departments and the students' adaptive use of these skills according to their educational needs have significant implications for policy and practice. The study also highlights the need for departments to provide more opportunities for students to enhance their DLS. In the context of the COVID-19 era,

Zulkarnain et al. (2020) conducted a research survey to determine pupils' digital mathematics proficiency, further emphasizing the importance of DL in education. According to research from Riau University, computer literacy is essential as it enhances understanding and social media use abilities that students and the general public may utilize to learn more, underscoring the potential impact of this study on educational policies and practices.

RESEARCH METHODOLOGY

To achieve the required outcomes, this research adopted a survey method. Data was collected by visiting the library and meeting with every individual. The questionnaire was distributed in printed form. Both male and female respondents filled out the questionnaire. There were 347 male respondents, 74 female respondents, and 02 transgender respondents. A random data sampling technique was used to collect the data. Around 1500 people visit LML daily; data was collected during several visits to LML and met with every individual for a response. After collection, the data were categorized and entered into the SPSS sheet of version 26. To organize and interpret the study sample, percentages and frequencies were used. The level of users' DLS, understanding of computer skills, application usage skills, DL usage, DL awareness, reading preferences, and suggestions for learning DL were later determined using descriptive statistics.

Results

**Demographic Frequency Distribution of Respondents
University / Organization Type**

**Table 1.
University / Organization Type (N-423)**

Institutes/Organization/Work Station/Job Sector Type	F	%
Public	272	64.3
Private	151	35.7
Total	423	100

Table 1 shows a sample of Public and private Institutes/organizations/workstations/Job Sector respondents. The public sector Institutes/organizations/workstations/Job Sector

consists of 272 (64%), more significant than the Private sector universities/organizations/workstations/Job Sector 151 (36%).

Gender Distribution

Table 2.
Gender (N-423)

Gender	f	%
Male	347	82
Female	74	17.5
Transgender	2	.5
Total	26	100

Table 2 displays the sample of male and female gender respondents; the male respondent, 347 (82%), is greater than the female respondents, 74 (17.5%), and transgender respondents, 02(.5%). This shows that public libraries have very few female visitors.

Age-wise Distribution

Table 3:
Age Level(N-423)

Number of Years	f	%
17-21	146	34.5
22-27	207	48.9
28-35	59	13.9
36-50	08	1.9
Above 50	03	0.7
Total	423	100

Table 3 shows the participant's responses. The average age limit from 22 to 27 (48.9%) is more significant in number and followed by 17 to 21 (34.5%), 28-35 years (13.9%), 36-50 years (1.9%), and above 50 years (0.7%). It shows that most of the respondents of public libraries are young people, and the highest age limit is from 22 to 27(48.9%).

Purpose of Library Visit

Table 4.
Purpose of Liaquat Memorial Library Visit (N-423)

Purpose	f	%
Knowledge Gain	115	27.2
Exam Preparations (CSS, PMS, SPSS, NTS)	200	47.3
Admission/ Exams	36	8.5
Research Purpose	37	8.7
Others	35	8.3
Total	423	100

Table 4 shows the participant's responses to the question about the purpose of visiting the library; people who visit the library for exam preparation are 200 (47%) responded more than those other levels of library visits. The table shows that the second top priority of library visits is to gain knowledge, and a total of 115(27.2%) respondents showed an interest in knowledge gain out of 423 responses.

Qualification of the LML Visitors

Table 5 shows that the participant responses are more significant in the number of Undergraduate students (58.5%) followed by Post Graduate (22.2%) and others (11.8%) research scholars (4.3%) integrated PG (2.8%).

Table 5.
Qualification of the LML visitors (N-423)

Purpose	f	%
Undergraduate	249	58.8
Postgraduate	94	22.2
Integrated PG	12	2.8
Research Scholar (M.Phil., PhD)	18	4.3
Others	50	11.8
Total	100	100

Data Analysis

Source for Knowing about New Technologies by Users

Table 6.
Source for knowing about new technologies of Users

Statement	N	%
Social Network	320	21.7%
Teachers	147	10.0%
Magazines	100	6.8%
TVs	102	6.9%
E-Commerce Apps	82	5.6%
Websites	196	13.3%
Email Lists	59	4.0%
Friend	167	11.3%
Newspaper	190	12.9%
Blogs	79	5.4%
Others	32	2.2%

Figure 1.
Source for Knows About New Technologies

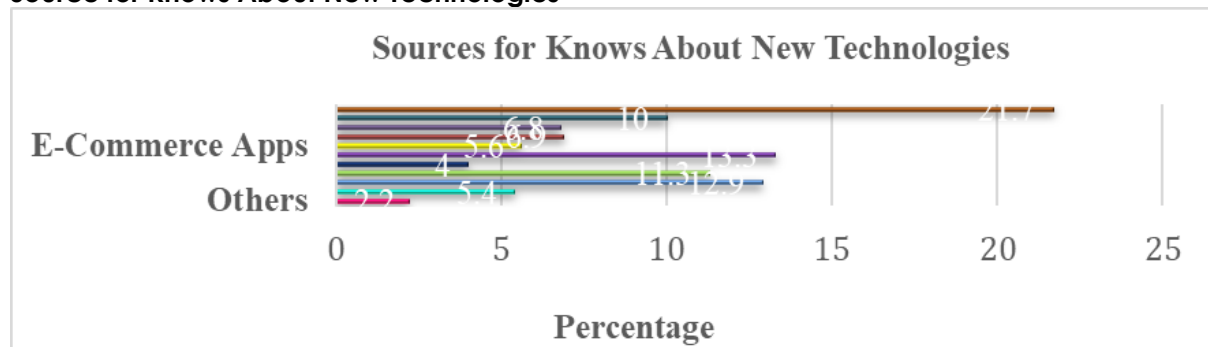


Table 6 and Figure 1 show that users of public libraries know about new technologies from social networks (21.7%), followed by Websites (13.3%) and newspapers (12.9%). The above table and frequency show that social networks play a significant role in getting information about new technologies.

Self-Assessment of Digital Proficiency

Table 7.
Self-Assessment of Digital Proficiency

Statement	Very Good	Good	Acceptable	Poor	Very Poor	Mean	S. D
Typing skills	72(17%)	109(25.8%)	154(36.4%)	66(15.4%)	22(5.2%)	3.34	1.091
Computer literacy	93(21.9%)	128(30.3)	102(24.1)	57(13.5)	43(10.2)	3.40	1.250
Digital literacy	190(21.3%)	132(31.2%)	103(24.3%)	58(13.7%)	40(9.5)	3.41	1.230
Web search skills	82(19.4%)	146(34.5%)	99(23.4)	67(15.8%)	29(6.9%)	3.44	1.168
Internet literacy	117(27.7)	136(32.2)	84(19.5)	53(12.5%)	33(7.8%)	3.59	1.232

Scale Used: Very Good=5, Good=4, Acceptable=3, Poor=2, Very Poor=1, SD= Standard Deviation

Figure 2.
Self-Assessment of Digital Proficiency

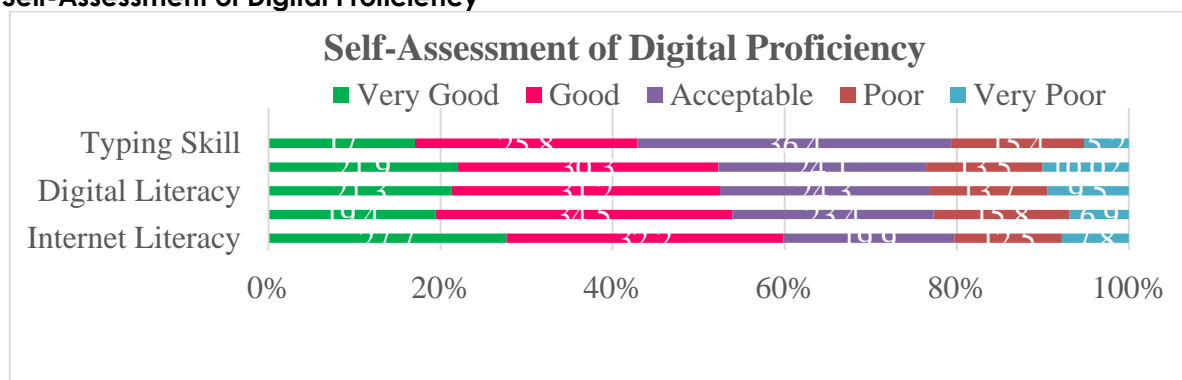


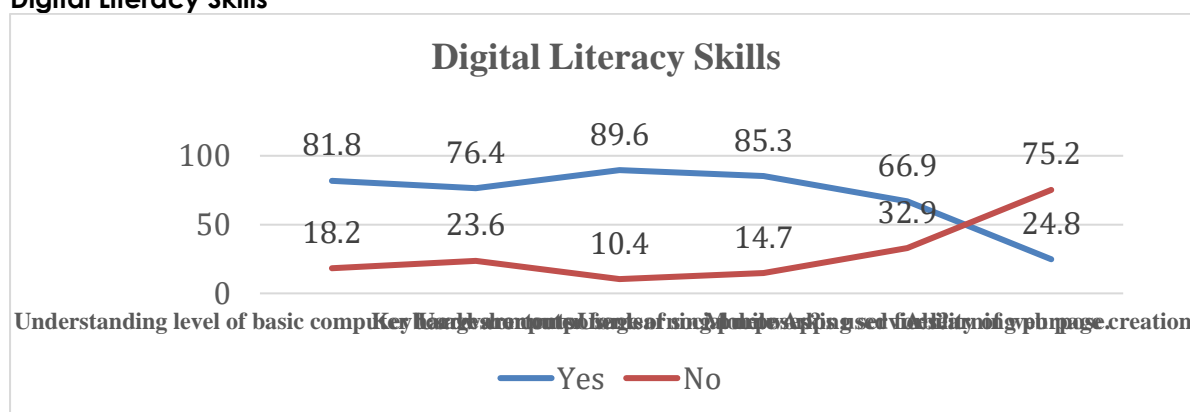
Table 7 and Figure 2 describe the self-rating of DLS. Typing skills of the majority of the respondents are acceptable(36.4%) and sound (25.8%); computer literacy is good (30.3%)and perfect (21.9%); DL is the capability to use digital devices, and it is good(31.2%) and acceptable (24.3%), web search skills in the public library users are good(34.5%) and Acceptable(23.4%), people in the library are good(32.2%) literate of internet literacy was perfect (27.7%).

Digital Literacy Skills

Table 8.
Digital Literacy Skills

Statement	Yes	No
Understanding the level of basic computer hardware components.	346(81.8%)	77(18.2%)
Keyboard shortcuts.	323(76.4%)	100(23.6%)
Usage computer for learning purposes?	379 (89.6%)	44(10.4%)
Usage of social networking services?	361(85.35)	62(14.7%)
Mobile Apps used for learning purposes.	283(66.9%)	139(32.9%)
The ability of web page creation.	105(24.8%)	318(75.2%)

Figure 3.
Digital Literacy Skills



In Table 8 and Figure 3, most people responded that they knew the essential functions of computer hardware components (81.8%). Very few respondents replied No (18.2%). Knowledge about using keyboard shortcuts Yes (76.4%) and No (23.6%), people sitting in the hall responded Yes (89.6%) of the computer learning process. They said No (10.4%), Liaquat Memorial library users answered about social networking services with Yes (85.35%) and No (14.7%), mobile apps are used in higher numbers Yes (66.9%), and lower respond to No (32.9%), most of the users in the library did not be able to create

web pages and respond No(75.2%)with Yes(24.8%). Table 9 shows a high level of understanding of the DLS of the Liaquat Memorial Public Library.

Digital Usage Frequency

Table 9.
Digital Usage Frequency

Statement	Very Frequently	Frequently	Occasionally	Rarely	Never	Mean	S. D
Word Processor	75(17.7%)	98(23.2%)	110(26.0%)	68(16.1%)	72(17.0%)	3.09	1.33
Email	140(33.1%)	129(30.5%)	94(22.2%)	27(6.4%)	33(7.8%)	3.75	1.20
World Wide Web	129(30.5%)	131(31.0%)	79(18.7%)	39(9.2%)	45(10.6%)	3.67	1.29
Database	58(13.7%)	86(20.3%)	101(23.9%)	107(25.3%)	71(16.8%)	2.89	1.29
Spreadsheet	58(13.7%)	86(20.3%)	101(23.9%)	107(25.3%)	71(16.8%)	2.89	1.29
Language App	98(23.2%)	95(22.5%)	94(22.2%)	60(14.2%)	76(18.0%)	3.19	1.40
Blog	55(13.0%)	71(16.8%)	116(27.4%)	81(19.1%)	100(23.6%)	2.76	1.33
Text Chatting	189(44.7%)	121(28.6%)	39(9.2%)	34(8.0%)	40(9.5%)	3.91	1.30
Voice Chatting	171(40.4%)	125(39.6%)	62(14.7%)	25(5.9%)	40(9.5%)	3.86	1.27
Video	150(35.5%)	115(27.2%)	69(16.3%)	51(12.1%)	38(9.0%)	3.68	1.30
Conferencing	68(16.1%)	85(20.1%)	124(29.3%)	85(20.1%)	61(14.4%)	3.03	1.27
Electronic	78(18.4%)	101(23.9%)	104(24.6%)	76(18%)	64(15.1%)	3.13	1.32
Dictionary	172(40.7%)	106(25.1%)	68(16.1%)	32(7.6%)	45(10.6%)	3.78	1.33

Scale Used: Very frequently=5, frequently=4, occasionally=3, rarely=2, Never=1, SD= Standard Deviation

Figure 4.
Digital Usage Frequency

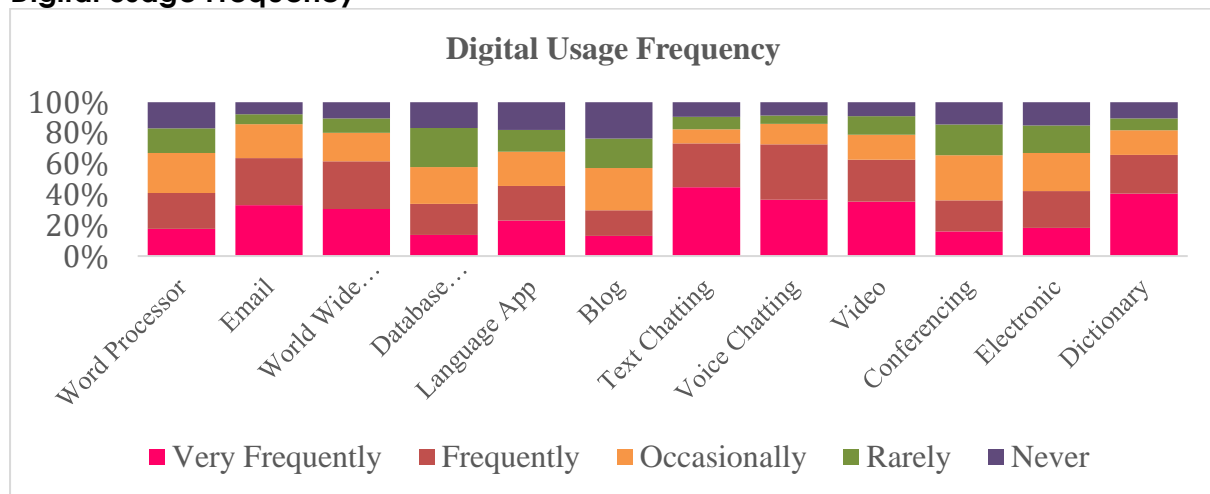


Table 9 and Figure 4 show the frequency of different digital environment usage. The respondents answered highly on word processors Occasionally (26%), Email responds higher Very frequently(33.1%), people react more regularly (31%) on the World Wide Web, users respond on usage of Spreadsheets and databases higher in usage occasionally (23.9%), users use language app very frequently(23.2%), users in the library use blogs occasionally (27.4%), people use text chatting in very often (47.7%), people uses voice chatting very frequently(40.45%), people used videos for learning very frequently (35.5%), people used conferencing Occasionally (29.3%), people uses electronic services for occasionally reading (24.6%), people use a dictionary for their learning process (40.7%).

Self-Assessment of Digital Application Skills

Table 10.
Self-Assessment of Digital Application Skills

Statement	Very Good	Good	Acceptable	Poor	Do Not	Mean	S. D
Word Processing	80(18.9%)	122(28.8%)	113(26.7%)	55(13.0%)	53(12.5%)	3.29	1.27
MS Word	126(29.8%)	135(31.9%)	90(21.3%)	46(10.9%)	26(6.1%)	3.68	1.18
MS Excel	101(23.9%)	100(23.6%)	119(28.1%)	64(15.1%)	39(9.2%)	3.38	1.25
MS Access	60(14.2%)	89(21.0%)	123(29.1%)	103(24.3%)	48(11.3%)	3.02	1.21
MS PowerPoint	93(22.0%)	117(27.7%)	126(29.8%)	66(15.6%)	21(5.0%)	3.46	1.14
Skype	103(24.3%)	119(28.1%)	105(24.8%)	63(14.9%)	33(7.8%)	3.46	1.22
Facebook	195(46.1%)	112(26.5%)	53(12.5%)	30(7.1%)	33(7.8%)	3.96	1.25
Search Engines	206(48.7%)	106(25.1%)	60(14.2%)	24(5.7%)	27(6.4%)	4.04	1.19

Scale Used: Very Good=5, Good=4, Acceptable=3, Poor=2, Don't Know=1, SD= Standard Deviation

Figure 5.
Self-Assessment of Digital Application Skills

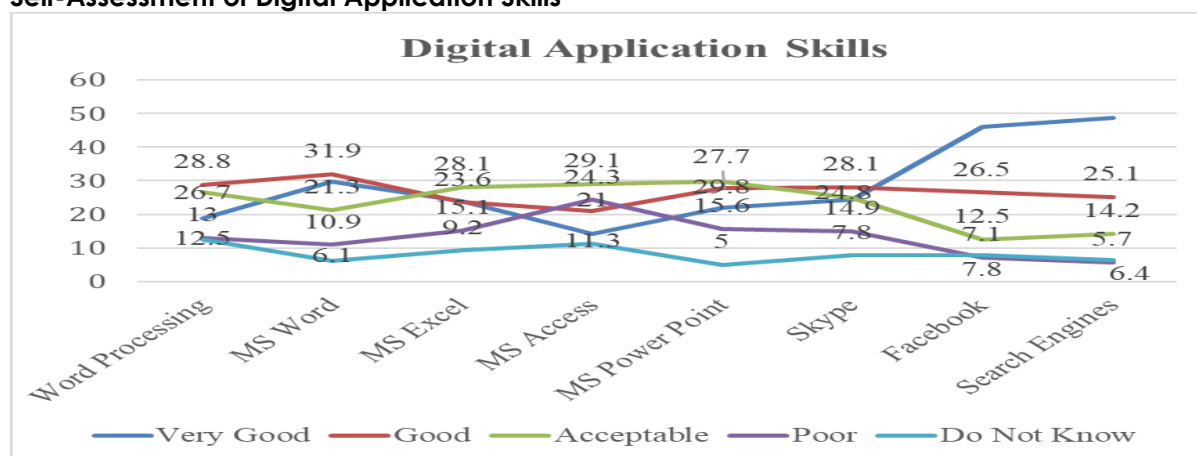


Table 10 and Figure 5 show the usage ability of different applications. The table and figure show that respondents are acceptable 26.7% in the usage of word processing, 21.9% are good in the usage of MS Word application, 23.9% are perfect in MS Excel application usage, 29.1% are acceptable in MS access, 29.8% are acceptable in PowerPoint presentation ability, 28.1% are good in the usage of Skype, 46.1% are perfect in Facebook application usage, Users use the different search engine, and their majority is excellent 48.7% in search engines.

Electronic Devices Utilization

Table 11.
Electronic Devices Utilization

Digital Devices Usage	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree	Mean	S. D
Digital devices appreciation I feel comfortable while using	165(39.0%)	196(46.3%)	33(7.8%)	12(4.0%)	17(2.8%)	4.15	0.93
Digital Devices Awareness	146(34.5%)	178(42.1%)	58(13.7%)	23(5.4%)	18(4.3%)	3.97	1.04
Digital Device Awareness	135(31.9%)	173(40.9%)	70(16.5%)	28(6.6%)	17(4.05)	3.90	1.05

Understanding the level of Digital literacy	124(29.3%)	183(43.3%)	74(17.5%)	26(6.1%)	16(3.8%)	3.88	1.02
The Willingness of Digital Technologies	210(49.6%)	134(31.7%)	32(7.6%)	26(6.1%)	21(5.0%)	4.15	1.11
Ability to improve my Digital Fluency	210(49.6%)	131(31.0%)	42(9.9%)	21(5.0%)	18(4.3%)	4.19	1.16
Enhancement of Learning Through Digital Tools and Resources	199(47.0%)	149(35.2%)	42(9.9%)	16(3.8%)	17(4.0%)	4.17	1.02
Learning Through Technology Can Enhance Learning Abilities	198(46.8%)	141(33.3%)	42(9.9%)	24(5.7%)	18(4.3%)	4.13	1.07

Scale used: Strongly Agree=5, Agree=4, Uncertain=3, Disagree=2, strongly Disagree=1, SD=Standard Deviation

Table 11 displays how people use and enjoy their digital devices. The majority of respondents (46.3%) established that they feel easy while utilizing digital devices, 42.1% agreed that they were aware of using digital devices, 40.9% agreed that they were understanding of different digital devices, 43.3% agreed that they were willing about digital literacy and skills learning, 49.6% strongly agreed that they were interested in finding out more about digital technologies, and 49.6% strongly agreed that digital fluency was crucial for improving oneself. People strongly agree that 47% think digital literacy will enhance their knowledge and resources, and 46.8% strongly agree that digital literacy enhances language learning.

Familiarity with Digital Innovations

Table 12.
Familiarity with Digital Innovations

Statement	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree	Mean	S. D
Digital Devices Utilization	179(42.3%)	162(38.3)	47(11.1%)	23(5.4%)	12(2.8%)	4.12	0.99
Digital Tool Usage for understanding information	146(34.5%)	185(43.7%)	47(11.1%)	33(7.8%)	12(2.8%)	3.99	1.01
How digital tools connect with others	161(38.3%)	160(37.8%)	56(13.2%)	31(7.3%)	14(3.3%)	4.00	1.05
use of digital tools to work with others	145(34.3%)	160(37.8%)	70(16.6%)	27(6.4)	21(5.0%)	3.90	1.09
use of digital tools to create my work	140(33.1%)	155(36.6%)	79(18.7%)	32(7.6%)	17(4.0)	3.87	1.08
Digital Tools to Share Work Responsibilities	163(38.5%)	148(35.0%)	58(13.7%)	31(7.3%)	23(5.4)	3.94	1.14
Digital Citizen	144(34.0%)	169(40.0%)	53(12.5%)	36(8.5%)	21(5.0%)	3.90	1.11
Digital Tools Used for	188(44.4%)	159(37.6%)	36(8.5%)	21(5.0%)	19(4.5%)	4.13	1.05

Scale used: SA=5, A=4, Neutral=3, D=2, strongly Disagree=1, SD=Standard Deviation

Table 12 displays the frequency of knowledge about digital tools and the result revealed that about 42.3% strongly agreed to know how to find information by using a different digital tool, 43.7% of users understanding level of finding digital tools, 38.3% people are strongly agreed to know about how to connect with other peoples by using digital tools, 37.8% people are decided to work with other by using digital tools, 36.6% people are decided to create their work by using digital tools, 38.5% peoples knows about the digital tools to share their work with others, 405 people are agreed that they know about the responsibilities of digital citizens and 44.7% people are firmly decided to use digital technologies for their learning purposes.

Reading Enjoyment and Preference

Figure 6. Reading Enjoyment and Preference

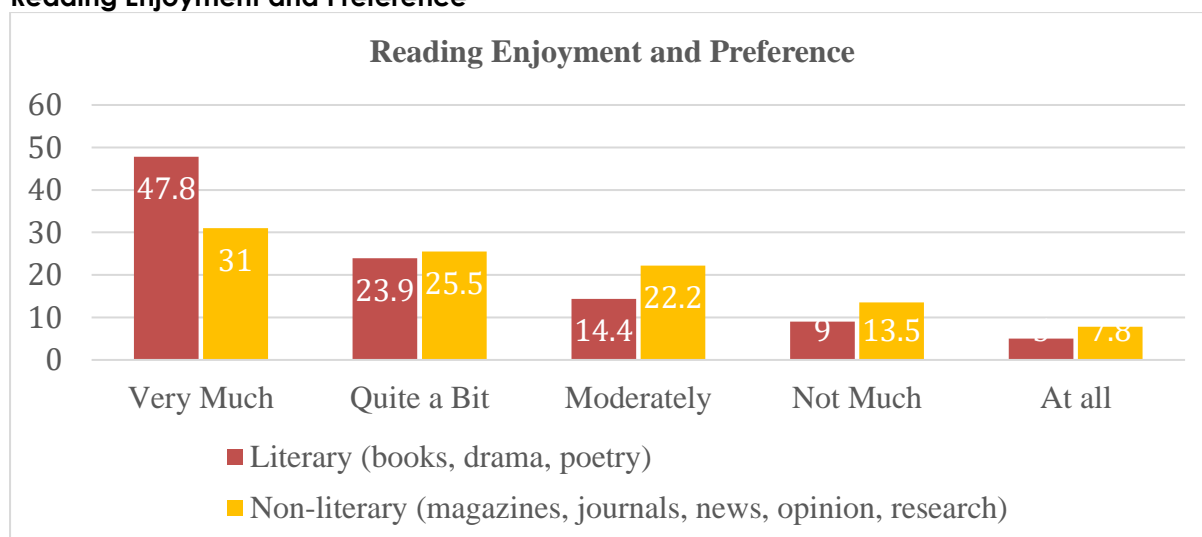


Figure 6 indicates the reading preferences and choices that make it a pleasure to visit the library. It shows that most people in the library vastly prefer literacy (books, drama, poetry). 47.8% of them read, and 31% of users respond intensely to Nonfiction (magazines, journals, news, opinion, research).

Reasons for Enjoying Reading

Table 13. Reasons for Enjoying Reading

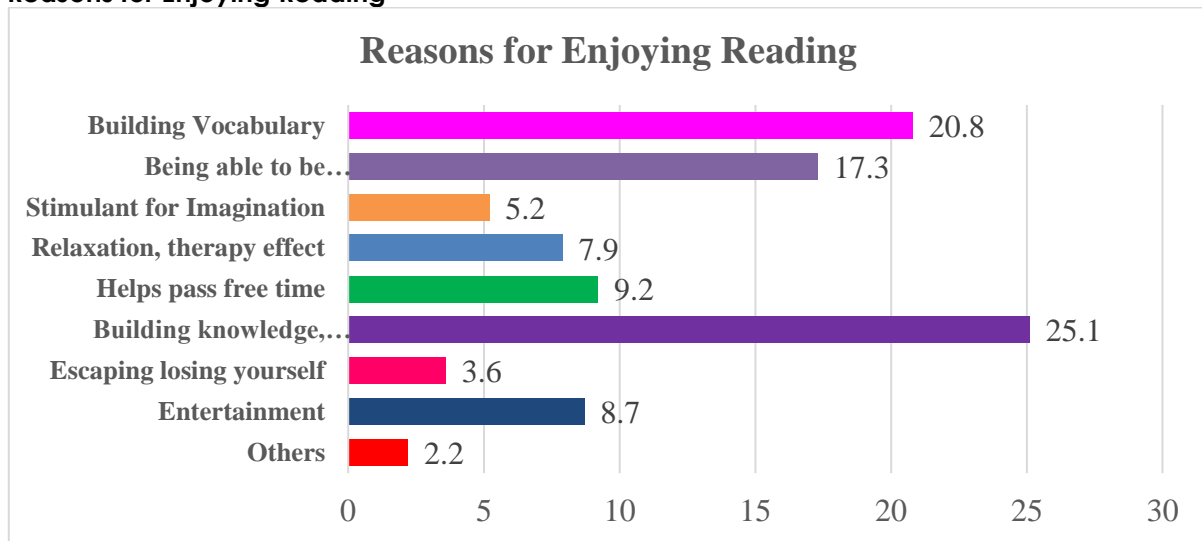
Statement	N	%
Building Vocabulary	243	20.8%
Being able to be in the know of a specific topic	202	17.3%
Stimulant for Imagination	61	5.2%
Relaxation, therapy effect	92	7.9%
Helps pass free time	107	9.2%
Building knowledge, discovering new information	294	25.1%
Escaping losing yourself	42	3.6%
Entertainment	102	8.7%
Others	26	2.2%

Table 13 and Figure 7 show that most library users come to the library to build vocabulary (20.8%) and be able to know about specific topics. In the above-given

table of the educational level of the library, users are also majoring in undergraduate, and they prefer the most vocabulary building to improve their education

Figure 7.

Reasons for Enjoying Reading



Recommended Reading

Table 14.

Recommended Reading

Statement	N	%
A library/ librarian, including library websites	168	14.1%
Social media channels	231	19.3%
Bookstore & Bookstore staff (Online & offline)	126	10.5%
Family members, friends, co-workers	160	13.4%
Literary Influencers	90	7.5%
Literary Circles/book clubs	70	5.9%
News and reviews	170	14.2%
Cultural magazines, curations	74	6.2%
Bestseller list	72	6.0%
Others	34	2.8%

Figure 8.

Recommended Reading

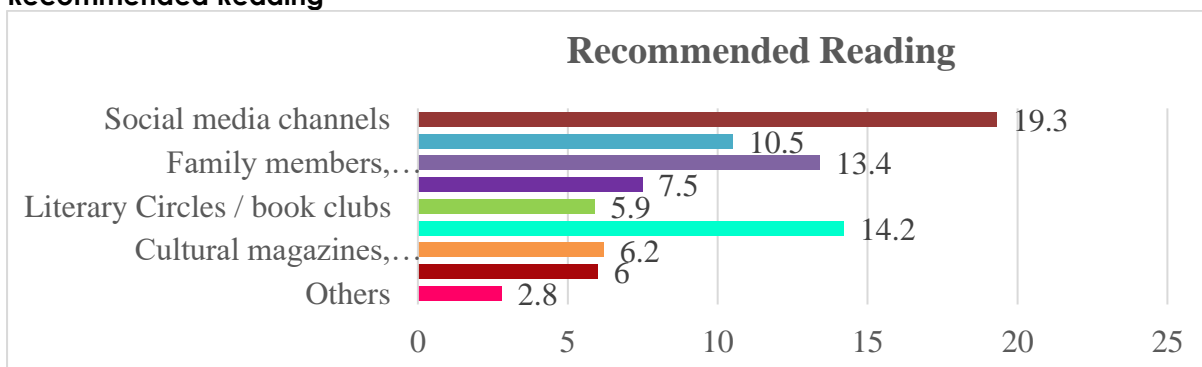


Table 14 and Figure 8 show that 19.3% of users get reading recommendations from social media channels, 10.5% from a book store, and book store staff play a significant role in reading recommendations. 13.5% get information from family members, 7.5% from literary influencers, 5.9% from literacy circles, 14.2% from news and reviews, 6.2% from magazines, 6% from bestsellers, and 2.8%.

Format types and priority resources for reading

Table 15.
Format types and priority resources for reading

Statement	Print	Electronic
Reading in bed	273(56%)	186(44%)
Reading pleasure /recreational value	281 (66.4%)	142(33.6)
Travel/commute reading	210(49.6%)	213(50.4)
Sharing with people	143(33.8%)	280(66.2%)
Accessing and maintaining a wide collection	213(50.4%)	210(49.6)
Reading with children	355(83.9%)	68(16.1%)
Quick access to new material	143(33.8%)	280(66.2%)

Figure 9.
Format types and priority resources for reading

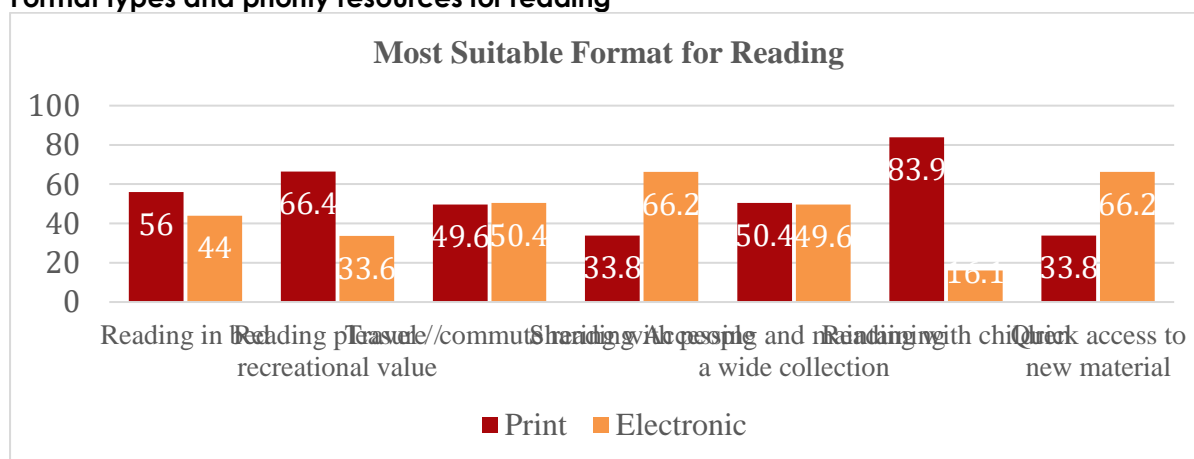


Table 15 and Figure 9 indicate the user's preferences for print or electronic format of readings. Respondents suggest that they feel comfortable reading in bed in the printed format 56%, reading pleasure/recreational value in the printed format 66.4%, travel and commute reading in the electronic format 50.4, sharing with people in the electronic format 56.2%, accessing and maintaining a comprehensive collection is in the printed format 50.4%, reading with children prefer printed format 83.9%, and quick access to new material is electronic format 66.2%.

Most Suitable Format for Reading

Figure 10.
Most Preferable Format

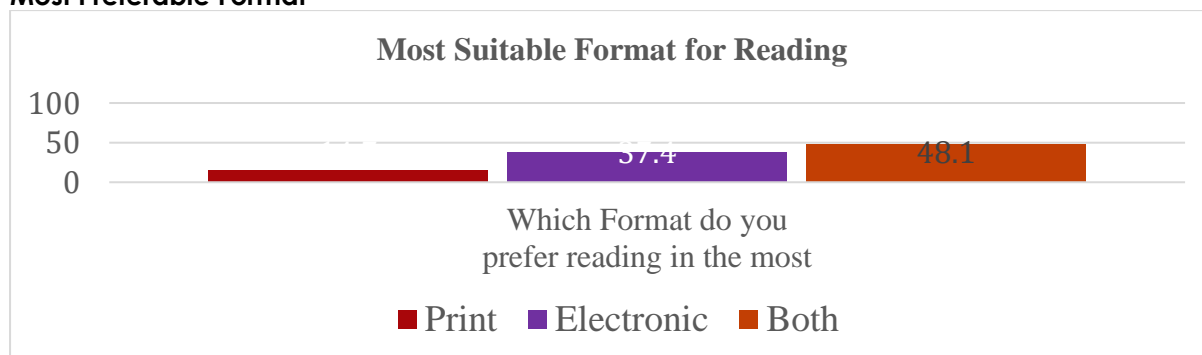


Figure 10 highlights the value of the reading format in Liaquat Memorial users. In Figure 10, most people prefer both reading formats: 48.1%, followed by the electronic format, 37.4%, and the printed format, 14.7%, respectively.

Ways of Information Literacy and Digital Media

Figure 11.

One path to a paperless society is digital media and information literacy.

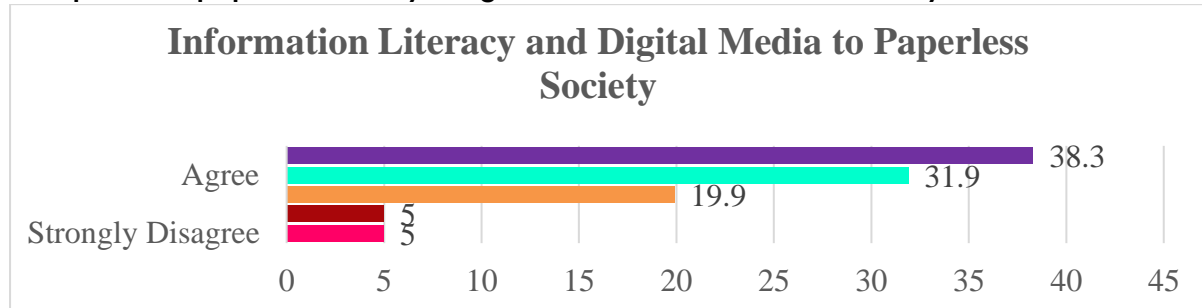


Figure 11 indicates the users' opinion that digital media is necessary for paperless societies. Most users strongly agreed, 38.3% agreed, 31.9% were neutral, 19.9% and only 5% disagreed or strongly disagreed whether digital media leads to a paperless society.

CONCLUSION

Digital literacy is a way to learn, acquire knowledge, enhance skills, use multiple resources, and get quick access to anonymous data just at your fingertips. Public libraries are the hub of community development. However, in the past and now, there is still progress in public libraries; there is no focus on every community stakeholder because the illiterate did not use libraries, and educated people focus on organizational libraries. In this field, research is required in every aspect of public libraries. The Internet has changed the way of life of ordinary people. They read newspapers from their smartphones, and most of the community has no time to read books during this busiest period of the circle. Most students visit public libraries during exams and are free from their educational institutes during exam days. They utilize the library building to learn from their laptops, tablets, and smartphones during exam days due to load shedding and the silent environment in public libraries.

Public library skills are a necessity of the present era because thousands of students are visiting the library, and the public libraries are still running in the old traditional pattern. Public library users are skilled and well-known about library usage and digital devices because they are well-educated. In universities, libraries are digitized in most institutes. Public libraries must improve digital technology and shift their libraries to match other institutional libraries. They must collaborate with the nearest institutional libraries. Public library staff are still working on the traditional pattern, and comprehensive training and software programs will be required. Based on current research, here are some points regarding digital literacy in public libraries.

- More funding is needed to create a digital environment in public libraries.
- Public library users are more attracted to digital libraries, but people bring their laptops, tablets, and smartphones due to the need for more resources.
- Public libraries are still operated traditionally, and there is yet to be a plan to digitize them for future generations.
- Public library users are known for their basic skills but require government attention in digitization.
- There is an urgent need to digitize public libraries for the future generation; if it still needs to be done, as we lose layperson visits to public libraries, we will lose students who visit public libraries in the future.

- Community activities are much needed in public libraries to attract students other than their exam days.
- There is an urgent need for professionals to enhance the computer labs to enhance the e-library environment.
- LML did not provide a facility to read rare books in digitized form. However, it has required its repositories to digitize and enrich users' access to rare material in digitized form.

DECLARATIONS

Acknowledgement: We appreciate the generous support from all the supervisors and their different affiliations.

Funding: No funding body in the public, private, or nonprofit sectors provided a particular grant for this research.

Availability of data and material: In the approach, the data sources for the variables are stated.

Authors' contributions: Each author participated equally to the creation of this work.

Conflicts of Interests: The authors declare no conflict of interest.

Consent to Participate: Yes

Consent for publication and Ethical approval: Because this study does not include human or animal data, ethical approval is not required for publication. All authors have given their consent.

REFERENCES

- Abbas, Q., Hussain, S., & Rasool, S. (2019). Digital literacy affects students' academic performance at higher education levels in Pakistan. *Global Social Sciences Review*, 4(1), 154–165.
- Aabø, S. (2005). The role and value of public libraries in the age of digital technologies. *Journal of Librarianship and Information Science*, 37(4), 205–211.
- Ahmed, S., & Rehman, A. U. (2016). Perceptions and level of ICT competencies: a survey of librarians at public sector universities in Khyber Pakhtunkhwa, Pakistan. *Pakistan Journal of Information Management and Libraries*, 18(1), 1-11.
- Asad, M. M., Gul, J., & Lashari, M. A. (2020, August). Digital skills and literacy among prospective teachers of Sukkur Pakistan: A conceptual framework. In *Proceeding of International Conference on Teaching and Science Education* (Vol. 1, No. 1, pp. 27–36).
- American Library Association (ALA et al., 2011). <https://alair.ala.org/handle/11213/1620>
- Baro, E. E., Obaro, O. G., & Aduba, E. D. (2019). An assessment of digital literacy skills and knowledge-based competencies among librarians working in university libraries in Africa. *Digital Library Perspectives*, 35(3/4), 172-192.
- Brar, I.S. (2015). Digital Information Literacy among Health Sciences Professionals: A Case Study of GGS Medical College, Faridkot, Punjab, India.
- Brown, B. C. (2009). *An examination of the relationship between digital literacy and student achievement in Texas elementary schools* (Doctoral dissertation, The University of Oklahoma, United States). Retrieved from <https://pqdtopen.proquest.com/doc/304978655.html?FMT=AI>
- Burdi, S. M. (2023). A Literature Survey on Information Literacy and Public Libraries in Pakistan.
- Chinien, C., & Boutin, F. (2011). *Defining essential digital skills in the Canadian workplace* (p. 87). Human Resources and Skills Development Canada.
- Christy, E. B., & Yusuf, D. T (2021). An Investigation of the Level of Digital Literacy Skills Possessed by Academic Librarians in Nigerian Universities.
- Deng, H. (2010). Emerging patterns and trends in utilizing electronic resources in a higher education environment: An empirical analysis. *New Library World*, 111(3/4), 87–103.
- Echo360. (2012). *Blended Learning Technology: Connecting with the Online-All-the-Time Student*. Echo360. Retrieved from: http://echo360.com/sites/all/themes/echo360/files/Connecting_to_the_Online_All_the_Time_Student.pdf

- Emiri, O. T. (2017). Digital literacy skills among librarians in university libraries in the 21st century in Edo and Delta states, Nigeria. *International Journal of Library and Information Services (IJLIS)*, 6(1), 37–52.
- Eshet, Y. (2004). Digital literacy: A conceptual framework for survival skills in the digital era. *Journal of educational multimedia and hypermedia*, 13(1), 93–106.
- Eurostat (2015). Being Young in Europe Today - digital world, retrieved from http://ec.europa.eu/eurostat/statistics-explained/index.php/Being_young_in_Europe_today_digital_world.
- Fraser, J. (2009). 'The Digital Literacy Debate' <http://digilit.wetpaint.com>, accessed 11 July 2018.
- Gillen, J., & Barton, D. (2009). Digital literacies: a discussion document for the TLRP-TEL (Teaching and Learning Research Programme-Technology Enhanced Learning) workshop on digital literacies.
- Ginger, J. (2015). *Capturing the context of digital literacy: A case study of Illinois public libraries in underserved communities*. University of Illinois at Urbana-Champaign.
- Gilster, P. (1997). *Digital literacy*. New York, NY: John Wiley & Sons.
- Jeffrey, L., Hegarty, B., Kelly, O., Penman, M., Coburn, D., & McDonald, J. (2011). Developing digital information literacy in higher education: Obstacles and supports. *Journal of Information Technology Education: Research*, 10(1), 383-413.
- Johnston, N. (2020). The shift towards digital literacy in Australian university libraries: Developing a digital literacy framework. *Journal of the Australian Library and Information Association*, 69(1), 93–101.
- Kinney, B. (2010). The internet, public libraries, and the digital divide. *Public Library Quarterly*, 29(2), 104–161.
- Khatun, M., Virkus, S., & Rahman, A. J. (2015). Digital information literacy: a case study in Oslo public library. In *Information Literacy: Moving Toward Sustainability: Third European Conference, ECIL 2015, Tallinn, Estonia, October 19-22, 2015, Revised Selected Papers 3* (pp. 121-131). Springer International Publishing.
- McShane, I. (2011). Public libraries, digital literacy, and participatory culture. *Discourse: Studies in the Cultural Politics of Education*, 32(3), 383–397.
- Martin, A. (2008). 'Digital Literacy and the 'Digital Society'' in C. Lankshear, M. Knobel, (2008c) *Digital Literacies: Concepts, Policies and Practices* New York: Peter Lang
- Negi, A. S., & Srivastava, J. P. (2014). The changing role of the academic library professionals in the digital era: trends, vision, and challenges. *Indian Streams Research Journal*, 4(1), 1-5.
- Newman, T. (2009). 'Consequences of a digital literacy review: from terminology to action' <http://www.slideshare.net/TabethaNewman/digital-literacy-literaturereview-fromterminology-to-action>, accessed on 18 May 2018.
- Nguyen, L. A. T., & Habók, A. (2022). Digital literacy of EFL students: An empirical study in Vietnamese universities. *Libri*, 72(1), 53-66.
- Pautz, H. (2013). Managing access to the internet in public libraries. *New Library World*, 114(7/8), 308–318.
- Parvathamma, N., & Pattar, D. (2013). Digital literacy among the student community in management institutes in Davanagere District, Karnataka State, India. *Annals of Library and Information Studies (ALIS)*, 60(3), 159-166.
- Qutab, S., Bhatti, R., & Ullah, F. S. (2014). Adoption of ICTs for library operations and services: A comparison of Pakistan's public and private university libraries. *Library Philosophy and Practice*, 0_1.
- Rafiq, M., & Ameen, K. (2013). Digitization in university libraries of Pakistan. *OCLC Systems & Services: International digital library perspectives*, 29(1), 37-46.
- Rafi, M., Ahmad, K., & Jian Ming, Z. (2021). Increasing or decreasing reading trend: An overview of the current status of the public libraries in Khyber Pakhtunkhwa, Pakistan. *Library Management*, 42(3), 214-232.
- Ramzan, M., & Singh, D. (2009). Status of information technology applications in Pakistani libraries. *The Electronic Library*, 27(4), 573-587.

- Ranieri, M., Fini, A., & Calvani, A. (2009). Assessing Digital Competence in Secondary Education - Issues, Models, and Instruments. (M. Leaning, Ed.) *Issues in Information and Media Literacy: Education, Practice and Pedagogy*, Santa Rosa California: Informing Science Press.
- Real, B., Bertot, J. C., & Jaeger, P. T. (2014). Rural public libraries and digital inclusion: Issues and challenges. *Information Technology and Libraries*, 33(1), 6-24.
- Riel, J. (2012). *The digitally literate citizen: How digital literacy empowers mass participation in the United States*. Georgetown University.
- Saeed, H., Asghar, M., Anwar, M., & Ramzan, M. (2000). Internet use in university libraries of Pakistan. *Online information review*, 24(2), 154-160.
- Soroya, S. H., & Ameen, K. (2016). Reading trends of youth in Pakistan: A pilot study. *Pakistan Journal of Information Management & Libraries*, (17), 86.
- Shopova, T. (2014). Digital literacy of students and its improvement at the university. *Journal on Efficiency and Responsibility in Education and Science*, 7(2), 26-32.
- Subaveerapandiyar, A., & Sinha, P. (2022). Digital literacy and reading habits of the DMI-St. Eugene University students. *Journal of Indian Library Association*, 58(3), 195-208.
- Thomas, N.P. (2004). *Information Literacy and Information Skills Instruction: Applying Research to Practice in the School Library Media Center*. 2nd.ed. London: Libraries Unlimited.
- Trepanier, D. (2012). Define digital skills. Retrieved:
<http://www.ymcaimpact.ca/content/define-digitalskills#sthash.UjCOWpvO.dpuf>.
- Zan, B., Çolaklar, H., Altay, A., & Taşkın, N. (2021). A study on digital literacy skills of faculty of letters students: Use of university library. *International Journal of Emerging Technologies in Learning (IJET)*, 16(1), 152-171.
- Zulkarnain, Z., Heleni, S., & Thahir, M. (2020, October). Digital literacy skills of math students through e-learning in COVID-19 era: a case study in University as Riau. In *Journal of Physics: Conference Series* (Vol. 1663, No. 1, p. 012015). IOP Publishing.
- Zabed Ahmed, S. M. (2013). Use of electronic resources by the faculty members in diverse public universities in Bangladesh. *The electronic library*, 31(3), 290-312.

