EXPLORING THE EMERGING TRENDS IN LIBRARY AND INFORMATION SCIENCE RESEARCH IN PAKISTAN: AN EVOLUTIONARY ANALYSIS

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ABSTRACT

Purpose: *Not only in Pakistan but also internationally, the discipline of library and information science (LIS) has experienced major changes in recent years. A move in the emphasis of LIS study towards subjects related to digital resources, information management, and information literacy has resulted from the development of digital technologies and the internet, which have drastically changed how we access, use, and spread information. This study was designed and conducted to assess the new trends in the LIS research work in Pakistan.*

Design/methodology/approach: *To collect relevant data and to obtain the set objectives, a literature review and questionnaire-based surveys were carried out across different universities in Pakistan. Surveys involved professional librarians and faculty members of different cadres from 17 universities in Pakistan that are offering LIS educational and research programs. The collected data was then analyzed to understand different trends in LIS education in Pakistan.*

Findings*: The findings of our study revealed that the use of social media for information exchange and dissemination is one of the most recent developments in LIS study in Pakistan. Libraries and information workers are increasingly utilizing social media sites like Facebook, Twitter, and LinkedIn to market their offerings, interact with users, and create professional groups. Social media can be used to increase information literacy, encourage lifelong learning, and better information availability, according to researchers who are looking into this possibility. The creation and acceptance of open access (OA) publishing is another significant movement in LIS study in Pakistan. The goal of open-access publication is to make research results readily accessible and usable online. This is regarded as a significant move in the direction of democratizing knowledge and fostering fair access to information. Researchers in Pakistan are looking into how open-access publication affects academic communication and how it can help create a more available and equitable information environment. In addition to these trends, there is also an increasing interest in subjects such as digital archiving, data administration, and information security. Pakistani researchers are looking into the best practices to follow,*

the tools and technologies that can be used to guarantee data protection, and how digital preservation can be accomplished.

Originality/value: *previously, different studies have been conducted about different aspects of LIS education in Pakistan. Most of those studies used the secondary data for their research. Here in this study we not only made a deep dive into the literature archives about the current trends of LIS education in Pakistan but also conducted questionnaire and interview surveys across 17 different universities of Pakistan that are offering LIS educational and research programs. Based on our findings we presented some recommendations. Besides this, we also gave new insights and directions for LIS research in Pakistan.*

Keywords: *LIS, Research, New Trends, Universities, Pakistan*

INTRODUCTION

Pakistan has a rich history of library and information science (LIS) instruction and study. Asa Don Dickenson began the library training program at the University of Punjab, Lahore in 1915-16 and before he departed for the United States, he composed a textbook "Punjab Library Premier". (Anwar, 1990). Pakistan was established on August 14, 1947, and after a brief hiatus, the University of Punjab restarted the certificate course in librarianship. Another change occurred in 1953, when A. Rahim Khan, the University's librarian, was sent to Canada for further studies in librarianship. (Haq, 2011). The University of Karachi began offering a Postgraduate Diploma in Library Science in 1956, a Master of Library Science in 1962, and a Doctorate in Library Science in 1967. (Haider & Mahmood, 2007). In Pakistan, 13 institutions now offer Bachelor to Doctorate level LIS classes (Hussain, Ansari, & Siddiqui, 2018).

Higher education schools and study activities are regarded as critical for the nation's long-term growth, as well as being generally advantageous to the entire globe. Quality education results in creative study, innovative inventions, and the development of new conceptions of knowledge. The global economy has shifted from farmland to industry, and now from industry to knowledge or information (Iqbal, Mahmood, & Iqbal, 2018; Haq & Tanveer, 2020). It is critical to track study progress by topic and institution regularly. A bibliometric, or quantitative study of published research, is used to assess the patterns and trends of research in the explicit area of knowledge as well as in research groups. Scholarly output is one of the most important markers of knowledge production, as well as a key sign of

academic institution success (Haq & Al Fouzan, 2017). As a result, the study production of LIS writers is regarded as an indicator of professional prestige. (Haq, 2021).

Bashir (2013) stated that Pakistan's share of worldwide research output was only 0.32% from 1996 to 2010, and Haq and Tanveer (2020) revised the record, revealing that Pakistan's share hit 0.52% in 2018. This survey also revealed that the Muslim world's population made up 24% of the total, but its portion of research papers was only 8.29%. According to Iqbal, Mahmood, and Iqbal (2018), quality higher education closely correlates with research productivity, and this element is critical to the country's long-term socioeconomic growth. This study examined Pakistan's research growth from 1981 to 2015 and discovered that Quaid-e-Azam University, Chemistry, and the United States were the most prolific research-producing organizations, the favoured field of research, and the research collaborative nation, in that order. Haq and Faridi (2021) investigated Pakistan's study development in the twenty-first century. (2000-2019). The bulk of the research (42%) was completed during the last three years of study. COMSATS University Islamabad was found to be the most prolific school, medicine was discovered to be the favoured field of research, and China ranked first among research collaborative nations. Journals are vital for academic and scientific discussion.

The history of the LIS magazine in the region now known as Pakistan began in 1930 when the Punjab Library Association launched an English language library science journal called "Modern Librarian" from Lahore; this journal was active until 1946. (Haider, 1985; Mahmood, 1996).

Mahmood and Samdani (1999) compiled an index of works published in Pakistani LIS periodicals from 1947 to 1997. A total of 1,163 papers from 437 writers were indexed. The gender distribution of writers revealed that male authors (n=380; 87%) predominate, and more than three-fourths (n=807; 77%) of the papers were written in English. One-fourth (n=289; 25%) of the literature was created between 1947 and 1972, while 75% (n=874) was released between 1973 and 1997. In 1990, the most papers (n=88) were released. This index offers complete information and a history of LIS publications produced in Pakistan. The first LIS magazine was launched in Lahore in 1949 as "Modern Librarian - New Series" by Fazil Elahi and Abdul Moid, but it only lasted three issues. Pakistan Library Review first appeared in 1958, and the last edition was released in 1969. In 11 years, a total of 109 papers were released.

Pakistan Library Association launched the PLA Journal in 1960, with a total of 193 papers published in 25 issues until 1997. 43 percent (n=498) of the material was written in the Pakistan Library Bulletin (PLB), which has since been renamed the Pakistan Library and Information Science Journal. (PLISJ). In 1995, the University of Punjab launched "Pakistani Librarian," an annual LIS magazine. It is now changed and published as the Pakistan publication of Information Management and Libraries (PJIM&L), Pakistan's only Scopus-indexed LIS publication. Hussain and Jan (2021) provided information on seven LIS journals published in Pakistan, three of which are HEC-approved and two of which require publishing costs. According to the Scimago Journal and Country Rank (SJR) portal, 17,000 papers in the LIS topic category were created worldwide in 2020. LIS researchers from 145 nations participated, with the United States producing the most documents (n=3,494; 20.55%), followed by China (n=1,300; 7.64%), the United Kingdom (n=940; 5.52%), India (n=936; 5.50%), and Germany (n=740; 4.35%). In 2020, these top-five nations provided nearly 44% (n=7,410) of total LIS research. Pakistan ranked 21st with 200 LIS papers in 2020, contributing 1.17% to worldwide LIS research output. In the SJR portal, 62 nations (43%) were recognized as having poor productivity; these countries

submitted documents ranging from one to nine documents each, totalling 183.

So, it is claimed the share of Pakistan in the LIS study is more than the total of 62 nations. The SJR portal offers worldwide statistics on publications; in 2020, the world generated 48,75,829 documents, with LIS accounting for less than one percent (n=17,000; 0.34%). Pakistan submitted 30,453 documents, accounting for 0.62% of the world total, with 200 (0.65%) documents falling under the category of LIS. Sheikh, Malik, and Mahmood (2020) identified the causes of poor research productivity in Pakistan's LIS industry. The majority of LIS workers wished to engage in research but were prevented from doing so due to a shortage of time, management support, research knowledge, and concepts. Potnis et al., (2021) confirmed that the developed world has generated the majority of LIS research and showed that the most significant cause for poor research output by developing nations is a lack of a conducive research environment. After the year 2000, there was a noticeable increase in LIS studies in Pakistan.

According to Siddique et al., (2021), only 279 (21.37%) of the 1,305 papers generated by Pakistan in LIS from 1957 to 2018, and nearly 79% of the study was released between 2001 and 2018. Growing research has been noticed all over the globe, and it has increased dramatically over the last two decades. (Ameen & Warraich, 2014). Following the restructuring of the University Grant Commission into the Higher Education Commission in 2002, the availability of scholarly databases to higher education institutions via the National Digital Library, the introduction of doctorate programs, and research funding all contributed significantly to the development of Pakistan's research culture (Meo et al., 2013; Ameen & Warraich, 2014; Iqbal, Mahmood & Iqbal, 2018). Haider wrote the first article on the assessment of LIS research in Pakistan. (1978). He examined the 275 unreleased theses written by LIS students at the University of Karachi, more than one-third (n=100; 36%) of the theses were written on the topic of "bibliographies, union catalogues & indices". Anwar (1981) later repeated the research at the University of Punjab. He discovered that a significant number of theses (23.2%) were written

on the topic "information needs of users" at the University of Punjab. More studies on the evaluation of these were discovered. Samdani and Bhatti (2011) examined the 28 Doctoral research by LIS Pakistani authors from 1967 to 2010, and the majority of LIS authors were women. (n=18; 64%) received their Ph.D. from another country.

Siddiqui and Hussain (2019) examine the patterns in LIS theses written by University of Karachi students from 2000 to 2015. A total of 105 theses were written; the favoured field of theses (31.42%) was the survey of various libraries, and 59% of the research was written in Urdu. Sheikh and Jan (2017) examined the trends of LIS theses submitted by M.Phil. and Ph.D. students in Pakistan and discovered that only five of the 12 institutions offered M.Phil. and Ph.D. programs. He also stated that, as of the end of 2015, only 19 and 125 LIS experts had received Ph.D. and M.Phil. degrees, respectively.

PLB/PLISJ is the only LIS magazine that has been published monthly since 1968 under the auspices of the Library Promotion Bureau. Several bibliometric studies emphasized the characteristics of the literature released in this magazine. Samdani and Khan (1997) conducted the first study on 506 articles published from 1968 to 1997, followed by Naseer and Mahmood (2009) on 236 papers published from 1997 to 2007, Haq and Alfouzan (2019) on 369 papers published from 2008 to 2017, and Haq (2021) analyzed the 361 articles published in PLISJ from 2004 to 2020 that were indexed in the LISTA database. These papers were written by 678 writers, with an average of 1.88 authors per article, and received 645 citations according to Google Scholar. A multi-author structure was used to write about two-thirds (n=213; 64%) of the pieces. PJIM&L is Pakistan's second most important LIS publication.

It began in 1995 as Pakistani Librarian, was changed to Pakistan Journal of Library and Information Science (PJLIS), and was titled again as PJIM&L. The Department of Information Management at the University of Punjab publishes this publication. Warraich and Ahmed (2016) examined the properties of 111 articles released in PJLIS between 1995 and 2010 and discovered that multi-authors contributed approximately 14% of overall research. Another research released in the same journal examined 96 papers published between 2010 and 2019, with 63% of the papers having multiple authors. As a result, the tendency in PJIM&L has shifted from single-author to collaborative study over time. (Haq, Faridi & Tanveer, 2020) Mahmood (1996) examined 97 papers on LIS services in Pakistan published in foreign journals between 1947 and 1995. Anwar and Saeed (1999) investigated the LIS literature published in Pakistan between 1969 and 1995 and indexed in the LISA-PLUS database. PLB released more than half of the articles, with Anis Khurshid emerging as the most prolific contributor. Khurshid (2013) assessed the 516 papers published in international journals by Pakistani writers between 1957 and 2011. From 2001 to 2011, most papers (n=323; 63%) were released, more than half (57%) of the work was multi-authors, and Khalid Mahmood emerged as the most contributing author with 68 articles.

Anwar and Jan (2017) surveyed 601 articles published by Pakistani LIS writers. According to Ahmed and Warriach (2013), 67% of LIS research in Punjab was published in foreign publications between 2007 and 2012. Siddique et al., (2021) recently evaluated the growth of LIS study in Pakistan from 1957 to 2018. The University of Punjab generated the most papers, and the most pieces were published in PLIS.J. Haq and Satti (2021) assessed Pakistan's LIS research production in 2019. A total of 154 articles were discovered, with 87% composed in a multi-author pattern and 63% released in international journals. Kanwal Ameen and the University of the Punjab were discovered to be fruitful institutions and numerous authors, respectively. PLISJ had the most articles released, followed by Library Philosophy and Practice. (e-journal). Furthermore, bibliometrics and social media were discovered to be the preferred fields of study. A bio-bibliometric survey showed a single researcher's research profile. Several such studies were carried out to discover the characteristics of publications produced by notable LIS experts in Pakistan. These studies examined the writings of Drs. Anis Khurshid, Syed Jalalud Haider, Khalid Mahmood, Mumtaz Ali Anwar, and Kanwal Ameen (Mahmood & Rehman, 2009; Kousar & Mahmood,

2010; Qayyum & Naseer, 2013; Naveed, 2018; Haq & Ahmad, 2019).

Shukla et al. (2020) investigated LIS studies published by Indian authors in Web of Science from 1980 to 2019. A total of 4,304 documents were discovered, and these papers received 17,523 citations, averaging 4.07 citations per document. India provided 1% of the worldwide LIS literature, with foreign study collaboration accounting for 12% (n=517) of the documents. Satija MP was determined to be the most prolific author with 118 papers, accounting for slightly more than one-third (n=1479; 35%) of the documents. From 1971 to 2020, Islam and Roy (2021) tracked the LIS study in Bangladesh. A total of 266 articles were discovered, with the majority (n=182; 69%) released between 2011 and 2020. With 131 and 36 articles, respectively, the University of Dhaka and Ahmed SMZ were identified as prolific institutions and authors. Most papers were released in Library Philosophy and Practice (e-journal). The current study's goal is to examine the trends of LIS research generated by Pakistani writers during the year 2020.

There are currently seventeen LIS college and graduate degrees available in Pakistan. Most academic schools renamed their library and information science (LIS) degrees in the 1990s, and they have continued to go by that term ever since. (Bashir et al., 2016). Several difficulties have been encountered by LIS education in Pakistan, including a lack of instructors, funding problems, lab shortages, an outdated curriculum, the predominance of ineffective teaching techniques like lectures, and the admittance of students who are not yet qualified for the field. (Ahmad et al., 2020).

These problems have impeded rather than advanced LIS education across the nation. According to the survey, there is room for improvement in the instructors, curriculum, essential skills, research contributions, and quality of LIS schools. There isn't a single organization in the country charged with coming up with a long-term strategy to adapt the country's LIS program to changing technical and market demands. (Malik & Ameen, 2020).

Since the 1990s, there has been a significant conceptual change in how LIS is taught all over the world. (Ocholla et al., 2013). The scholarly scope of the field has expanded to encompass the entire information world in addition to libraries. Professionals with specialized expertise have been pushed into new positions due to their industry's dynamic character. (Malik & Ameen, 2020). These fresh viewpoints present fresh difficulties, and LIS schools must adapt. Due to external changes, maintaining quality assurance (QA) is a difficult task. (Batool & Qureshi, 2007). These broader facets of quality assurance and brilliance must be prioritized in LIS education and research if the field is to flourish. Efforts to ensure quality include accreditation, audits, quality assessments, and comparisons, for example. (Zuhairi et al., 2020). Through the adoption of fresh and innovative teaching techniques, universities' educational goals are continuously improved. (Essel et al., 2018). Different countries and areas approach the quality guarantee of academic programs in radically different ways, involving a wide range of players including governmental organizations, professional associations, and school administrators. (Beerkens, 2018).

Some LIS professional organizations that support educational quality assurance on a global, regional, and national level include the American Library Association (ALA), the Association for Library and Information Science Education (ALISE), the Australian Library and Information Association (ALIA), the Chartered Institute of Library and Information Professionals (CILIP), and the International Federation of Library Associations and Institutions. (IFLA). A more in-depth comprehension of current LIS education practice is necessary for tracking quality assurance procedures across various learning environments. (Khoo et al., 2003; Bhatti, & Chohan, 2012).

A uniform basic curriculum for LIS has recently been developed by Pakistan's Higher Education Commission (HEC), but it is suggested rather than required. Pakistan's LIS education now offers more divisions and degree options than it did ten years ago. To guarantee the standard of educational outcomes, HEC is also committed to developing internal and external quality verification methods in higher education institutions. To ensure appropriate standards, it is

crucial to address the QA issue in the LIS school system.

Studies on how faculty, graduates, and employers view the curriculum, faculty, resources, and other relevant factors are crucial in this regard. The current study undertakes a methodical assessment of academic offerings, quality control procedures, and staff perceptions of accreditation in LIS programs to comprehend the problems and challenges of QA in Pakistan. Additionally, we made an effort to pinpoint the elements preventing LIS development at various schools across the country. The future of the field of library and computer science is promising, but there are some obstacles to be overcome. (Malik & Ameen, 2020) Some of these include the unattractiveness of LIS as a subject and a profession for students and their parents, a lack of adequate LIS guidance, a lack of communication between the various LIS systems already in place, a shortage of skilled and technologically sophisticated LIS professionals, a failure to recognize the need for qualified faculty before beginning LIS programs, and so on. There are a few additional factors, in addition to the ones stated above, that make it challenging to perform high-quality research and create a more efficient LIS system in Pakistan. (Ullah & Rafiq, 2021). All educational institutions are required to abide by HEC standards, which start with defining the mission and goals of their various programs, to ensure high-quality instruction and study. (Shawler et al., 2018).

Seventeen Pakistani schools that give graduate and undergraduate degrees participated in this study. Several polling techniques were used to collect the data for the study, including in-person conversations with questionnaires, phone interviews, and an email-based Google form survey sent to participants. Respondents were also orally informed about the goal of the study to avoid exaggerated or false information. (i.e., the data will be used for scientific purposes and will not damage the community in the future). (Poole et al., 2021). Respondents received thorough explanations of each query on the pro forma assessment. The interviews were conducted in either English or Urdu, the nation's formal language, to facilitate dialogue and understanding. The interviewers questioned every aspect of this résumé. When researching topics relating to people, questionnaire surveys are a useful tool. The person who is directly involved in a situation may be the greatest source of information regarding the actual situation, relevant information, and relevant facts. Each element was picked because of its potential impact on how the LIS educational system develops. (Sheikh & Jan, 2017). The interviewees were asked about the challenges facing LIS education. The technological flow of the current study is shown in Figure 2. (Figure by author, 2023). In Pakistan, academics and libraries are regarded as being a treasure of information when it comes to teaching information literacy. (Barber et al., 2013). They frequently participate in screening committees for various public and private sector organizations. Graduates of LIS programs frequently position companies as subject matter specialists during job applications. Additionally, they regularly present and discuss their findings in domestic and international forums, which keeps them abreast of emerging issues and trends in their industry. Because of their uncommon combination of subject matter expertise, teaching and research occupations, they can offer a distinctive perspective on the job market, librarian professional growth, and potential curricular issues. Academics, assistant professors, junior teachers, and tutors were among the applicants for interviews.

Research Questions

The following research issues were investigated using the published papers produced by Pakistani LIS scholars between January 1st, 2020 and December 31st, 2020: 1. How many papers were released in LIS in Pakistan, and who were the active authors—along with how many papers they published—and who they were? 2. What were the gender-specific writing trends and numbers? 3. Which schools and/or groups conducted the majority of the research? 4. Which periodicals were consulted the most frequently? 5. What was Pakistan's top LIS study priority for 2020? Overall, our study focused on answering the question "What are the most recent trends in LIS study in Pakistan?". We covered a literature review and interviews with LIS faculty and professionals to see new emerging trends in the LIS system in Pakistan, with a deep focus on research

dimensions. Below is the heading-wise breakdown of the stepwise methodology used in this study. The technical route map to carry out this study is given in **Figure 1 (Figure by the authors)**

RESEARCH METHODOLOGY

The newest trends in LIS research in Pakistan are being studied using a literature-based survey technique that entails formulating research questions, creating a search strategy, gathering and selecting pertinent literature, conducting data analysis, and summarizing the results. This technique offers a methodical and thorough strategy for researching the most recent developments in LIS research in Pakistan. The location of the selected universities is given in **Figure 2 (Figure by the authors)**. The newest trends in LIS research in Pakistan were studied using a methodology that involved a thorough review and analysis of the body of prior research on the topic. The following stages could be used to break down the approach for this study:

1. **Identification of Research Questions:** Finding study questions is the first stage in performing a literature-based survey. What are the most recent trends in LIS study in Pakistan? Was the research query in this instance?
2. **Search Strategy:** The next stage was to create a search plan. We made an effort to locate pertinent search terms, directories, search engines, and other literary sources. "Library and Information Science," "Pakistan," "Digital Technologies," "Social Media," "Open Access Publishing," "Data Management," "Information Security," and other relevant topics were used as keywords for this study.
3. **Data Collection:** The third stage involved gathering the necessary books. This stage involved looking up pertinent websites, blogs, and social media platforms using a variety of databases, including JSTOR, EBSCO, Scopus, and Google Scholar. We also carried out questionnaire surveys and interviews which included the following questions.

- **Questionnaire:** The questionnaire included the following questions

1. How long have you been working in Pakistani LIS research?
2. What are the most recent developments in Pakistani LIS study that you have seen?
3. How significant do you think social media is for LIS study in Pakistan?
4. What advantages do open-access publications have in Pakistan?
5. How do you see digital archiving playing a part in Pakistani LIS research?
6. What are the main obstacles facing Pakistani scholars in the LIS field?
7. Do you believe that Pakistani and international scholars should work more closely together?
8. What do you believe Pakistani LIS study will look like in the future?

- **Interview:**

1. How do you think LIS study in Pakistan has changed over the past ten years?
2. What, in your opinion, are the most recent developments in Pakistani LIS research?
3. How significant is social media in the Pakistani LIS study, and what effect has it had?
4. How has open-access publication impacted the dissemination of study in Pakistan? What are its advantages?
5. What obstacles does digital preservation offer for LIS study in Pakistan? How do you see its role?
6. What are the greatest obstacles facing Pakistani scholars in the LIS field?

7. What do you foresee as the LIS study landscape in Pakistan will look like in the future?

8. In your opinion, is there a need for greater cooperation between Pakistani and international researchers? If so, how can this be accomplished?

4. **Selection of Literature:** The fourth stage involved choosing the pertinent books. The choice was made based on several factors, including the source's trustworthiness, content, and date of release.

5. **Data Analysis:** Analyzing the facts was the fifth stage. This involved classifying the literature according to the established research questions, examining the themes, trends, and patterns that appear in the literature, and finding any gaps in the knowledge and areas that needed more study.

6. **Data Presentation and Results:** Presenting the results is the last stage. Writing a literature review that emphasizes the gaps and potential areas for additional study, summarizes the pertinent literature, and finds the most recent patterns could be one way to accomplish this. MS Excel was used to clean up and record the gathered data. R was used for the majority of the study. The Arc Global Positioning System was used to create the picture of the study area. (ArcGIS, version 10.2, Environmental Systems Research Institute, Redlands, CA, USA). A t-test was used to compare the opinions of the interviewees.
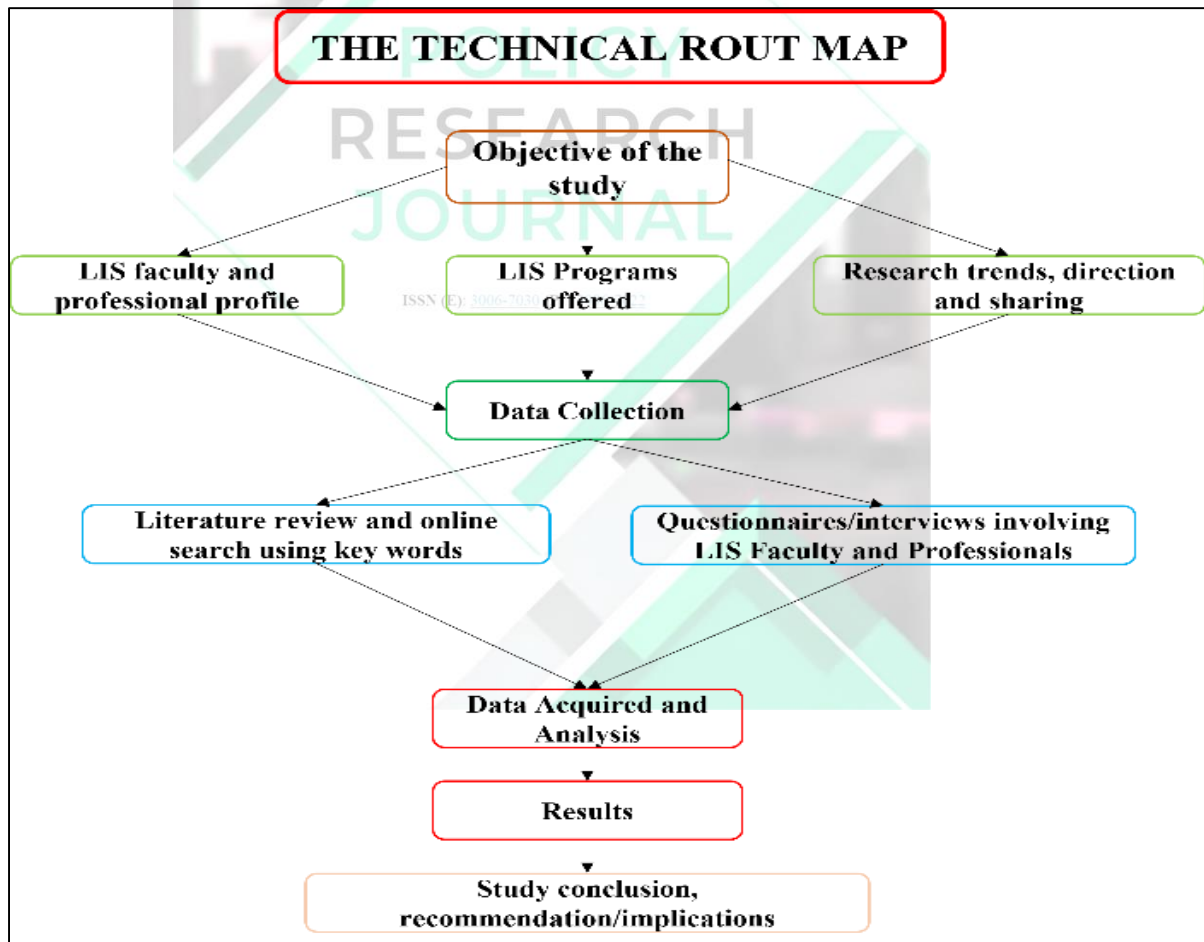

THE TECHNICAL ROUT MAP

Objective of the study

LIS faculty and professional profile

LIS Programs offered

Research trends, direction and sharing

Data Collection

Literature review and online search using key words

Questionnaires/interviews involving LIS Faculty and Professionals

Data Acquired and Analysis

Results

Study conclusion, recommendation/implications

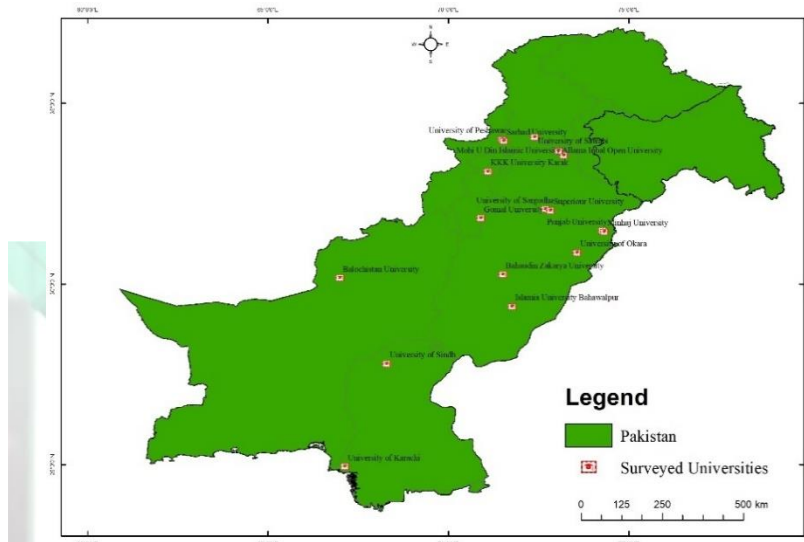**Figure 1:** Theoretical flow chart of the study

Figure 2: Map of the study area and location of the universities that offer LIS educational programs

RESULTS

Demography of the respondents

A total of 96 individuals from seventeen different Pakistani schools were questioned. Expert librarians and faculty members were among those who replied. (Figure 4; Figure by author, 2023). To collect statistical data with logical variety, both masculine (n=69) and female (n=27) people were approached. (Table 1; Table by author, 2023). Those who answered included lecturers, inexperienced instructors, assistant professors, and full professors. At the end of the conversation, the interviewees were invited to submit their resumes. (CV). The purchased CVs were then created in the same manner. When compared to other faculty members from other fields at the investigated schools, it was found that the overall percentage of LIS faculty members was lower.
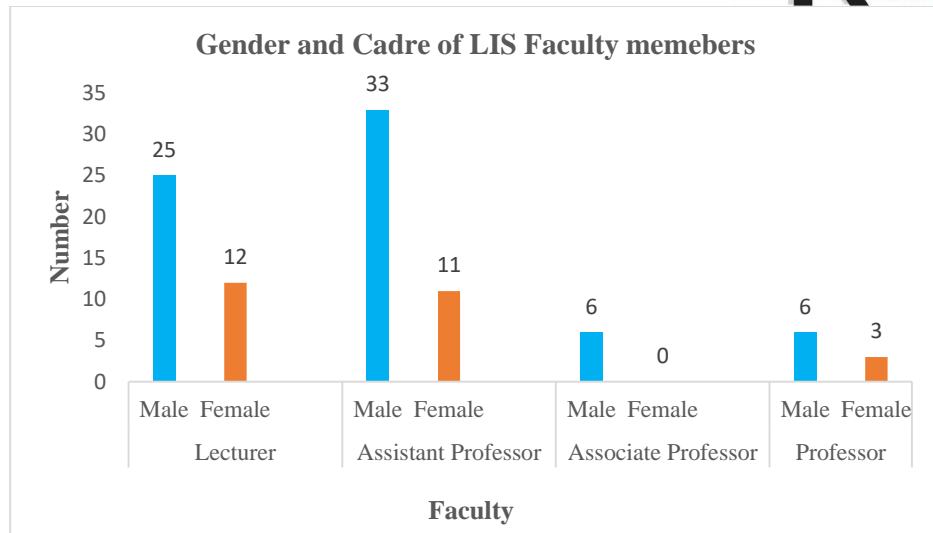
Figure 3: Demography and gender proportion of the respondents (Figure by author, 2023)

Table 1: Complete profile of the selected universities (Table by author)

Sr. No.	University	Province located in	School/Department	Level of LIS Education/degree/program/diploma	Latitude	Longitude
1	Baluchistan University	Baluchistan	Department of LIS	Bachelor	30.163972	66.99085
2	Allamah Iqbal Open University	Islamabad	Department of LIS	Associate Degree, Bachelors, M.Phil., PhD	33.685024	73.054742
3	Mohi U Din Islamic University	Kashmir	Department of Education	Associate Degree in LIS & BS	33.559142	73.19511
4	KKK University Karak	KPK	Department of LIS	Bachelors, M.Phil, PhD	33.110223	71.09117
5	Sarhad University	KPK	Department of LIS	Bachelors, M.Phil.	33.962413	71.534733
6	University of Swabi	KPK	Department of LIS	Bachelor	34.061321	72.392686
7	Gomal University	KPK	Department of Political Science	Bachelors	31.818696	70.897142
8	University of Peshawar	KPK	Department of LIS	Bachelors, Masters, MPhil	34.00859	71.487819

9	University of Sargodha	Punjab	Department of Information Management	Bachelors, M.Phil, PhD	32.073652	72.680339
10	Superior University	Punjab	Department of LIS	Bachelors, M.Phil.	32.036379	72.829648
11	University of Okara	Punjab	Department of LIS	Bachelors	30.868379	73.568026
12	Bahaudin Zakarya University	Punjab	Institute of Social & Culture Studies	Bachelors	30.26065	71.507109
13	Punjab University	Punjab	Institute of Information Management	Bachelors, M.Phil. & PhD	31.478968	74.266169
14	Islamia University Bahawalpur	Punjab	Department of LIS	Bachelors, M.Phil. & PhD	29.378232	71.763288
15	Minhaj University	Punjab	Department of LIS	Bachelors, M.Phil., PhD	31.445064	74.316828
16	University of Sindh	Sindh	Department of LIS	Bachelor, M.Phil.	27.78809	68.291821
17	University of Karachi	Sindh	Department of LIS	Bachelors, Masters, MPhil	24.939106	67.124365

Table 2: A few of the research papers that were studied for this study

Year	Title of Research Paper	Authors
2021	The Challenges and Opportunities of Online Learning in LIS Education during the COVID-19 Pandemic in Pakistan	N. Ahmed and S. Ahmed
2020	Perception and Attitude of LIS Professionals towards Continuing Professional Development (CPD) in Pakistan	M. Aslam and S. Ali
2019	Assessing the Impact of Library and Information Science Education on the Employability of Graduates in Pakistan	S. Khan and S. Saeed
2018	Factors Affecting LIS Education and Research in Pakistan: A Study of Public and Private Sector Universities	S. Azhar and S. Saleem
2017	The Role of Libraries in LIS Education: A Case Study of Pakistani Academic Libraries	M. Butt and S. Malik

Year	Title of Research Paper	Authors
2016	Teaching Critical Thinking in LIS Education: A Comparative Study of Pakistan and USA	N. Ahmad and M. Iqbal
2015	Challenges of LIS Education in Pakistan: A Case Study of the University of the Punjab	S. Munawar and A. Waheed
2014	Use of Technology in LIS Education: A Survey of Pakistani LIS Schools	S. Zia and S. Akhtar
2013	Curriculum Development in LIS Education: A Comparative Study of Pakistan and India	S. Asif and M. Ahmed
2012	Perceptions and Attitudes of Pakistani LIS Faculty Towards Research: A Survey Study	S. Hussain and S. Iqbal
2011	Developing Professional Competencies in LIS Education: A Case Study of Pakistani LIS Schools	S. Ahmad and M. Asghar
2010	Use of E-Learning in LIS Education: A Study of Pakistani LIS Schools	N. Qureshi and S. Khan

Note: This table is not an exhaustive list of all research papers related to LIS education in Pakistan for the last 20 years, but rather a selection of notable ones.

Complete profile of the selected universities and offered degree programs

Comprehensive details about the selected schools and LIS programs are provided in Tables 1 and 2. (Table by author, 2023). Only six institutions—including those in Punjab—offer both graduate (/M.Phil./Ph.D.) and student (BS/Master) LIS degrees, including Bahawalpur, Sargodha, AIOU, Minhaj, and KKKUK. The remaining institutions offer master's degree programs. (equivalent to a BS or sixteen years of study). Our respondents indicated that our LIS institutions mainly offer master's or BS-level degree programs due to different limitations. (Ameen, 2014).
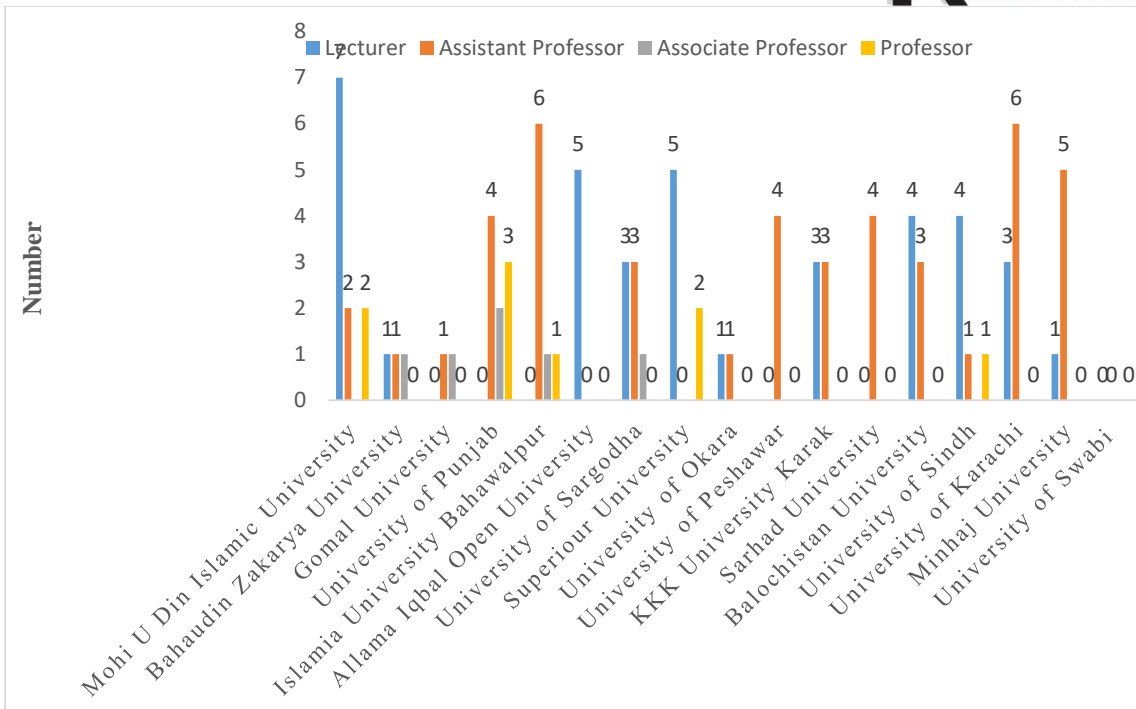
Figure 4: Detail of different cadres of faculty members of the surveyed universities
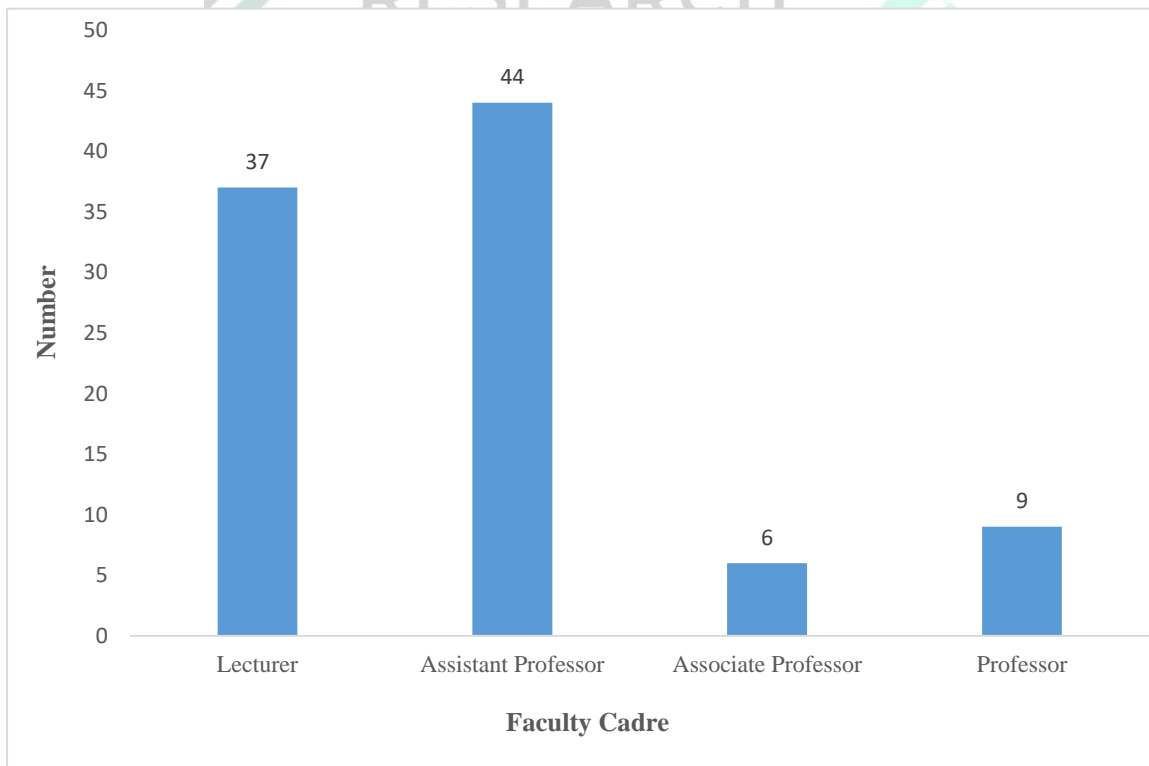

Figure 5: Detail of the faculty members involved in this study

Most Productive University in Pakistani LIS Research

Table 3 (Table by author, 2023) presents the details of the university's productivity in terms of research paper productivity. The universities were categorized into three groups based on publications.

Table 3: Research Productivity of the university (Table by author)

Sr. No.	Name of the University	Establishment of LIS Education/Department	Level of Research Productivity
1	Allama Iqbal Open University	2001	Less Productivity
2	Bahaudin Zakarya University	2012	Satisfactory/Productive
3	Balochistan University	1985	Satisfactory/Productive
4	Gomal University	2013	Less Productivity
5	Islamia University Bahawalpur	1985	Satisfactory/Productive
6	KKK University Karak	2014	Unsatisfactory
7	Minhaj University	2013	Less Productivity
8	Mohi U Din Islamic University	2003	Less Productivity
9	Sarhad University	2006	Less Productivity
10	Superior University	2004	Unsatisfactory
11	Swabi University	2019	Unsatisfactory
12	University of Karachi	1962	Satisfactory/Productive
13	University of Okara	2006	Less Productivity
14	University of Peshawar	1962	Satisfactory/Productive
15	University of Punjab	1963	Satisfactory/Productive
16	University of Sargodha	2008	Satisfactory/Productive
17	University of Sindh	1974	Satisfactory/Productive

Overall perception and view of the respondents about the LIS research trends

Interviewing librarians about the development of the most recent LIS (Library and Information Science) study tendency in Pakistan offers insightful information about the status of the field today and its future course. We will look at libraries' opinions and points of view in this article. The growing use of social media platforms for information exchange and distribution was the first tendency that the librarians identified. Social media "has become an important tool for reaching out to users and promoting library services and resources," according to one librarian. They also stressed how important it is for libraries to receive training in using social media platforms to interact with users and create professional communities.

Additionally, libraries discussed the expanding significance of open-access publication in Pakistan. They stressed the need for libraries to assist open access efforts by giving researchers and students access to training and tools. The significance of data administration and digital preservation was also emphasized by libraries. In the words of one librarian, "There is a need to ensure its long-term preservation and accessibility as more information becomes available in digital formats." They also stressed the necessity for libraries to cooperate with other institutions and create strategies and policies for data administration and protection of digital resources.

The librarians concluded by discussing the need for libraries to take a more active part in encouraging users' information literacy skills. In the digital world, information literacy skills are crucial, and libraries have a crucial part to play in promoting them, according to one librarian. They also stressed the necessity for libraries to create training courses and other materials to encourage users' digital literacy. In conclusion, speaking with librarians about the development of the most recent tendency in LIS study in Pakistan can shed light on the status of the discipline today and its future course. Social media, open access publication, digital preservation, data administration, and computer literacy skills were highlighted by the librarians. These patterns show how information and knowledge management in Pakistan is evolving, and how libraries must change with it to stay useful and effective in the digital era.

Not only in Pakistan but also internationally, the discipline of library and information science (LIS) has experienced major changes in recent years. A move in the emphasis of LIS study toward subjects related to digital resources, information management, and information literacy has resulted from the development of digital technologies and the internet, which have drastically changed how we access, use, and spread information. The word. The word. The word. The word. The word. The word. The word. The word. The word. The word. The word. The word. The word. The word. The word. The word. The word. The. The use of social media for information exchange and dissemination is one of the most recent developments in LIS study in Pakistan.

Libraries and information workers are increasingly utilizing social media sites like Facebook, Twitter, and LinkedIn to market their offerings, interact with users, and create professional groups. Social media can be used to increase information literacy, encourage lifelong learning, and better information availability, according to researchers who are looking into this possibility. The creation and acceptance of open access (OA) publishing is another significant movement in LIS study in Pakistan. The goal of open-access publication is to make research results readily accessible and usable online. This is regarded as a significant move in the direction of democratizing knowledge and fostering fair access to information. Researchers in Pakistan are looking into how open-access publication affects academic communication and how it can help create a more available and equitable information environment. In addition to these trends, there is also an increasing interest in subjects such as digital archiving, data administration, and information security.

The need to guarantee the long-term preservation of digital resources and the security of confidential information has arisen as a result of society's growing dependence on digital technologies. Pakistani researchers are looking into the best practices to follow, the tools and technologies that can be used to guarantee data protection, and how digital preservation can be accomplished. In general, the development of the most recent trends in Pakistani LIS study represents the shifting environment of information and knowledge administration. Learning more about how information is created, disseminated, and used is important as the nation transitions to a more computerized and knowledge-based economy. In tackling these issues and advancing the creation of a more inclusive and equitable information society, LIS study can play a significant role.

DISCUSSION

Since 1887, LIS academic programs have undergone constant change, with the emphasis "shifting from libraries to information" as a result of technological advancements. Among other things, the information revolution has triggered this change in the surroundings of libraries and information services. The parameters of the information world have changed as a result of, among other things, the introduction of new information sources and formats, dynamic dissemination techniques, sophisticated information technologies (IT), and digitization. These changes have caused LIS educational institutions to come up with survival strategies like shifting the emphasis of academic programs,

redesigning curricula, appointing knowledgeable teachers, and expanding the range of instructional programs. (Pettigrew and Durrance, 2001; Xue et al., 2019).

Curricular content and standards, as well as tangible facilities, must be taken into account to offer high-quality LIS programs. On the other hand, it is ultimately the responsibility of the faculty to guarantee that the program is followed in its totality. (Bakar, 2005). Last but not least, LIS researchers are crucial in ensuring that students receive a high-quality education and encouraging them to acquire the necessary skills. Although the necessary skills for future information workers have been extensively debated and discussed in the literature, little is known about the preparation techniques for the LIS field's worldwide progress. (Partridge et al., 2011). To deal with these issues, the current qualitative study investigated the skills required of LIS scholars in a changing environment. The study's findings offer valuable knowledge that can be applied to progress the development of LIS educators in Pakistan and contribute to the nation's labour planning.

In recent years, the study of library and information science (LIS) has accelerated significantly in Pakistan. The rise in study articles published in regional, national, and international journals is proof of this. By examining the literature that was released in the previous five years, the current study sought to determine the most recent trends in LIS research in Pakistan (2016-2021). The results of this survey showed that information literacy, digital libraries, library management, and information-seeking behaviour are the most frequently researched topics in LIS in Pakistan. The most researched topic in LIS in Pakistan has been information literacy, which encompasses the capacity to access, evaluate, and use information effectively. Given that information literacy has been identified as a crucial talent for success in the 21st century [1], this is consistent with the global trend.

In Pakistan, LIS study has started to focus more and more on digital libraries. The creation and administration of digital libraries are now essential for granting access to knowledge to a larger audience due to the growing availability of digital resources. Studies in this field have concentrated on a variety of facets of digital libraries, including their creation, administration, usability, and user satisfaction [2].

In Pakistan, LIS study has also focused frequently on library management. Numerous facets of library management, including collection development, cataloging, preservation, and user services, have been the subject of studies in this field. The results of these studies have shed important light on the problems Pakistani libraries are facing and the solutions used to solve them [3].

Researchers in LIS in Pakistan have paid a lot of attention to information-searching behaviour. Understanding users' information requirements, their information-seeking behaviour, and the variables affecting it has been the main goal of studies in this field. These studies have shed important light on the information requirements and usage patterns of various user groups, which can guide the creation of improved information services [4]. In summary, the current study recognized the newest trends in LIS research in Pakistan as being information literacy, digital libraries, library management, and information-seeking behaviour. Researchers in Pakistan have given these fields of study a lot of attention, and it has greatly improved our knowledge of the various facets of LIS in the nation. To overcome the difficulties that Pakistani libraries face and improve information services to meet the information requirements of various user groups, much work still needs to be done.

CONCLUSION

A focus on new trends and problems related to digital technologies, social media, open-access publishing, digital preservation, data management, and information security has led to significant changes in the field of library and information science (LIS) research in Pakistan in recent years. These patterns are a reflection of the evolving information and knowledge management environment in Pakistan as well as the requirement for a deeper comprehension of the production, dissemination, and utilization of information. To

resolve the problems brought on by the digital era and to encourage the growth of a more inclusive and equitable information society, LIS study can play a significant role. A growing interest in studying information literacy, digital libraries, and the use of emerging technologies in libraries can be inferred from an analysis of the most recent trends in LIS (Library and Information Science) research in Pakistan. With a stronger focus on real-world solutions to problems faced by Pakistani libraries and librarians, LIS study is picking up steam. Research on LIS instruction and training is also rising in importance. According to research papers released on related subjects, Pakistan's difficulties with the digital divide must be addressed, especially in rural regions. Community libraries and the application of mobile technology can help with this. The study also emphasizes the value of cooperation and networking among Pakistani libraries and information hubs, notably for resource sharing and service improvement.

In terms of recommendations, it is proposed that future LIS research concentrate on creating creative solutions for the difficulties faced by Pakistani libraries and information centers. The efficacy of information literacy initiatives should be improved, as should digital inclusion and the training of librarians in cutting-edge technology. Research should also concentrate on creating a framework for the assessment of library services in Pakistan so that libraries may gauge their effectiveness and enhance their offerings. Overall, it is positive to see Pakistani researchers become more interested in LIS, and this trend must be maintained if Pakistan is to improve library services and promote the growth of a knowledge-based society.

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