



## **Attitude of Librarians towards the Use of ICT: A Study of Seminar Librarians in University of Karachi, Pakistan**

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### **Abstract**

This study investigates the attitudes of librarians towards the adoption and utilization of Information and Communication Technologies (ICT) in departmental seminar libraries at the University of Karachi. A descriptive survey design was employed, and data were collected through a structured questionnaire administered to 51 librarians. The findings reveal a generally positive attitude among librarians towards ICT adoption, with computers and internet facilities being the most commonly used tools. However, the availability of ICT resources remains limited, and usage is constrained by factors such as inadequate funding, poor internet connectivity, power supply issues, and insufficient ICT infrastructure. Training emerged as a critical factor influencing ICT adoption. The study offers insights into the challenges and opportunities associated with ICT use in academic libraries, informing strategies to enhance its effective utilization.

### **Keywords**

ICT Adoption, Librarians' Attitudes, Academic Libraries, University of Karachi

### **Introduction**

Technological progress has made the world a global village, and exchange of information across geographical locations became feasible. ICT has touched all walks of life in every aspect of society, such as education, healthcare, business, agriculture, and banking. Its use is pivotal to human development. Information and Communication Technology (ICT) generally encompasses several technologies that are computer-related, communication-related, and information-related, which include hardware and software elements utilized for the storage, retrieval, and processing of information. ICT is a corner stone of economic growth because it generates new employment, stimulates economic growth, and enhances productivity.



Libraries have developed from conventional repositories to current information centers because of ICT developments. Librarians make use of ICT tools to provide innovative services, transforming library functions to become faster, more efficient, cost-effective, and easy to use. Popular ICT tools are computers, scanners, printers, projectors, online databases, OPACs, storage media, audio tapes, photocopiers, barcodes, and digital cameras. These tools enable different library functions like acquisition, circulation, classification, cataloging, document delivery, reference services, and storage of information.

Spacey, Goulding, and Murray (2003) stated that attitude is central to the adoption, use, and success of new technologies, highlighting that ICT adoption is contingent on librarians' perceptions, behaviors, and beliefs. Ramzan (2004) stated that librarians in developed nations embrace new technologies sooner than their counterparts in developing countries, where difficulties such as limited training and insufficiency of experience hamper adoption. In developing nations, librarians encounter several challenges while implementing, adopting, and maintaining ICT, such as poor finance, poor infrastructure, power outages, and shortage of manpower, absence of standards and protocols, and attitudes against the adoption of technology.

The aim of this research is to investigate librarians' attitudes towards the use of ICT in seminar libraries of the University of Karachi.

### **Research Objectives**

- To determine the ICT resources most frequently utilized by librarians in seminar libraries.
- To investigate librarians' attitudes towards the adoption and use of ICT.
- To find out how extensively ICT is used in seminar libraries at the University of Karachi.
- To determine the reasons why ICT is used in seminar libraries.
- To investigate the problems encountered by librarians in using ICT in seminar libraries at the University of Karachi.

### **Significance of the Study**

This research aims to find librarians' perceptions regarding the use of ICT in seminar libraries of the University of Karachi. Results will provide excellent information about ICT facilities, problems of librarians, and measures for enhancing library operations, knowledge, and skills in ICT utilization. Training, workshops, and seminars are highlighted through this research as a necessary requirement to enable librarians to use ICT properly for better user services.

### **Scope and Limitations**

The investigation is concerned with professional and non-professional librarians' perceptions of ICT application in seminar libraries. It examines the availability and use of ICT



facilities in the 51 departmental libraries of the nine faculties of the University of Karachi, keeping seminar librarians as the study population.

### **Literature Review**

Yacob and Raja Abdullah (1990) researched the information technology attitudes of professional librarians in government-funded special libraries in Malaysia. They discovered that there was low usage of information technology within libraries, yet the accessibility of new technology facilitated a favorable attitude from librarians. The research emphasized that training, education, and support are essential to enable librarians to adopt a positive attitude towards technology and incorporate it appropriately into their practice.

Ajeibelehin, Ekpoma Ikenewe, and Okpetu (2007) researched attitudes of librarians towards ICT for service delivery in university libraries in Edo State, Nigeria. They discovered that the majority of librarians showed a positive attitude towards using ICT, as computers, telephones, and printers were the major ICT resources provided. Yet, costly materials such as OPACs, CD-ROMs, e-books, and fax machines rarely existed, except in a few libraries.

Islam and Islam (2007) investigated the application of information technology in some libraries of Bangladesh. They found that libraries used computers, OPACs, audio and video cassettes, photocopiers, and printers regularly. ICT was applied mostly for communication, cataloging, serial control, and developing in-house databases. Barriers such as an absence of qualified staff, poor infrastructure, and a lack of adequate financial support were found in the study.

Adekunle et al. (2007) studied librarians' attitudes toward the use of ICT in some Nigerian universities. They discovered positive attitudes but raised concerns regarding insufficient training, infrastructure, and technical support. Training had a profound impact on librarians' attitudes toward ICT. Automation project failures were usually explained by inadequate knowledge of hardware, software, and power requirements.

Egavoen (2011) researched the perceptions and attitudes of library personnel towards the use of ICT at the Kenneth Dike Library, University of Ibadan, Nigeria. The results showed largely positive attitudes, and it was recommended that libraries implement ICT knowledge and continuous training to achieve positive attitudes.

Sivakumaren et al. (2011) also carried out a study on the attitudes of library professionals towards ICT in libraries in and around Chennai. Respondents had positive attitudes, though most of them did not possess current ICT knowledge and skill sets.



Mairaj and El-Hadi (2012) had studied ICT implementation in medical libraries in Pakistan. They reported widespread use of computers, projectors, scanners, and printers, whereas sophisticated ICT tools such as barcode readers, multimedia, software, and databases were found to be less used owing to financial constraints and lack of support from the administration.

Efe Francis Ejedatiru and Lucky (2013) studied professional librarians' attitudes towards ICT utilization at Delta State University Library. They observed positive attitudes but noted that insufficient ICT skills and limited training opportunities affected librarians' usage. Mamman (2015) examined the use of ICT in the improvement of public library services across Nigeria. The research established that although ICT equipment such as UPS, video tapes, televisions, printers, and computers existed, users were mostly not satisfied with the extent of technology application.

Achugbue et al. (2017) conducted a study on the attitudes of librarians regarding ICT hardware usage in university libraries in the South-South and South-West regions of Nigeria. They found optimistic attitudes and frequent usage of hardware for everyday tasks. Ejikeme (2017) investigated librarians' attitudinal perceptions of ICT use in academic libraries. The research indicated librarians were open to new technologies despite the hindrances of insufficient training and poor infrastructure.

Hajarat Abubakar et al. (2019) evaluated librarians' perceptions towards the use of ICT in chosen academic libraries in Kwara State, Nigeria. They concluded that popular ICT facilities were computers, projectors, OPACs, printers, and photocopiers. ICT was utilized by libraries for communication, data processing, database preparation, and information circulation. Inadequate infrastructure, poor internet, power supply, and a lack of expertise manpower were challenges.

Mommoh and Emmanuel (2019) evaluated the effect of the use of ICT on service delivery in special libraries in North Central Nigeria. They established that there was high availability of core ICT tools but little application for service delivery, with policy and fund obstacles being the key hindrances. Eromosole and Ugwulebo (2022) surveyed the attitudes of librarians towards sharing information resources in the Nigerian federal university libraries. They reported positive attitudes towards resource sharing but found limited institutional support for joint processing of library resources.

### **Research Methodology**

This research utilized a descriptive survey design. A standardized questionnaire was utilized as the major instrument of data gathering, which included multiple-choice and Likert-scale

questions grouped into five sections. The Likert-scale items utilized a five-point rating from 1 (Strongly Disagree) to 5 (Strongly Agree).

The questionnaire reliability was examined through Cronbach's alpha, whose result was 0.85, meaning there was high internal consistency. The sample size of 51 seminar library and research institute librarians at the University of Karachi was calculated from the Raosoft online sample size calculator. Professional and non-professional librarians were both covered under this study. Data were examined using frequency counts and percentages. The Pearson Product Moment Correlation (PPMC) statistical method was used to test the hypotheses of the study.

### Results and Findings

The results of this research analyze the attitudes of seminar librarians from the University of Karachi towards the utilization of ICT.

**Table 1:** Distribution of Respondents by Gender

Gender	Frequency	Percent
Male	14	27.5%
Female	37	72.5%
Total	51	100.0%

The results in Table 1 show the gender of respondents. The result reveal that out of 51 respondents, 14 (27.5%) are male while 37 (72.5%) are female. Most of respondents are female in this study.

**Table 2:** Distribution of Respondents by Age Group

Age Group	Frequency	Percent
20–25	1	2.0%
26–30	5	9.8%
31–35	16	31.4%
36–40	13	25.5%
>45	16	31.4%
Total	51	100.0%

According to table 2 it is clear that majority 16(31.4%) respondents are fall in the age group of 31-35 years. However same percentage is found for “greater than 45 years of age. Meanwhile 13(25.5%) exist in the age group of 36-40 years. Similarly only 5(9.8%) in the group of 26-30 years and only 1 (2%) rely in 20-25 years of age.

**Table 3:** Qualification of Respondents

Qualification	Frequency	Percent
PhD in LIS	4	7.8%
MPhil in LIS	3	5.9%
Master/BS in LIS	42	82.4%
Certificate/Diploma in LIS	2	3.9%
Total	51	100.0%

As far as the qualification concern, table 3 portray a clear picture that majority 42(82.4%) respondents have master degree. Only 4(7.8%) respondents have PhD degree in library and information science. However the qualification of 3(5.9%) respondents is M.Phil. very few 2(3.9%) respondents have certificate or diploma in library and information science.

**Table 4:** Employment Status of Respondents

Employment Status	Frequency	Percent
Permanent	47	92.2%
Contract	4	7.8%
Total	51	100.0%

The table 4 shows employment status of respondents at university. Majority of respondents 47(92.2%) are permanent employ of the university while 4(7.8%) respondents are doing their job on contract bases.

**Table 5:** Professional Experience of Respondents

Experience (Years)	Frequency	Percent
Less than 1	4	7.8%
1–5	8	15.7%
6–10	9	17.6%
More than 10	30	58.8%
Total	51	100.0%

The table 5 shows that 30(58%) respondents have more than 10 year experience. However 8(15.7%) have 1 to 5 year experience. There are 9(17.6%) respondents are working at university since 6 to 10 years and 4(7.8%) respondents have worked for less than a year. The results reveals that greater number of respondents have more than 10 year experience in seminar libraries

**Table 6:** Availability of ICT Tools in Libraries

ICT Tools	Frequency	Percent
Computer	42	82.4%
Printer	15	29.4%

Scanner	11	21.6%
Projector	6	11.8%
Internet	33	64.7%
Audio/Video Cassettes	4	7.8%
Databases	14	27.5%

Table 6 portray a clear picture of ICT facilities available in departmental and research institution seminar libraries. The results shows that most of respondents have computer and internet facility as ICT tool in seminar libraries at university of Karachi. There are 42(82%) seminar libraries have computers but 33(64.7%) have internet facility. However 15(29.4%) respondents indicates that printer are available in their Libraries. Meanwhile 11(21.6%) have scanner, and 6(7.8%) have audio and video cassette player in Libraries.

**Table 7:** Computer Usage by Respondents

Usage	Frequency	Percent
Yes	36	70.6%
No	15	29.4%
Total	51	100.0%

When the respondents asked about the use of computer, majority 36(70.6%) respondents are using computer in seminar and research institutes while 15 (29.4%) respondents are not using the computer.

**Table 8:** Purpose of Computer Use

Purpose	Frequency	Percent
Data Processing	31	60.8%
Cataloguing and Classification	21	41.2%
Communication	19	37.3%
Database Preparation	11	21.6%
Circulation of Materials	9	17.6%
Reference Services	8	15.7%
Report Generation	4	7.8%

Table 8 indicates that majority 31(60.8%) respondents use computer for data processing while 4(7.8%) use for generating reports. Furthermore 21(41.2%) respondents use computer for cataloging and classification of library material and 19(37.3%) use for communication. Whereas 11(21.6%) respondents use computer tools for preparations of databases and 9(17.6%) use for circulation of library material. However 8(15.7%) respondents use computer facilities for reference services.

**Table 9:** Extent of ICT Usage

Frequency	Percent
Rarely	41.2%
Occasionally	19.6%
Frequently	15.6%
Always	23.5%

Results in Table 9 indicates that most of respondents 21(41.2%) using ICT facilities rarely while 10(19.6%) respondents use ICT facilities occasionally. However 8(15.6%) respondents use frequently, 8(15.7%) respondents use ICT facilities on regular basis.

**Table 10:** ICT Training Received by Respondents

Response	Frequency	Percent
Yes	29	56.9%
No	22	43.1%

The Table 10 shows that majority 29(56.9%) respondents get training for the use of ICT while 22(43.1%) respondents don't have any particular training.

**Table 11:** Type of ICT Training

Training Type	Frequency	Percent
None	22	43.1%
Diploma/Certificate	27	52.9%
University Degree	2	3.9%

Table shows that 27(52.9%) respondents have diploma or certificate in ICT while 22 (43.1%) respondents do not have not any kind of training for the use of ICT. However only 2(3.9%) respondents have university degree related to ICT.

**Table 12:** Perception of Training Usefulness

Response	Frequency	Percent
Yes	48	94.1%
No	3	5.9%

Majority of respondents 48(94.1%) percept that the training is useful while 3(5.9%) respondents consider the trainings are not useful in utilization or adaptation of ICT.

**Table 13:** ICT Literacy Level

Level	Frequency	Percent
Beginner	15	29.4%
Average	24	47.1%
Advanced	7	13.7%

Expert	5	9.8%
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Majority 24(47.1%) of respondents consider themselves at average level followed by 15(29.4%) at beginner level. Few 7(13.7%) respondents reported that their ICT literacy level are advanced while only 5(9.8%) reported they are expert. The finding show that literacy level of respondents is average.

**Table 14:** Challenges in ICT Utilization

Challenge	Frequency	Percent
Inadequate Internet Facilities	42	82.4%
Inadequate Funding	41	80.4%
Epileptic Power Supply	27	52.9%
Inadequate ICT Infrastructure	27	52.9%

The study identify that 42(82.4%) respondents percept “poor internet facilities affect on use of ICT in libraries”. However approximately equal 41(80.4%) respondents consider that inadequate funds to maintain ICT are the main hindrance. 27(52.9%) respondents feels that epileptic power supply affects in the use of ICT in library. Similarly 27(52.9%) respondents consider inadequate ICTs infrastructure as resistance in use of ICT in library. Hence poor Internet facilities is major challenge for Librarians.

**Table 15:** Overall Attitude towards ICT Use

Attitude	Frequency	Percent
Positive	50	98.0%
Negative	1	2.0%

The majority 50(98%) respondents have positive attitude while 1(2%) respondents have negative attitude.

**Table 16:** Reasons for Negative Attitude

Reason	Frequency	Percent
Lack of Time	6	11.8%
Lack of Access	19	37.5%
Lack of Training	7	13.7%
Lack of Interest	8	15.7%

The result shows that 6(11.8%) of the respondents have lack of time to use ICTs. However 19(37.5%) of respondents have lack of access for the use of ICT. Furthermore 7 (13.7%) of respondents have lack of training to use the ICT and 8(15.7%) of respondents have lack of interest in ICTs .

**Table 17:** Correlation between Librarians' Attitudes and ICT Use

Variables	Mean	SD	N	r	p-value	Remarks
Librarians' Attitude	2.74	0.30	51	0.303	0.030	Significant
ICT Usage	1.70	0.19				

The correlation analysis showed a significant positive association ( $r = 0.303$ ,  $p = 0.030$ ) between librarians' attitudes and ICT use, confirming the alternative hypothesis.

### Discussion

The conclusions of this study give meaningful inputs towards understanding the attitudes of seminar librarians working in the University of Karachi regarding the adoption and usage of Information and Communication Technology (ICT). The very high positive attitude (98%) of the respondents are an indicator of a keen desire to incorporate ICT in library functions. Nevertheless, this favorable orientation is not converted into real use through a number of limiting factors.

The demographic breakdown indicates that most of the respondents are female, hold a Master's degree in Library and Information Science, and enjoy significant professional experience. This implies that the respondents are qualified and well-placed to adopt ICT in their professional practice. The widespread availability of elementary ICT tools, most notably computers and internet connectivity, implies that basic infrastructure is prevalent in most seminar libraries. Yet, the paucity of sophisticated ICT resources such as scanners, projectors, and databases shows a key shortfall in technological provision.

Although attitudes are generally good, the pattern of use also reveals a worrying trend. Many respondents said they used ICT tools infrequently or not at all, showing that there is an attitude-behavior gap. This might be explained by the infrastructural and operational issues revealed by the research. Poor network connectivity and limited funding posed the most important obstacles, followed by unreliable electricity supply and a lack of ICT infrastructure. They align with other studies conducted in similar environments (e.g., Hajarat Abubakar et al., 2019; Mommoh & Emmanuel, 2019), where there is a call for systematic investment in ICT infrastructure.

The relevance of ICT to improve library services and user experience has been noted in some earlier studies. For example, Efe Francis Ejedatiru and Lucky (2013) noted that librarians with good attitudes towards ICT use challenge it more to drive services. Likewise, Egavoen (2011) emphasized ICT training continuously to foster a positive attitude among librarians towards



technology. Sivakumaren et al. (2011) also highlighted that in spite of favorable attitudes, the absence of current ICT skills and knowledge among librarians is still the key hindrance to the success of ICT implementation.

Training is a key factor in adopting ICT. The research established that although over half of the respondents had undergone some ICT training, a significant percentage did not have formal training. The belief that ICT training is helpful for library functions was almost universal, emphasizing the need for constant and full professional development programs. Such programs may fill the gap between having positive attitudes and actual use of ICT. Mairaj and El-Hadi (2012) also noted that inadequate budgetary allocation and poor cooperation from institutional management thwart the success of ICT projects in libraries.

Additionally, the correlation analysis supports a positive and significant association between librarians' attitudes and ICT use, suggesting that promoting positive attitudes through ongoing training and resource availability has the potential to improve ICT usage in seminar libraries. The issues with data security and the differential levels of ICT literacy across respondents also highlight the requirement for focused capacity-building efforts. Mamman (2015) brought out the fact that even though ICT facilities were present in Nigerian public libraries, user satisfaction was low because of operational inefficiencies and limited ICT applications.

In total, the discussion underlines that although seminar librarians in the University of Karachi are more or less favorably disposed towards the use of ICT, its translation into effective practice is impeded through structural, funding, and educational obstacles. These challenges demand a strategic response involving institutional backing, proper funding, infrastructure creation, and ongoing professional training.

### **Key findings**

- ICT facilities such as computer and internet are more prevalent in seminar libraries at university of Karachi while printers, scanner and audio and video player are less available in departmental seminar libraries.
- Majority of librarians are using computer in seminar and research institutes
- Librarians are make use of computer for doing library operations such as data processing, cataloging and classification of library material, preparation of databases and circulation of material.
- Librarians are not using ICT facilities on regular basis however they use of ICT facilities to rarely Extent.
- Trainings are useful in utilization or adaptation of ICT.



- Librarians have a positive attitude towards ICT implementation in departmental seminar libraries and research institutes at university of Karachi.
- There are challenges such as poor internet facilities, inadequate funds to maintain ICT, epileptic power supply and inadequate ICT infrastructure encountered by Librarians when they are using ICT.
- Attitude of Librarians influences the use of the ICT in libraries because there is a significant relationship between the attitude of Librarians and use of ICT in departmental seminar libraries in university of Karachi.

### Conclusion

This research examined attitudes of University of Karachi seminar librarians toward the employment of ICT in their libraries. The results present an overall positive attitude of librarians toward the adoption of ICT, indicating an eagerness to adopt technological innovations for improving library services. Still, ICT utilization is limited in practice because of enduring issues like poor internet facilities, lack of proper funding, unstable power supply, and absence of sophisticated ICT infrastructure.

The research emphasizes the key function of professional training in enhancing ICT adoption and bridging the gap between positive attitude and actual implementation. The strong correlation between attitude and ICT usage supports the importance of developing an enabling environment for ICT integration in seminar libraries.

In order to boost ICT usage in seminar libraries, the research suggests:

- Enhanced funding and investment in ICT infrastructure and resources.
- Systematic and focused training initiatives to upgrade librarians' ICT capabilities.
- Enhancing internet penetration and overcoming infrastructural inadequacies.
- Instituting facilitator policies to promote ICT assimilation in library functions.
- By attending to these fields, seminar libraries within the University of Karachi can use ICT for better service provision, hence augmenting academic and research support extended to students and academicians.

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