

Self-Efficacy Of Librarian's Information Literacy Skills

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Abstract

Purpose – The current research work aims to measure the Information Literacy Skills (ILSs) of librarians working in the universities in Pakistan.

Methodology – The convenience sampling method through a questionnaire was applied and administered offline as well as online to collect data from the respondents. The response rate was 94%. Descriptive statistics was applied.

Findings – Mostly, the findings of mean scores are between 3 to 4 which illustrates that the LISPs are 'competent' regarding their ILSs. Moreover, most of them are trained in ILSs. However, all are 'strongly agree' that ILS's training is obligatory for doing modern librarianship.

Originality/value – The research has disclosed the competency level of LISPs regarding their ILSs.

Keywords – Information literacy (IL), Information Literacy Skills (ILSs), and Library and Information Science Professionals (LISPs), Pakistan.

1 Introduction

Information literacy (IL) is a multifaceted concept that encompasses the ability to various dimensions related to the knowledge, motivation, and competencies required to access, understand, evaluate, and apply information effectively in different contexts (Norman and Skinner, 2006, Sorensen et al., 2012). In the academic realm, IL is often viewed as a foundational skill that enables individuals to locate, evaluate, and utilize information effectively (Hicks et al., 2023). It involves not only the skills of finding and retrieving information but also critical thinking, digital literacy, and ethical considerations in information use. Moreover, this broader perspective emphasizes the importance of being able to seek, comprehend, and assess information from electronic sources and utilize this knowledge to address issues or make informed decisions (Norman and Skinner, 2006).

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IL extends beyond basic skills to include competencies in assessing information critically and determining its relevance to specific situations. Additionally, it involves the capacity to recognize when information is needed, locate relevant information, evaluate its credibility, and utilize it appropriately (Stordy, 2015). IL is a multi-layered concept that encompasses In recent years, there has been a shift towards reframing IL as metaliteracy, which emphasizes the production and sharing of information in participatory digital environments (Mackey and Jacobson, 2011). This reframing acknowledges the changing landscape of information dissemination and consumption, particularly with the rise of social media and collaborative online platforms (Norman and Skinner, 2006).

Information literacy skills (ILSs) are crucial competencies in today's information-rich environment. These skills encompass a variety of abilities, including the capacity to locate, retrieve, evaluate, manage, and effectively use information (Ward and Hockey, 2007). It is a multidimensional concept that integrates various literacies such as library literacy, computer literacy, media literacy, technological literacy, critical thinking, ethics, and communication (Ekong and Ekong, 2018). Moreover, it involves the ability to read, use computers, search for information, understand information, contextualize it, etc. (Norman and Skinner, 2006). Furthermore, ILSs extend beyond academic settings to impact personal life, the workplace, and everyday activities due to the influence of the internet and ICTs (Katz et al., 2018). These skills are essential for individuals to navigate the vast amount of information available, enabling them to access and use information resources effectively.

Acquiring ILSs is crucial not only for academic success but also for lifelong learning, as it equips individuals with the ability to navigate the ever-evolving technological and informational landscape (Bawden and Nisen, 2001). These skills encompass a variety of competencies, including library literacy, computer literacy, media literacy, critical thinking, and communication, which collectively empower users to become independent seekers and users of information (Ekong and Ekong, 2018). Collaborations between academic librarians, faculty members, and other stakeholders are essential for effectively embedding ILSs into scholars (Burke, 2012, Ward and Hockey, 2007). Moreover, the significance of IL extends beyond academic settings. It is recognized as critical by accrediting boards, underscoring the need for librarians to establish institutional structures for delivering IL to their users (Bombaro, 2014). It is concluded that knowledge of ILSs is essential for university librarians to effectively navigate the vast landscape of information resources and provide valuable support to the users. If they do not possess these skills how they can support their users in this regard?

In short, ILSs are indispensable in today's digital age, enabling individuals and especially librarians to effectively navigate, evaluate, and utilize the vast amount of available information available to help their users. These skills are dynamic, evolving with technological advancements and changes in societal contexts, and are essential for the academic success, critical thinking, and lifelong learning of university librarians. Few studies are available which examined the ILSs of university librarians working in various cities. Therefore, this study is established to gauge the ILSs of university librarians to fill the literature gap.

2 Literature Review

2.1 Information Literacy

IL is the capability of a person to recognize; trace; critically use and assess information; make decisions; create knowledge; and solve problems (Bruce, 2003). Sample (2020) explored a detailed historical development of various definitions of IL i.e. from 2000 to 2015 in chronological order. For this purpose, these definitions were divided into three categories: (1)

set of skills, (2) way of thinking, and (3) social practice. However, the study dominantly covered the IL literature in the USA background instead of the entire world.

Zurkowski (1974) served as the President of the Information Industry Association and is credited with introducing the term IL in 1974. He characterized information literate individuals as those proficient in utilizing information resources effectively in their professional endeavors. Bruce (1997) acknowledged that IL can be practiced in numerous ways and diverse individuals can practice it in different ways. IL is not a straightforward procedure, thus an individual can develop frequent facets of IL on the basis of their experience and talent (Eisenberg, 2011, SCONUL, 2011). AASL (2007) described the same concept in a different way as IL has various means for various societies, institutions, and persons. He also elaborated that the definition of IL is becoming complex, Firstly it consisted of merely searching reference sources, but now digital literacy, visual literacy, textual literacy, and technology literacy are also part of it.

Bruce (1997) favored that scholars should acquire IL as part of the reasoning thinking process in order to deal with information. She projected a relationship approach, central to **the perceptions of information** consumers. The ACRL reconsidered the explanation of IL given by ALA in 1989. They also abridged the traits of Doyle from ten to seven and portrayed them as six miscellaneous capabilities that can distinguish between the information literate and illiterate persons. Bundy (2004) advocated that ACRL standards may be judged as the inclusive effort to make the IL measurable to date. It is also a fact that Australia and New Zealand are the leading advocates of IL and their IL structure is based on ACRL standards.

The study by Sproles et al. (2013) analyzed over 3500 publications from the first decade of the 2020s on IL and library instructions and highlighted that 70% of the publications were from the USA, there was a growing contribution from other regions globally. In order to measure the IL of individuals, ACRL (2014) presented performance indicators and outcomes to evaluate the degree that which effectively the scholars have accomplished IL.

Nisha and Varghese (2021) conducted a comprehensive analysis of 104 previous studies on IL and highlighted that IL is a crucial skill in the current information era. The study emphasized that IL training could help bridge the digital gap between affluent and underprivileged individuals. Li et al. (2021) conducted a study analyzing articles on IL published from 2005 to 2019 in the Web of Science databases. The study concluded that the popularity of innovative IL research topics was increasing and that these topics were interconnected.

2.2 Information Literacy Skills (ILSs)

The capability of a person to complete an assignment and the time spent to complete it is called a skill (Madu and Dike, 2012). However, literacy skills are required to change information into knowledge (Nwosu et al., 2015). Accomplishing ILSs is a fundamental aspect of IL and can serve as a means to acquire the necessary tools to enhance IL in individuals. IL encompasses the cognitive abilities required to effectively utilize information, distinct from other technological competencies related to storing or transmitting data (Idiodi, 2005). However, the phrase "ILSs" is defined as the abilities required to address information-related challenges (ALA, 2000).

Bundy (2004) conducted a critical review of IL Standards and identified two main components: Generic skills encompassing problem-solving, collaboration, teamwork, communication, and critical thinking, and Information skills including information seeking, information use, and information technology fluency. The succeeding definitions are very similar to ALA. In diverse disciplines, ILSs needed by individuals are the capability to define issues and instigate plans to locate, find, evaluate, utilize, and synthesize, information (Ojedokun, 2007). These skills will empower the individuals and make them continuous learners. Cats and Lau (2008) observed that ILSs are the capabilities of a personality to identify

when information is needed; to trace, access, manage & examine the eminence of information; and be capable, of accessing and using this information for making critical decisions; and to correspond expressively to others.

Nwosu et al. (2015) reviewed all the available definitions of ILSs and presented a comprehensive definition of ILSs as proficiency in IL involves the ability to discern the necessity for information, determine the extent and depth of required information, access information from diverse sources, synthesize data to ascertain facts, assess information currency, apply information ethically and logically, and effectively package information for subsequent users' critical decision-making. Similarly, Mitchell (2013) also explained that ILSs refer to an individual's ability to articulate a purpose, locate, retrieve, and evaluate information sources, and effectively utilize, manage, and communicate both the information and its origins to others.

IL is a fundamental requirement that spans all disciplines, educational settings, and levels of education. By acquiring IL skills, individuals become proficient in navigating and utilizing information, enabling them to take charge of their own learning, think critically, and develop into self-directed and independent learners (Etim and Nssien, 2007). Ranaweera (2008), shares similar views, emphasizing that information literacy skills (ILSs) are essential for everyone in society, but particularly crucial for faculty members to effectively carry out their professional duties. Building on this, Kousar and Mahmood (2015) emphasized that information literacy is vital for individuals to succeed in all professions, highlighting its universal significance for professional success.

2.3 Information Literacy Skills in LISPs

The evolving information and service environment necessitates a certain level of proficiency from LISPs to handle complex tasks. The drive to meet the demands of the 21st century necessitates the exploration of new dimensions and approaches to differentiate LISPs from other related professions, ensuring their continued effectiveness and relevance. (Ali and Richardson, 2018, Farooq et al., 2016).

Within the realm of information and education, IL holds significant value for LISPs in comparison to professionals from other fields. (Bawden and Robinson, 2009). Heinrichs and Lim (2009) **take it a step further** and have highlighted the necessity for future LISPs to acquire skills in web designing, database development, and multimedia utilization. ILSs have become a fundamental aspect of the LIS profession. The integration of ILSs in LIS now encompasses supporting various online activities such as digital reference services, online purchases, online lectures, website design, and data management, including references and institutional repositories (Ali and Richardson, 2018). The study of Naveed and Rafique (2018) also confirmed that IL is believed obligatory capability in the workstation. It enhances the competency of LISPs/staff to make appropriate decisions. Consequently, currently, the leading focus of LISPs is on IL (Corrall, 2008).

The majority of individuals in the field of LIS either already possesses or aspires to enhance their proficiency in IL, which is considered a fundamental skill. Bird et al. (2012) **illustrated that university LISPs are prioritizing the enhancement of their ILSs more than other working professionals**. Numerous LISPs and some faculty members have the view that IL is a discipline and its teaching responsibility is shared both by faculty and LISPs (Ivey, 2003).

The findings of Ullah and Ameen (2015) confirmed that IL is an indispensable fraction of LISP's services. At the same time, Ameen and Gorman (2009) acknowledged that trained LISPs are required to support IL in Pakistan. The LISPs should be taught generic ILSs like formal search strategy, identifying information needs, developing keywords, using Boolean logic to do a search, using controlled vocabulary, and application of critical thinking (Grafstein, 2002). Translating these generic ILSs into the context of explicit discipline is a challenge for LISPs (Farrell, 2012).

Anwar and Warraich (2013) identified that in Pakistan, the primary factor contributing to the suboptimal performance of LISPs is a skill mismatch, which refers to the disparity between the digital skills they possess and those required for their roles. Conversely, Ameen and Gorman (2009) revealed that LISPs in Pakistan have been excluded from the opportunity to develop IL /digital literacy educational programs, due to inadequate training and ineffective promotion.

2.4 Information Literacy in Pakistan

Universally, IL is a well-recognized term, however, in developing nations such as Pakistan, it is still in its nascent stages (Ullah and Ameen, 2015). In the Pakistani context, the notion of IL was primarily presented by Anwar in 1981 (Naveed and Mahmood, 2019). However, after a long time, Ameen and Gorman published their research paper on IL (Ameen and Ullah, 2016). Similarly, Bhatti (2010) highlighted the significant lack of literature on IL in Pakistan. However, over recent years, IL has garnered attention from academia, professionals, students, and researchers in Pakistan, leading to research endeavors aimed at comprehensively understanding various aspects of IL at the MPhil and PhD levels (Ameen and Ullah, 2016).

In the context of Pakistan, the majority of existing academic works on IL have focused on investigating the ILSs of undergraduate and postgraduate students by themselves or from their teachers (Ahmad et al., 2020, Basit et al., 2021, Haider and Ya, 2021, Naveed and Mahmood, 2019, Naveed and Mahmood, 2021, Safdar and Idrees, 2021, Shafique and Bhatti, 2017, Zeeshan et al., 2020). However, few studies were conducted to gauge the IL level or its effect on the work performance of scientists/Lawyers/ journalists/police officers in Pakistan (Naveed, 2022, Naveed and Kamran, 2022, Naveed and Mahmood, 2021, Naveed and Rafique, 2018, Naveed and Shah, 2023, Sadia and Naveed, 2024).

Ameen and Naeem (2022) determined the news literacy skills of LISPs (of six divisions of Punjab) to deal with fake news. However, the studies of Din et al. (2022), Khan (2020), and Ali and Richardson (2018) are the few studies that have gauged the ILSs/digital ILSs of LISPs working in the universities of Islamabad, Peshawar, and Karachi, Pakistan.

In conclusion, the development of ILSs is crucial for individual growth and empowerment, as well as for the effective functioning of LISP's performance. Efforts to enhance IL in educational settings and professional environments are essential to equip individuals with the necessary tools to thrive in today's information-rich world. So the study is established to fill the literature gap and gauge the current status of ILSs of university librarians in Pakistan.

3 Statement of the Problem

It is the era of information and in this age, ILSs of the LISPs are becoming of utmost importance to deliver various services to library clients. Therefore, the low or high quality of ILSs of LISPs may decide their work performance. It is supposed that LISPs assist the users/clients based on their possessed knowledge and skills. A review of the previous literature revealed that various scholars have evaluated/determined the level of ILSs/digital literacy skills of LISPs (Ameen and Naeem, 2022, Anyaoku et al., 2015, Humbhi and Jabeen, 2019, Khatun, 2013, Mansour, 2017, Nwosu et al., 2015, Okeji et al., 2020).

Few studies have also been conducted in Pakistan to assess the level of ILSs/news literacy skills among LISPs. Ameen and Naeem (2022) determined the news literacy skills of LISPs (of six divisions of Punjab) to deal with fake news. Din et al. (2022) focused on librarians in Islamabad, Pakistan, to measure their perceptions, practices, and challenges in offering IL

instruction programs in university libraries. Khan (2020) **examined the digital ILSs of university LISPs of Peshawar**. Similarly, Ali and Richardson (2018) investigated the competency of ILSs among LISPs working in universities in Karachi, Pakistan. The literature review disclosed that the ILSs/news literacy/digital ILSs of university LISPs of various cities have been examined whose results may not represent the whole country. **To address this gap in the literature, the present study seeks to assess the ILSs of university LISPs in Pakistan and provide insights into their information literacy competencies.**

The study could be helpful for the LISPs, academia, and researchers to understand ILSs. It might be supportive for LISPs and researchers to turn out to be critical patrons of the published literature. The study could assist the university management in the conscription, administration, and training of their LISPs and also for professional associations to manage the training of ILSs development. Moreover, the study may force library schools to upgrade their curriculum according to new job market requirements.

4 Objectives and Research Questions

The primary aim of the research is to determine the competency level of ILSs of university LISPs in Pakistan, as well as to investigate their attitudes towards the training of ILSs. For this purpose following two research questions were proposed:

- RQ1. What is the perceived competency level of ILSs of university LISPs in Pakistan?
- RQ2. What are the attitudes of LISPs towards the training of ILSs?

5 Methodology

In this experiential research, a quantitative survey research approach was employed and a questionnaire was used to collect data. Due to the unavailability of a suitable instrument to assess the librarians' competency levels as per the study's requirements, statements were adapted from previous studies (ACRL, 2000, Chan, 2012, CILIP, 2012, Herring, 1994, Olakunle and Olanrewaju, 2019) to create a self-administered survey tool. The content validity of this tool was verified through a pilot test involving ten LISPs. Feedback from the pilot test participants was incorporated into the questionnaire, leading to the final version being ready for data collection purposes.

The research **tool** in this study was developed based on eight subdivisions sourced from the Chartered Institute of Library and Information Professionals (CILIP, 2012). These subdivisions encompassed 47 items covering various aspects such as information need, availability, finding, evaluating, **working with results**, ethics of use, sharing, and managing information. The assessment utilized a five-point Likert scale ranging from very incompetent to very competent. To ensure the reliability of the **instrument**, the alpha coefficient test was employed, yielding scores between 0.75 and 0.89, indicating a high level of internal consistency.

The research sample encompassed nearly 900 librarians affiliated with various universities, both public and private, across Pakistan. Utilizing the Krejcie and Morgan (1970) table, the sample size was determined to be 269 respondents. A convenience sampling approach was employed to gather data

from librarians stationed at central libraries within the primary and satellite campuses of these universities. The participants were reached out to via telephone calls, and the survey instrument was disseminated through WhatsApp and email channels. Out of the 269 librarians who received the questionnaire, 253 responded, resulting in an impressive response rate of 94%.

Analysis of the data was performed using SPSS software, version 19. The mean scores of the elements related to the ILS factors were computed, compared, and assessed through the application of mean and standard deviation.

6 Results

6.1 Mean and Standard deviation of the factors of ILSs

The research study requested the participants to judge their perceptions about their ILSs. A five-point Likert scale, very incompetent (1), incompetent (2), unsure (3), competent (4), and very competent (5) was practiced to gauge the perceptions of the participants regarding sub-factors of ILSs. The statements of the ILS factors were ordered in the tables from maximum to minimum level keeping in view the mean scores. However, in the case of a tie, the factors having lower standard deviation were placed first.

6.1.1 Mean and Standard Deviation of 'Information Need'

The research study asked the participants to gauge their satisfaction levels regarding 'information need', a subdivision of ILSs. Table 1 demonstrates the mean score of participant's visions that they 'competent' with the subsequent six elements: I feel competent to 'consider benefits of acquiring needed information', identify key concepts describing information need', 'determine the extent of needed information', formulate questions based on information need', 'consult with colleagues to satisfy an information need', and 'recognize various types of sources in different formats identify' (M = 4.13, 4.09, 4.08, 4.01, 3.99, and 3.92 respectively).

Table 1 The mean and standard deviation of information need (N = 253)

S. #	Survey Items	Mean	Std. Dev.
	I feel competent to -----		
1	consider the benefits of acquiring the needed information	4.13	0.78
2	identify key concepts describing information need	4.09	0.72
3	determine the extent of needed information	4.08	0.71
4	formulate questions based on information need	4.01	0.79
5	consult with colleagues to satisfy an information need	3.99	0.80
6	recognize various types of sources in different formats identify	3.92	0.82

6.1.2 Mean and Standard Deviation of 'Information availability'

The study enquired about the target population to estimate their satisfaction level concerning 'information availability', a subdivision of ILSs. Table 2 illustrates that all the respondent LISPs were 'competent' with the succeeding five elements: I feel competent to 'understand, how to access information sources' (M = 4.22), 'keep up-to-to-date with concerned sources according to the need of researchers' (M = 4.15), 'select information appropriate to the need of

researchers' (M = 4.13), 'select appropriate information retrieval systems to access information' (M = 4.12), and 'identify a variety of potential sources available for exploitation' (M = 3.93).

Table 2 The mean and standard deviation of information availability (N = 253)

S. #	Survey Items I feel competent to -----	Mean	Std. Dev.
1	understand, how to access information sources	4.22	0.79
2	keep up-to-date with concerned sources according to the need of researchers	4.15	0.88
3	select information appropriate to the need of researchers	4.13	0.82
4	select appropriate information retrieval systems to access information	4.12	0.72
5	identify variety of potential sources available for exploitation	3.93	0.88

6.1.3 Mean and Standard Deviation of 'Finding Information'

The views of the participants were recorded in respect of a subdivision of ILSs, 'finding information'. The findings of this factor divulge (table 3), that the respondents were 'competent' with the whole statements: I feel competent to 'understand that adjusting of search strategy can lead to superior outcomes', 'explore multiple subject headings to find adequate information', 'understand, information can be acquired by browsing sources', 'develop efficient search techniques using advanced tools (Truncation, Boolean logic, etc.)', and 'participate in professional groups to access information (Pak LAG, PLC, PLWO, etc.)' (M = 4.07, 4.07, 4.07, 3.94, and 3.91 respectively).

Table 3 The mean and standard deviation of finding information (N = 253)

S. #	Survey Items I feel competent to -----	Mean	Std. Deviation
1	understand that adjusting of search strategy can lead to superior outcomes	4.07	0.78
2	explore multiple subject headings to find adequate information	4.07	0.73
3	understand, information can be acquired by browsing sources	4.07	0.75
4	develop efficient search techniques using advanced tools (Truncation, Boolean logic, etc.)	3.94	0.99
5	participate in professional groups to access information (Academia, Pak LAG, PLC, PLWO, etc.)	3.91	0.94

6.1.4 Mean and Standard Deviation of 'Evaluate Results'

The LISPs were invited to rate their point of view regarding the 'evaluate results', a sub-factor of ILSs. The mean scores shown in Table 4 illustrate that LISPs were also 'competent' with the following statements: I feel competent to 'assess the relevance of information' having a mean, of 4.08, 'check the Purpose of information' mean, 4.05, 'check the genuineness of information' mean, 3.96, 'use resources through comparative analysis with similar sources' mean, 3.94, 'check the currency of information' mean, 3.86, and 'check the biasness of information' mean, 3.72.

Table 4 The mean and standard deviation of evaluate results (N = 253)

S. #	Survey Items I feel competent to -----	Mean	Std. Deviation
1	assess the relevance of information	4.08	0.70
2	check the purpose of information	4.05	0.78
3	check the genuineness of information	3.96	0.88

4	use resources through comparative analysis with similar sources	3.94	0.84
5	check the currency of information	3.86	0.87
6	check the biasness of information	3.72	0.87

6.1.5 Mean and Standard Deviation of 'Work with Results'

The LISPs who participated in the study were requested to scale up their satisfaction level concerning 'work with results'. Table 5 illustrates that the participants were 'competent' with the whole statements: I feel competent to 'summarize main ideas extracted from gathered information' (M = 3.92), 'apply initial criteria for evaluating information and its sources' (M = 3.90), 'use appropriate software to evaluate data' (M = 3.86), 'interpret information (i.e. graphs, tables, diagrams)' (M = 3.82), 'recognize interrelationships among concepts' (M = 3.80), 'use analytical skills to integrate main ideas and generate novel perspectives' (M = 3.78), and 'decide whether initial search query should be revised' (M = 3.78).

Table 5 The mean and standard deviation of work with results (N = 253)

S. #	Survey Items I feel competent to -----	Mean	Std. Deviation
1	summarize main ideas extracted from gathered information	3.92	0.75
2	apply initial criteria for evaluating information and its sources	3.90	0.83
3	use appropriate software to evaluate data	3.86	0.97
4	interpret information (i.e. graphs, tables, diagrams)	3.82	0.95
5	recognize interrelationships among concepts	3.80	0.86
6	use analytical skills to integrate main ideas and generate novel perspectives	3.78	0.84
7	decide whether the initial search query should be revised	3.78	0.84

6.1.6 Mean and Standard Deviation of 'Ethics of Use'

The responders were solicited to share their satisfaction level on the subject of 'ethics of use'. Table 6 indicates the outcomes that the responders were again 'competent' with the entire elements: 'understand Plagiarism and always encourage to cite other's research work' having to mean score, of 4.04, 'understand the coherent usage of copyrighted documents' mean score, of 4.00, Whereas 'understand that permission granted notices are needed for copyrighted material' mean score, 3.98, 'discern the pros and cons of free versus proprietary information access' mean score, 3.92, 'understand the issues related to the security of information' mean score, 3.83, and 'understand the concerns regarding censorship' mean score, 3.77.

Table 6 The mean and standard deviation of ethics of use (N = 253)

S. #	Survey Items I feel competent to -----	Mean	Std. Deviation
1	understand Plagiarism and am always encouraged to cite other's research work	4.04	0.94
2	understand the coherent usage of copyrighted documents	4.00	0.87
3	understand that permission granted notices are needed for copyrighted material	3.98	0.86
4	discern the pros and cons of free versus proprietary information access	3.92	0.87
5	understand the issues related to the security of information	3.83	0.87
6	understand the concerns regarding censorship	3.77	0.87

6.1.7 Mean and Standard Deviation of ‘Sharing Findings’

The participant LISPs were asked to determine their beliefs regarding ‘share findings’. The results reveal that the participants were once again ‘competent’ with the whole five factors: I feel competent to ‘pick a layout suitable to share information’ (M = 4.05), have scholarly communication skills’ (M = 3.96), ‘communicate evidently according to the intended audience’ (M = 3.89), know citation styles’ (M = 3.81,) and ‘write a research paper’ (M = 3.70).

Table 7 The mean and standard deviation of share findings (N = 253)

S. #	Survey Items	Mean	Std. Deviation
	I feel competent to -----		
1	pick a layout suitable to share information	4.05	0.79
2	have scholarly communication skills	3.96	0.83
3	communicate evidently according to the intended audience	3.89	0.81
4	have knowledge of citation styles	3.81	0.93
5	write a research paper	3.70	1.00

6.1.8 Mean and Standard Deviation of ‘Managing Findings’

The contributor LISPs were requested to estimate their satisfaction level on the subject of ‘managing findings’. The outcomes of the study (table 8) expose that the participants were ‘competent’ with all the subsequent statements: I feel competent to ‘ensure the secure storage and management of searched material/ findings’, ‘Organize resources for easy retrieval later’, ‘manage research data through appropriate methods’, ‘manage verdicts in a diverse layout by using suitable software’, and ‘manage to track changes in documents’ and their mean scores were M = 3.84, 3.82, 3.79, 3.70, and 3.66 respectively.

Table 8 The mean and standard deviation of managing findings (N = 253)

S. #	Survey Items	Mean	Std. Deviation
	I feel competent to -----		
1	ensure the secure storage and management of searched material/ findings	3.84	0.93
2	Organize resources for easy retrieval later	3.82	0.80
3	manage research data through appropriate methods	3.79	0.87
4	manage verdicts in a diverse layouts by using suitable software	3.70	0.98
5	manage tracking changes in documents	3.66	0.95

6.1.9 Training of University LISPs regarding ILSs

The respondents were requested to gauge the level of their experience regarding the statement: ‘Have you received any training regarding ILSs?’ The responses were measured based on yes (1) and no (2). Table 9 illustrates that 170 (67.2%) respondents replied that they have got training regarding ILSs however 83 (32.8%) were not trained in respect of ILSs.

Table 4.9 Frequency and percentage regarding ILSs training (N = 253)

S. #	Survey Item	Frequency		Percentage	
		Yes	No	Yes	No
1	Have you received any training regarding ILSs?	170	83	67.2	32.8

To check the degree of observations of participants about the statement ‘Do you think that IL training is necessary for librarians?’ A five-point Likert scale ranging from ‘strongly disagree’

(1) to 'strongly agree' (5) was practiced. The data presented in Table 10 shows a unanimous consensus among all participants, with a mean score of 4.65, indicating a strong agreement with the statement.

Table 4.10 The mean and standard deviation of ILSs training for LISPs (N = 253)

S. #	Survey Item	Mean	Std. Deviation
1	Do you think that IL training is necessary for librarians?	4.65	.73

7 Discussion

The subsequent discussion tends to answer the findings related to the first objective of the study. In the present age, LISPs are expected to be more aware of ILSs. LISPs need the information to gratify their missions and objectives, and as they work to serve the library users, it is also needed to satisfy the needs of their users. In this encouraging research environment, LISPs can only support the users if they have the knowledge and capability regarding ILSs. Therefore, to check the ILSs of **Pakistani university librarians, the research study** used eight skills of ILSs explored by CILIP (2012) and are discussed as under:

The research study demonstrates that the mean scores of four factors of 'information need' are more than four which shows that LISPs are competent regarding these statements. They are capable of considering the benefits of acquiring needed information, identifying key concepts describing information needs, determining the extent of needed information, and formulating questions based on information needs. The LISPs are also competent with the remaining two factors as they feel competent to converse with aristocracies to accomplish the needed information, and recognize varied layouts of probable sources; however, their mean values remain almost four. The outcomes of the study are consistent with the findings of Durodolu and Adekanye (2017) and Anyaoku et al. (2015) who reported that LISPs possess high skills to fulfill their information need. However, the LISPs are required to improve the last two skills.

The study findings of 'information availability' reveal that respondent LISPs feel competent that they have the skills to approach sources of information, keep up-to-date with these, select appropriate information, and select appropriate information retrieval systems as the mean score of these statements is above four. The mean score of the remaining item, to explore and utilize various available sources is also almost four. The results are consistent with the findings of Anyaoku et al. (2015) who exposed that respondents answered that their skills to identify various sources to access the needed information are at a higher level. The results of the study are also steady with the findings of Ahmad (2014) who validated that the skills of the researchers to identify diverse sources to access the needed information are appropriate. The study findings reveal that **LISPs must improve their ability to recognize and harness a wide variety of potential resources.**

The mean score of the outcomes of factors of 'finding information': to understand altering search approach may offer ultimate results, search numerous subject headings to decide adequate information, and information can be acquired by browsing sources is beyond four, which means that respondents are competent regarding the said statements. The LISPs are also competent with the next two items; they formulate effective search strategies and participate in professional groups to access information as their mean scores are also roundabout four. **The current results align with the discoveries of Ahmed and Sheikh (2021), which showed that library professionals demonstrated proficiency in retrieving information from search engines using various techniques. The present study's outcomes are in agreement with the verdicts of Ali and Richardson (2018), Umeji et al. (2013), and Ansari (2013) which showed that university librarians hold enhanced ILSs, enabling them to efficiently explore and retrieve information resources.** The findings are consistent with the outcomes of Bronstein and Tzivian (2013) who examined that Israeli LISPs have high self-efficacy perceptions regarding their

searching skills. The same results were found by Anyaoku et al. (2015). Their research revealed that LISPs perceived their information retrieval skills to be of a high standard, rating their abilities as advanced. Nevertheless, the findings of the statement, to formulate effective search strategies, are contradicted by the study outcomes of Anyaoku et al. (2015) who demonstrated that LISPs are the least skilled in formulating effective Boolean search techniques. Study findings suggest that LISPs should participate in professional groups, their relations will be strong with diverse kinds of professionals who might support them to find information in a better way.

The mean scores show that LISPs are also competent with the entire statements of 'evaluate results' and they have the skills to assess the relevance, purpose, **genuineness**, currency, and biasness of information **with mean values of 4 or close to 4**. The verdicts are somewhat consistent with the findings of Ullah and Ameen (2015) who verified that their respondent LISPs of public sector libraries underestimate their evaluation skills. The findings are consistent with the findings of Durodolu and Adekanye (2017), Ahmad (2014), and Anyaoku et al. (2015) who confirmed that LISPs have good evaluation skills. The LISPs are requested to improve their above skills and especially to make the comparison of works and check the **currency of information and its biasness**. If the LISPs are unable to judge the concealed biasness of the research work it will be very harmful to those research works which are based on it. On the other hand, authentic and current information has its worth to complete the tasks with confidence and determination.

The outcomes of the study illustrate that the respondent LISPs are competent with the whole succeeding statements of 'work with results' as they feel competent to summarize main ideas, apply criteria for evaluating information and its sources, **usage of suitable software for data evaluation**, interpret information, **Identify connections between ideas**, **apply critical thinking to combine key concepts to form new ideas**, and **determine whether the initial search query needs to be refined or modified**. The findings are steady with the results of Durodolu and Adekanye (2017) who disclosed that LISPs possess a good ability **to merge central ideas to generate new perspectives**. The mean scores of less than four indicate that the level of skills is somewhat low, so the respondents have to improve these skills in order to remain relevant in the research process.

The responders are again competent regarding the entire elements of 'ethics of use'. **They are competent in their ability to recognize and understand plagiarism and are consistently encouraged to properly cite the work of other researchers**, use the copyrighted material fairly, **the need to recognize the importance of permission notices for copyrighted works**, and **the debates surrounding open access versus fee-based models**, security, and censorship of information, as the mean scores of all the factors are above or roundabout four. The results are consistent with the findings of Durodolu and Adekanye (2017), Anyaoku et al. (2015), and Ahmad (2014) who reported that researchers agreed that they possess the skills to use information ethically and legally. However, it is demanded that LISPs upgrade their above-said skills in order to play their role in supporting the users. The LISPs are required, especially **to improve their capabilities to comprehend the concerns associated with security** and censorship of information. To protect the information by applying security and using it fairly has been the responsibility of LISPs for decades but in this digital environment, this responsibility demands extraordinary capabilities from LISPs. Recently everything is available on the internet and if the LISPs understand the censorship well, they will be able to apply censorship policy keeping in view the type of their library and thus can be able to protect the ethics of their users.

The results reveal that the participant LISPs are once again competent regarding the whole five factors of 'sharing findings' **with mean values close to 4**. The LISPs feel competent to choose an appropriate format to share information, have scholarly communication skills, **tailor the communication to suit the needs and level of understanding of the target audience**, know styles of citation, and write a research paper. Findings expose that the skills of LISPs

regarding citation styles and writing a research paper are somewhat weak. **Therefore, LISPs must develop and strengthen their competencies in this area to remain effective.** The university LISPs should be better equipped with the knowledge of various citation styles and also to write and publish research work because many fresh research scholars come to the library for help.

The mean scores of all the statements demonstrate that the contributor LISPs are competent with all the subsequent statements of 'managing information'. LISPs perceived that they possess the skills to manage the searched material, resources for retrieval later, gather and interpret research data through appropriate methodologies, communicate the findings in diverse formats by utilizing specialized software applications, and track changes in documents. The verdicts are corroborated by the findings of Ullah and Ameen (2015) who confirmed that their respondent LISPs of private sector institutions perceive the organization of information skills as important. In the remaining three factors, **it is a required, that respondents must upsurge their abilities to administer research data through proper data management practices, use suitable software to manage research findings in various formats,** and particularly to manage track changes in documents.

The overall findings of the study related to ILSs reveal that LISPs are competent and possess a good quantity of ILSs. The above discussion answers the 1st research question. The findings are steady with the findings of Humbhi and Jabeen (2019) who illustrated that LISPs have strong ILSs. The findings are contradicted by the results of Ojedokun (2014) who claimed that Nigerian LISPs have a low level of IL competency.

The findings regarding training expose that only 67.2% of respondents are trained in respect of ILSs. These findings are also established by Ullah and Anwar (2012) who depicted that IL training opportunities for LISPs are very exceptional in Pakistan. However, both trained and untrained respondents 'strongly agree' that ILSs training is necessary for LISPs to compete with the changing nature of user needs and thus job requirements for librarianship. These results answer the 2nd research question.

8 Conclusions

The study measures the competency level of university LISPs regarding their ILSs. LISPs **have a critical part** in fulfilling the information needs of library users. The outcomes of the study indicate that overall university LISPs are competent regarding various aspects of ILSs. However, there are areas where improvement is needed, such as identifying a variety of potential sources, formulating effective search strategies, and enhancing skills related to sharing findings and managing research data. The findings also confirm that the majority of the respondents have received training regarding ILSs. However, all LISPs strongly agree that ILSs training is obligatory in doing librarianship in the modern information world.

The study findings may force the university LISPs to practically apply their ILSs to solve the challenging issues of users of information. Survey participants overestimate their skills as compared to actual ones (Mahmood, 2013). Consequently, **the study's reliance on a self-efficacy survey may be a potential limitation.** Therefore, the verdicts **might not be generalizable to all LISPs.** In future, the research may be conducted to scale the ILSs of school/college/university teachers/librarians. Similarly, the impact of ILSs on their work performance may be checked.

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