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Barriers Faced by Library Professionals for Technology Adoption in University Libraries of Lahore, Pakistan

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Abstract:

Major goal of this study was to know barriers for opting technology by University Librarians of Lahore, Pakistan and to furnish suggestions for the effective utilization and application of the latest technological tools. Research was organized in different parts. Firstly, relevant literature was observed by the researchers to get a clear insight. Then, data-collection-instrument was shaped. The population of the study was all the full time regular working professional library staff of the universities of Lahore. The response rate was 76%. In the third phase, collected data were tabulated and analyzed through SPSS Version 24.0 to reach at conclusions. In the final phase, conclusions were inferred along recommendations. Findings of the study show that libraries can't serve the users efficiently if the latest technologies are not implemented. In the libraries of Pakistan, IT is not being utilized properly. Library practitioners don't have proper training to make a fruitful usage of information technologies. The libraries of Pakistan are not rich with respect to IT-based resources. The problems mentioned by the respondents indicate the need of formal training to use IT and the availability of sufficient funds. Findings of the research are very productive for Chief Librarians, organizational heads, and decision making authorities towards the application of information technology.

Key Words: IT adoption, Barriers to Utilize Technology, Problems Faced by University Librarians

Introduction and Background of the Study:

In Pakistan, information technologies are not fully implemented and utilized. Pakistan is far behind from prosperous nations in terms of the application of technology. The libraries don't have proper IT infrastructure. Information needs of the users can't be fulfilled in a short time. College libraries are still not automated in Pakistan. Most of the library professionals have a traditional mind set-up. They are not innovative. Ramzan (2009) explored the levels of information technology (IT) in Pakistani libraries. He investigated the status of computers, library software, online resources and services being utilized in the libraries of Pakistan. His study revealed that the libraries were lacking in the application of Information Technology. The libraries were not provided proper funds to acquire latest technological tools. The librarians did not have proper access to computers. The study stressed a need to fully automate the libraries.

Information Communication Technologies (ICTs) are not effectively utilized in Pakistan. Library professionals have the shortage of proper funds, organizational support and required skills. They are not inspired to implement latest technologies in their libraries. Shaikh (2009) stated that the institutes of Pakistan were far behind than the institutes of progressive nations. In Pakistan, technology was not properly being implemented and utilized. Pakistani institutes were not facilitated with required IT equipment. There was serious shortage of funds, support, training, positive mind set, passion etc. The study recommended an urgent need to formulate Information Technology Policy at national level so that technology may effectively be applied in the institutes of Pakistan like other leading nations of the world.

Ramzan and Deljit (2010) found that library professionals were not skilled enough to implement emerging technologies in their libraries. They were not properly trained in utilizing ICTs in their organizations. Their role was very passive. They were afraid of taking risks at work-place. In most of the cases, they offered traditional services to their users. They were not involved in decision making policies related to technology. The study recommended a need to make the librarians technologically skilled so that they could operate requisite functions without facing barriers.

In Pakistan, library graduates are not taught practical skills relevant to the field. Consequently, library professionals face problems in the field. They cannot do routine tasks efficiently. They are unable to work in the electronic environment. They cannot perform creative tasks. They are unable to digitize their library's collections. They cannot make an effective utilization of the technology. They like to perform only conventional services. Shafique and Mahmood (2010) stated that there was a huge gap between the curriculum of library schools and the needs of the market. The demands of the market differed from the curriculum contents of the library schools. Graduates were taught theoretical concepts of librarianship.

Library practitioners who do not like technology cannot run their libraries successfully. A creative approach is highly essential for the survival of library professionals in the fast changing highly competitive world. Advanced countries are also advanced in information technology and underdeveloped countries are also poor in technology and information. Technology is changing the routines of libraries very much. Ameen (2011) analyzed the challenges and opportunities for the library practitioners in the age of information and communication technologies. It was shown that many changes had taken place in librarianship due to the advent of information technologies. It had become a dire need of the present age for library practitioners to learn the usage of technology to survive, compete and lead in the information society.

It is very essential to investigate the attitudes of the library practitioners of Pakistan. The benefits of IT can't be achieved unless library professionals implement the latest tools of technologies with a welcoming attitude. Without investigating librarians' problems towards technology, effective measures can't be taken for the prosperity of libraries and for the empowerment of library practitioners.

Review of Literature:

There are problems on the way to implement technologies in libraries. Many research papers have highlighted some of the prominent issues that prevail in the path of information technology. These issues are an obstacle to use technology effectively. Policy makers need to identify these gaps so that they can make sound decisions about the application of emerging

technologies in libraries. Some of the prominent relevant studies are illustrated as following in order to reveal important aspects related to the significance of current study:

Library practitioners usually give priority to conventional services. They don't adopt creative methods to meet the information needs of their users. Uddin (2003) investigated the problems of library practitioners in the universities of Bangladesh. The findings of the study revealed that the government was not investing sufficient budget in the sector of technologies in the libraries. Consequently, the library practitioners suffered. They couldn't implement latest tools in their libraries. They frequently performed conventional services. The study raised the need of effective government support for the proper development of libraries and to encourage library practitioners to utilize emerging technologies effectively.

In Pakistan, librarians are facing manifold problems. They have no proper funds from the government. They have no market-oriented learning from the library schools. They do not find effective administrative support. They have less learning opportunities. Their minds are not IT-oriented. They are unable to adopt emerging technologies in their libraries. Haider (2004) conducted a study to know the technology status in the libraries of Pakistan. The study revealed that there was no proper planning in the libraries of country towards technology. The utility of technology had not been fully realized by the library practitioners, policy makers and the government representatives. Barriers in software and hardware were very common. As a result, satisfactory services to the users couldn't be provided. Library practitioners in the country were not skilled to make a proper utilization of technologies.

Finance is a great problem to use technologies. Without economy, libraries can't afford the purchase of innovative technologies. Money makes an important role in the effective utilization of emerging technologies. Without finance, libraries can't implement technologies. Library practitioners can't implement expensive library software and databases from their organizational allocated funds. They are compelled to perform services by old methods. They can't purchase effective software and databases like the leading libraries of the world. Only some libraries can afford the acquisition of the expensive technologies otherwise libraries lacking in funds can't manage the application of technologies. Library practitioners have to face many

problems due to the lack of finance. They can't take any decisions related to technology implementation independently. Amekuedee (2005) stated that although library practitioners realized the significance of technology yet they could not implement the same due to the lack of finance. They faced many problems. They could not run the set-up of their libraries effectively due to the shortage of required finance. It was revealed that there was also not skilled staff in the libraries. The administration was not supportive in the acquisition of technologies for libraries.

Libraries need to be equipped with the latest tools of technology so that users may find comfort and make completion of their assignments, research projects, theses, dissertations etc. without facing any possible problems. Lack of funds from the government is a major obstacle to implement technology and the availability of effective support from the government can solve the problems of library practitioners. Ani et al (2005) stated that there was an urgent need to allocate more finance by the government for the development of libraries. Promotion of literacy and higher learning were not possible without making libraries progressive. Government support was highly crucial for the prosperity of libraries. Library practitioners could make an effective utilization of technologies with the support of government. The government needed to make a clear policy about the development of libraries.

University Librarians lack expertise of exploring relevant information from internet resources. The library staff is also not usually enough skilled to conduct information literacy programmes to train the users to make an effective utilization of technologies. Lack of finance and technical expertise are major problems that are being faced. Younis (2005) stated that in the university libraries of Jordan, internet was available and latest technologies were also implemented but however there was a passive usage of these technologies by the university community. The users did not feel comfort in using internet and other web-based services. They felt nervousness of using these technologies. They were not enough skilled to utilize internet resources properly. The study recommended an urgent need for continuous learning programmes.

University Librarians are lacking in required equipment of digitization. They find no administrative support too. They are not trained properly. They are willing to attend short term

training programmes however they do not find such opportunities. Suku and Pillai (2005) conducted a study to know the status of issues related to library automation in the university libraries of India. The study found that the library practitioners had no proper skills of utilizing technologies. They could not manage automation projects in an efficient manner. They had no proper planning. They had even no proper funds to accomplish automation projects. They faced problems in automating their collections. They had no proper skills of digitization. The study raised the need of continuous training activities and the allocation of proper finance for libraries so that library professionals could perform well without facing these barriers.

University Librarians in Pakistan are not empowered with IT infrastructure in their libraries. They are not properly trained. They are not encouraged to adopt latest technologies in their libraries. Khan and Bawden (2005) stated that only some libraries in Pakistan were utilizing information and communication technologies. Most of the libraries were not properly equipped with information technologies. There was a serious shortage of IT tools and skilled staff. Libraries were poorly funded related to IT. Library practitioners' requests for the purchase of latest technology were not met. They were not sent to other organizations for attending training programmes. As a result, they remained unaware of latest technologies.

Lack of financial resources is a major hindrance in the application of technology in the libraries. Library practitioners can't adopt latest technologies in their libraries without getting sufficient financial grant. Pors (2005) stated that lack of financial grant from government was a major obstacle for the application of information and communication technologies in libraries. Without proper grants, innovative technologies couldn't be implemented in libraries. Finance was a major factor for the proper utilization of information technology. It was stressed to raise grants for the libraries to promote higher learning and research culture.

University Librarians don't get required assistance from their organizations. They are not included in decision making policies. They are not empowered. They are usually ignored. Sami and Pangannaiah (2006) reviewed literature on techno stress created by improper usage of information technology in libraries. They mentioned that a flood of information has taken place in the present age. Information resources are enormous especially in digital format. It is difficult

for libraries to manage all digital resources without making an effective utilization of emerging information technologies. Males are more expert in using information and communication technologies than females. They are better computer literate. They use technology efficiently to meet information and research needs.

In Pakistan, library practitioners are not trained properly. They are reluctant to change their traditional thinking. They do not have positive attitudes towards technology. They have outdated library systems. They perform only traditional services by using print resources. Ameen (2006) stated the challenges to cope with the emerging technologies. He stated that library professionals were not mentally ready to accept emerging changes in technologies. They were afraid of using new tools of technology. They were not ready to leave old software and switch over to new technology. They did not want to struggle. In most of the cases, they were not passionate towards their jobs. It was recommended to provide training programmes to the working librarians so that they could enable themselves to adopt new technologies without feeling any fear and hesitation.

Funds are not properly allocated for the development of the libraries. Users remain dissatisfied due to traditional services that exist in the libraries. Their information needs are not met not priority. They are not benefitting from the technology fully. Library practitioners don't get proper trainings. They are not fully familiar with IT systems. Haneefa (2007) revealed that the special libraries of India had required tools of technology however they were not satisfying the needs of their users in an efficient style. Users could not find required content quickly. Their information needs were not met. The system of the libraries was not user friendly. There was a serious shortage of skilled staff in the libraries. There were not clear policy about automation and digitization. There was not a flow work of virtual services. Resources were not in organized form. Web-based services were affected due to power failure. Electricity problem was common. Library software was not up to mark. There was improper infrastructure for information technology. The study raised an urgent need to conduct training workshop so that library practitioners might meet the information needs of their users quickly, accurately and efficiently.

In Pakistan, Library practitioners can't play a dynamic role because they don't have required skills related to technology. They also don't get reasonable budget to purchase IT

equipment. They are forced to perform only traditional services. They don't build virtual collections. Haider and Mahmood (2007) described the problems of Pakistan related to information technology applications, poor funding, lack of training, absence of skilled staff, lack of encouragement, resistance towards change etc. They highlighted the need of proper funds and training programmes for the development of libraries and the grooming of library practitioners. It was revealed that without financial grants and required skills, library practitioners couldn't play a leading role and they could be left far behind from computer professionals in the fast age of ever-changing technologies.

University Librarians are not sent to attend IT related training programmes. As a result, they cannot develop IT skills. Their libraries are far behind from the libraries of progressive nations. They can't perform well in their jobs. Fangman (2011) stated that lack of financial grant was a major barrier in the adoption of technology in the libraries. Library professionals wanted to implement latest technology in their libraries however they couldn't apply latest tools and technologies on account of shortage of finance. Library practitioners did not find sufficient financial grants both from the competent authorities of their organizations. They were unable to acquire IT equipment. They were not sent to attend IT related training programmes. Consequently, they could not develop IT skills and their libraries were far behind from the libraries of progressive nations.

Lack of required finance and lack of effective administration support are the major obstacles in the way of the implementation of technologies. Finance is of a major concern for the libraries. The administration is usually not willing to consume a huge amount of budget on the acquisition of technologies for the libraries. Igwe (2013) conducted a study in academic libraries of Nigeria to know the problems being faced in the implementation of technology. The study revealed that libraries had not proper budget for the application of technologies. Library practitioners were willing to adopt technologies in their libraries however they couldn't acquire latest technological tools due to the lack of finance. They couldn't get the support of their administration to acquire latest library software and systems. They were compelled to use old tools of serving the users.

Lack of administrative support is a great obstacle in the application of technology. If there is no proper support from the management of the organizations, then librarians can't make an effective utilization of technology. They can't implement emerging technologies easily. Smith and Hayman (2015) highlighted problems related to information technologies in the university libraries. He inferred that library schools were not teaching market-oriented courses. Consequently, the libraries suffered and the library graduates were unable to perform satisfactory services to the users in the virtual age. Library practitioners needed to be taught technology-based courses so that they might develop required skills and implement latest tools of technology in their work places. A positive administrative support was highly required because most of the administrative authorities were not empowering libraries and library practitioners according to the needs of the present age of information and communication technologies.

Technology has brought a great challenge for the library practitioners. Negative attitude of library practitioners is a great problem in the implementation of latest technologies in the libraries. Librarians can't meet the challenges of the present age with passive attitudes. They can't make their libraries a pleasant place of learning due to their negative behaviors. Attitudes play a great role in the working of libraries. Yuvaraj (2016) stated that the revolution in information technology had provided great challenges for library professionals. Library practitioners with low IT skills could not perform well in the libraries of modern age. He revealed that a negative attitude of library practitioners was a great barrier in the adoption of latest technologies in the libraries. He stressed the need of continuous learning programmes for developing relevant skills among librarians for making an effective utilization of emerging technologies in libraries. It was revealed that without positive attitude, library practitioners could not lead their libraries in an effective style.

Research Objectives:

Following are research objectives of this study:

- To reveal barriers being faced by University Librarians for opting technology in their libraries
- To furnish suggestions for the effective utilization and application of the latest technological tools

Methodology:

It is a social science research that is usually based on interviews, questionnaires and personal visits. This study is based on quantitative research method followed by survey research. The purpose of this study is to know the barriers for opting technology and furnish suggestions for the effective utilization and application of the latest technological tools. A quantitative approach followed by survey research design was opted to complete the study on the technology acceptance behavior of library practitioners. As the researchers wanted to collect data from a large size sample therefore for such kind of studies quantitative research is the most appropriate as many researchers and experts have also stated that quantitative research is the best way to collect data from large population. The population of the study was consisted upon all public and HEC recognized private sector university library professionals of Lahore having at least MLIS qualification. There were 120 working Librarian having at least MLIS degree in the public and private sector universities of Lahore. This information was obtained from the reliable sources like PULISAA list of librarians and Sada-e-Librarian Directory of Pakistani Library Professionals. The sample was based upon all the working librarians of the university libraries of Lahore. Librarians play a leading role in the library. They are the focal persons for the implementation of information technologies in the libraries. They were chosen as subjects of the study keeping in view their leading role. They perform different conventional and unconventional services to satisfy the information needs of users. Their role and services are praise-worthy. They were chosen for this study because they launch emerging technologies in their libraries. Probability technique followed by census sampling was used to collect the data. These libraries were listed in the website of Higher Education Commission of Pakistan. The researchers used the Higher Education Commission of Pakistan's website www.hec.gov.pk/, telephone directories, discussion groups such as PAKLAG, LIBCOOP etc. to find names, postal and e-mail addresses of libraries and librarians. There were 13 public sector universities and 21 private sector universities in Lahore at the list given by Higher Education Commission of Pakistan till March 2020. Lists of Public and Private Sector universities are shown as following:

List of Public Sector Universities/Institutes of Lahore:

Sr. No.	University's Name
1.	Government College University, Lahore
2.	Information Technology University, Lahore
3.	King Edward Medical University, Lahore
4.	Kinnaird College for Women, Lahore
5.	Lahore College for Women University, Lahore
6.	University of Education, Lahore
7.	University of Engineering & Technology, Lahore
8.	University of Health Sciences, Lahore
9.	National College of Arts, Lahore (NCA)
10.	Pakistan Institute of Fashion and Design, Lahore
11.	University of the Punjab, Lahore
12.	University of Veterinary & Animal Sciences, Lahore
13.	Virtual University of Pakistan, Lahore

List of Private Sector Universities/Institutes of Lahore:

Sr. No.	University's Name
1.	Lahore University of Management Sciences (LUMS), Lahore
2.	Beaconhouse National University, Lahore
3.	COMSATS Institute of Information Technology
4.	Forman Christian College, Lahore
5.	Hajvery University, Lahore
6.	Ali Institute of Education
7.	Global Institute, Lahore
8.	Imperial College of Business Studies, Lahore
9.	Institute of Management Sciences, Lahore
10.	Lahore Leads University, Lahore
11.	Lahore School of Economics, Lahore
12.	Lahore Garrison University, Lahore
13.	Minhaj University, Lahore
14.	National College of Business Administration & Economics, Lahore
15.	Nur International University, Lahore
16.	Qarshi University
17.	The Superior College, Lahore
18.	University of Central Punjab, Lahore
19.	University of Lahore, Lahore
20.	University of Management & Technology, Lahore
21.	University of South Asia, Lahore

Survey questionnaire was utilized as an instrument to obtain primary data from the library professionals. Questionnaire is an effective instrument to gather descriptive data for measuring attitudes and for answering the required research questions. It helps to attain information related to different trends from a vast population. Different researchers have also highlighted the significance of questionnaire. They have stated that questionnaire is a primary data collection tool. It saves precious time and economy. It is a cost effective tool. It produces accurate data within short time. Surveys are considered very much useful to gather information about behaviors. Questionnaire is a flexible tool. It has many advantages. It is a fruitful method to get desired data. Keeping in view the effectiveness of questionnaire, the researchers used this tool to gather data. The questionnaire was passed through the process of pre-testing and pilot study to check the validity and reliability of the tool. In constructing the questionnaire, help was taken from the reviewed literature and subject experts. A pilot study to ensure the reliability and validity of the instrument was conducted and overall Cronbach Alpha was 0.82.

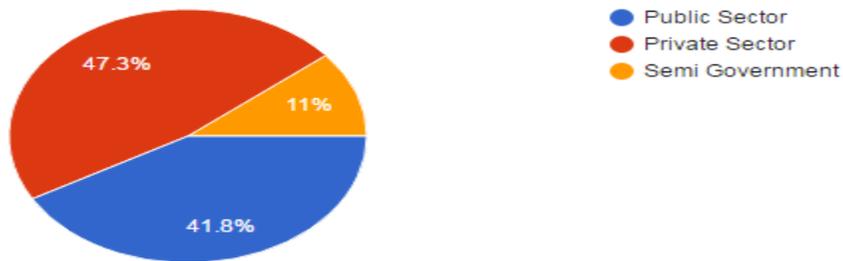
Results, Analysis and Interpretation:

1.0. Respondents' Type of Institute

Respondents were asked to indicate their type of institute. The acquired results highlight that 43 (47.3%) respondents were from Private Sector Institute, 38 (41.8%) belonged to Public Sector Institute, and 10 (11%) were from Semi Government Institute. Figure 1.0 shows the frequency distribution of respondents' type of institute.

Figure 1.0.

Respondents' Type of Institute



Barriers for Utilizing Technology

The participants were asked to reveal barriers that took place for utilizing information technology. These barriers included lack of sufficient budget, inadequate infrastructure, lack of administrative support, lack of innovative attitude of librarians to adopt information technology, lack of dynamic role of associations, lack of innovative leaders in librarianship, improper planning, non-availability of technical support, absence of IT policy, and the lack of training opportunities. The participants were asked to tick different options to reveal barriers on a 'five point likert scale' i.e. 'Strongly Disagree', 'Disagree', 'Neutral', 'Agree' and 'Strongly Agree'(See Table 1.1). Acquired results are analyzed in this section. Mean and Standard Deviation received against each statement have been presented below.

1.1 Respondents' Opinion about Lack of Sufficient Budget

The participants were asked to reveal their opinion about lack of sufficient budget as a barrier for utilizing information technology. Many respondents said that lack of sufficient budget was a great barrier in the effective utilization of information technologies in the libraries. Only few respondents were of the opinion that the lack of sufficient budget was not a problem for an effective utilization of information technologies in the libraries. Mean received about the statement "Lack of sufficient budget" is 3.98 whereas Standard Deviation of the same is 0.906.

1.1.2 Respondents' Opinion about Inadequate IT Infrastructure

The participants were asked to reveal their opinion about inadequate IT infrastructure as a barrier for utilizing information technology. Many respondents said that inadequate was a great barrier in the effective utilization of information technologies in the libraries. Only few respondents were of the view that inadequate IT infrastructure was not a problem for an effective utilization of information technologies in the libraries. Mean received about the statement "Inadequate IT infrastructure" is 3.93 whereas Standard Deviation of the same is 0.867.

1.1.3 Respondents' Opinion about Lack of Administrative Support

The participants were asked to reveal their opinion about lack of administrative support as a barrier for utilizing information technology. Many respondents agreed that lack of administrative support was a great barrier in the effective utilization of information technologies in the libraries. Only few respondents were of the view that the lack of administrative support was not a great problem for an effective utilization of information technologies in the libraries. Mean received about the statement "Lack of administrative support" is 3.85 whereas Standard Deviation of the same is 0.930.

1.1.4 Respondents' Opinion about Lack of administrative support to Adopt Information Technologies

The participants were asked to reveal their opinion about lack of administrative support to adopt information technologies as a barrier for utilizing information technology. Many respondents agreed that lack of administrative support to adopt information technologies was a great barrier in the effective utilization of information technologies in the libraries. Only few respondents were of the view that the lack of administrative support to adopt information technologies was not a great problem for an effective utilization of information technologies in the libraries. Mean received about the statement "Lack of administrative support to adopt Information Technologies" is 3.85 whereas Standard Deviation of the same is 0.930.

1.1.5 Respondents' Opinion about Lack of Dynamic Role of Associations

The participants were asked to reveal their opinion about lack of dynamic role of associations as a barrier for utilizing information technology. Many respondents agreed that lack of dynamic role of associations to adopt information technologies was a great barrier in the effective utilization of information technologies in the libraries. Only few respondents were of the view that the lack of dynamic role of associations was not a great problem for an effective utilization of information technologies in the libraries. Mean received about the statement "Lack of dynamic role of associations" is 3.87 whereas Standard Deviation of the same is 0.991.

1.1.6 Respondents' Opinion about Lack of Innovative Leaders in Librarianship

The participants were asked to reveal their opinion about lack of innovative leaders in librarianship as a barrier for utilizing information technology. Many respondents agreed that lack of innovative leaders in librarianship to adopt information technologies was a great barrier in the effective utilization of information technologies in the libraries. Only few respondents were of the opinion that the lack of innovative leaders in librarianship was not a great problem for an effective utilization of information technologies in the libraries. Mean received about the statement "Lack of innovative leaders in librarianship" is 3.98 whereas Standard Deviation of the same is 0.919.

1.1.7 Respondents' Opinion about Improper Planning

The participants were asked to reveal their opinion about improper planning as a barrier for utilizing information technology. Many respondents agreed that improper planning was a great barrier in the effective utilization of information technologies in the libraries. Only few respondents were of the view that improper planning was not a great problem for an effective utilization of information technologies in the libraries. Mean received about the statement "Improper planning" is 3.88 whereas Standard Deviation of the same is 0.953.

1.1.8 Respondents' Opinion about Non-Availability of Technical Support

The participants were asked to reveal their opinion about non-availability of technical support as a barrier for utilizing information technology. Many respondents agreed that non-availability of technical support was a great barrier in the effective utilization of information

technologies in the libraries. Only few respondents were of the opinion that non-availability of technical support was not a great problem for an effective utilization of information technologies in the libraries. Mean received about the statement “Non-availability of technical support” is 3.95 whereas Standard Deviation of the same is 0.835.

1.1.9. Respondents’ Opinion about Absence of IT Policy

The participants were asked to reveal their opinion about absence of IT policy as a barrier for utilizing information technology. Many respondents agreed that absence of IT policy was a great barrier in the effective utilization of information technologies in the libraries. Only few respondents were of the opinion that absence of IT policy was not a great problem for an effective utilization of information technologies in the libraries. Mean received about the statement “Absence of IT policy” is 3.93 whereas Standard Deviation of the same is 0.929.

1.1.10 Respondents’ Opinion about Lack of Training Opportunities

The participants were asked to reveal their opinion about lack of training opportunities as a barrier for utilizing information technology. Many respondents agreed that lack of training opportunities was a great barrier in the effective utilization of information technologies in the libraries. Only few respondents were of the opinion that the lack of training opportunities was not a great problem for an effective utilization of information technologies in the libraries. Mean received about the statement “Lack of training opportunities” is 3.99 whereas Standard Deviation of the same is 0.863.

Table 1.1

Descriptive Statistics of Barriers for Utilizing Technology

Barriers/Hurdles	N	Mean	Std. Deviation
Lack of sufficient budget for IT resources	91	3.98	.906
Inadequate IT infrastructure	91	3.93	.867
Lack of administrative support	91	3.85	.930
Lack of innovative attitude of librarians to adopt information	91	3.92	.910

technology			
Lack of dynamic role of associations	91	3.87	.991
Lack of innovative leaders in librarianship	91	3.98	.919
Improper planning	91	3.88	.953
Non-availability of technical support	91	3.95	.835
Absence of IT policy	91	3.93	.929
Lack of training opportunities	91	3.99	.863

Note: 5=Strongly Agree, 4=Agree, 3= Neutral, 2=Disagree, 1=Strongly Disagree

Gathered data shows that participants were facing differing problems for utilizing information technologies in their libraries. The most prominent faced barriers by the respondents included lack of sufficient budget for IT resources, inadequate IT infrastructure, Lack of technical assistance, lack of dynamic role by library association and lack of training opportunities.

Conclusion:

Without the implementation of IT in libraries, the future of librarianship is at risk. In the libraries of Pakistan, IT is not being utilized properly. IT infrastructure is not available. Energy crisis is a major problem in Pakistan. Most of the library practitioners were not actively involved in different stages of IT applications. Library practitioners don't have proper training to make a fruitful usage of information technologies. The libraries of Pakistan are not rich regarding IT-based resources. Many library practitioners don't have skills of proper planning. Majority of the participants were facing lack of sufficient budget in libraries and they couldn't implement latest technologies. Most of the libraries have inadequate IT infrastructure. Lack of administrative problem is a major problem in implementing IT in libraries. Lack of innovative attitude of librarians to adopt information technology is a great hurdle in the effective utilization of IT applications. The shortage of innovative leaders in librarianship is also a prominent problem for

utilizing IT. Improper planning creates problems in implementing IT in libraries. Non-availability of technical support is a major problem in the proper utilization of IT. Lack of training opportunities for library professionals is also a great problem in the effective utilization of IT.

Recommendations:

Following recommendations are made for the improvement of IT in the libraries of Pakistan on the basis of conclusions of the study:

1. IT applications should be utilized in libraries to serve the users in an efficient manner.
2. Library practitioners should realize the utility of IT in the present of Information and Communication Technologies (ICTs).
3. IT infrastructure should be available in the libraries.
4. Energy crisis should be resolved so that no problem may take place in the implementation of Information Technology in the libraries.
5. Library practitioners should be actively involved in different stages of IT applications.
6. Library practitioners should have proper training to make a fruitful usage of information technologies.
7. The libraries of Pakistan particularly university level libraries should be rich regarding IT-based resources.
8. Library practitioners should have skills of proper planning.
9. Librarians should take personal interest for utilizing IT in libraries effectively and efficiently.

10. Chief Librarian must take interest towards IT for gaining benefits from emerging technologies.
11. Librarians should possess required skills to provide web based services in the best interests of the organization.
12. Library practitioners should attend refresher courses to grab required skills of IT.
13. Sufficient budget should be allocated to avail technology in libraries.
14. A competent team should be appointed in libraries for accomplishing IT-based projects.
15. Library practitioners should have a positive service attitude to avail the benefits of information technologies.
16. Library professionals should grab proper skills of library automation, database creation, internet search tools, digitization, E-serial management, information literacy, repository building, meta-data standards, and project management.
17. Proper planning should be made for implementing IT in libraries.
18. Technical support should be provided for the proper utilization of IT.
19. IT policy should be formed in libraries.
20. Training opportunities should be provided for library professionals in the effective utilization of IT.

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