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A Research on the Status and Challenges of Library Automation in the University Libraries of Faisalabad Division, Pakistan

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Abstract: *The digital era has brought a revolution in every field of life and has changed traditional practices strongly. The main purpose of the study was to evaluate the status and challenges of library automation in university libraries of Faisalabad Division, Pakistan. The study used a quantitative research method by following the survey technique to collect data from the entire population. All the university libraries of Faisalabad Division were surveyed, and a total of 15 librarians out of a total of 10 universities responded. The other findings depicted that the university library professionals were taking a minimum salary between 31 thousand to 60 thousand while the maximum was above one Lac rupees. The library automation status showed that all the university libraries were partially automated, and KOHA software was used for automation. The main reason behind the usage of KOHA software was that it was open source self-modified library software. The respondents were overall satisfied with the performance of the software. The respondents were supported by their parent organizations, whereas the annual amount of budget was not sufficient. The respondents of the study agreed with the statements that the library software had the necessary features to automate library functions and were also satisfied with the organization's financial support to some extent.*

Introduction

The word automation is derived from the Greek word (automose) which means something that possesses the power to perform some function spontaneously. The term was first introduced by Harder in 1936 in the USA, and ho used it for automatically working the parts during the production process. (Bansode & Viswe, 2015).

The advent of the computer in libraries is considered in the 1960s, but in Pakistan, it was frequently used for automated functions in the libraries during the decade of late years of 1990s, and it was also assumed that in Pakistan ''PASTIC'' Pakistan Scientific and Technological Information Centre was the first institute who used computer for cataloguing the scientific journals (Haider, 1998).

The Automation process caused to increase in the quality, quantity and standard of services in every field of life, but the most affected field seems to be the field of information management. It has raised the expectations of library patrons. Keeping in view the changing scenario, the automatic performance of all the functions within the libraries is direly needed. The purpose of the library is to collect, organize, and provide access to knowledge in all formats, i.e. traditional and digital knowledge organized by the library and information professionals, to manage targeted services programs for educating, informing, promoting learning and entertaining the patrons having diverse characteristics (SZ, Saleem, & Batcha, 2013).

The invention of the moveable printing press caused an explosion of information and proliferation in producing literature in all fields. A huge amount of printed material has become very difficult to manage manually in libraries. It is very difficult for the users to search for their required information resource from an un-numeral heap of collections. In this age of knowledge proliferation, no information seeker has enough time to visit the shelves, find and consult the required information resource. So automation has become an integral necessity to operate library functions properly. Some functions that are needed are transformation from manual to automatic operating systems.

1. Storing process
2. Circulating process
3. Cataloguing and searching required information resource
4. Online Public Access Catalogue (OPAC) is a powerful source of bibliographic information having advanced search and multiple access points.
5. Saves time by providing quick search and saves labour by reducing repetition in cataloguing and indexing services.
6. Enables to the establishment of a powerful network for resource sharing (Das & Chatterjee, 2015).

Automation reduces the unnecessary pressure of workload in performing various activities in the library. It avoids the stress of workload and ensures efficient services by providing a rich bibliographic controlling database at the national and international levels (Umre & Agrawal, 2021).

Statement of the Problem

Automation has become a necessity for all the activities of each kind of library. There are different types of software to run the libraries providing multi-purpose services all over the world. The libraries in developing countries are facing funding problems and constraints relating to automating the functions of the libraries for rendering better services to the users, including the skills and ICT training programs to coop with the rising expectations of the information seekers in the libraries (Anas, Iqbal & Ahmad, 2014).

The information professionals in this modern era of ICT are facing the increasing information needs of scholars in finding required information for research and consultancy work. These needs require fast access to all the published and unpublished information by using various types of methods for storage and retrieval of knowledge resources, and these tasks can not be done properly manually and with traditional methods (Suku & Pillai, 2005).

A huge amount of knowledge in various formats of printed, non-printed, audio-visual, virtual or in any other format is not easy to handle and organize to provide services in an efficient, accurate, faster and effectively manually. In this era of ICT, still traditional manual working system exists in libraries, especially in developing countries. ICT has brought a revolution in all the activities of human society, including libraries and information services. Library automation refers to the involvement of an automatic data processing mechanism to run all the sections in the library activities, i.e. acquisition, cataloguing, circulation, reference and journals section. The term Library Automation refers to the use of computers and the internet within libraries (Uddin, 2009).

There are diverse types of problems and challenges that are affecting the process of automation in the libraries, for example, lack of skills and training in ICT (Information and Communication Technology) infrastructure, shortage of funds and no availability of proper software and required equipment to use in new technology. The studies found in previous existing literature did not cover all the issues affecting the automation process within the libraries. Very few studies were conducted to

explore the status and issues affecting automating the libraries of Pakistan.

This study was conducted to explore the current status of library automation to fill the gap existing in the literature. It is intended to find the librarian's perception of the status of the automation system used to automate the functions of libraries. Moreover, this study highlighted the problems and challenges faced by the librarians while handling the automation process in the libraries of the Faisalabad division.

Research Objectives

This study aims to investigate the status of library automation in the university libraries of the Faisalabad division. This study intended to achieve the following objectives.

1. To know the automation status of university libraries in the Faisalabad division, Pakistan
2. To discover the reasons behind the adoption of library software
3. To investigate the satisfaction of librarians with the attributes of selected library software.
4. To identify the issues and challenges faced by library staff in automating the library.

Research Questions

This study tends to answer the below-mentioned research questions:

1. What is the status of library automation in the university libraries of the Faisalabad division?
2. What are the reasons behind the adoption of library software?
3. How much do the librarians are satisfied with the attribute of adopted library software?
4. Which kinds of issues and challenges are faced by librarians to automate the libraries?

Significance of the Study

The use of computer machines within libraries has totally changed the traditional methods of operating the library. Due to the use of a computer, access to the internet, OPAC, WorldCat, e-books, e-journals, e-databases and other virtual information resources has become possible, and functions of the libraries, I.e. acquisition, circulation, reference services, cataloguing and indexing have been transformed from manual to automated systems (Das & Chatterjee, 2015).

The computerization and automation of library activities depend upon the qualities of the software used for the purpose. Library automation has made it easy and fast the resource sharing services with other libraries. There is a lack of awareness and insufficient training programs to select software to operate the library and meet the needs of the information services. Due to that reason, the librarians and administrators are not confident in deciding which software would be suitable for automation in libraries within an affordable budget (Sharma & Parasar, 2014).

The available literature searches reveal that only a few studies have been conducted on library automation software. It was an acute need to conduct the research study to evaluate the status of librarians' perception of the implementation of different software's in Pakistan. (Sharma & Parasar, 2014).

The current study provides sufficient knowledge about different software's to automate the libraries and help to decide the selection of software in their libraries; therefore, this study is playing a vital role in filling the existing gap within the literature. Moreover, the current study is helpful for librarians and decision-makers to know what common challenges and problems may be occurred while during the implementation of the policies

Literature Review

According to IBM, "Automation is the technical process, use of software to achieve the goals with minimum human efforts as the world automation community has defined automation '' The use of technologies and software to maximize the quality and quantity of the products and services to disseminate the information in an effective and speedy way.

According to Adekanye (2011), the efficiency of software could be evaluated by the following criteria.

Producer/vendor reliability and good reputation based on performance.

- Expandability and flexibility of the software.
- Advanced searching and indexing capabilities.
- The quality of the Input and output interface.
- Security options are provided in the system.
- Good documentation system and use guides.
- Affordable cost.
- Training facility.
- Upgrading facility.
- Corresponding to the Internet.

Anas, Iqbal, and Ahmad (2014) evaluated the impact of library automation on the library rendering services in the academic institutes of Aligarh; the survey research method was used to collect data from the participants. They found that out of four libraries, three libraries were automated partially, while one was automated fully. The study further resulted that regarding the provision of information services, the users were more satisfied with the library's automated functions than with the manual system. Computerization and automation are important applications of ICT which save time and labour and ensure accuracy and easy access to the required information resources.

Egunjobi & Awoyem (2012) state that All routine works and advanced services in the library can be automated by using the KOHA software. KOHA is an open-source software which is found very useful for libraries. This software is able to exchange data with other institutions and provides a facility to import and export library material. Moreover, it provides the facility for indexing and abstracting the articles. Mostly following services are automated in the software: OPAC union cataloguing, Rapid and remote access to the bibliographic and full-text databases, circulation services and record keeping, Acquiring new material, Serials management, use of the internet, digital audio-visual resources. The following services can also be rendered efficiently in an automated functioned library.

1. Online Service
2. Current Awareness Services (CAS),
3. Reference service.
4. Digital, virtual or Printed Indexing,
5. Resource sharing.
6. Stocktaking
7. Selective Dissemination of Information (SDI).

Matonkar & Kumar (2021) commented that automation could improve the library's services for the concerned community. The library staff enjoy working in an environment of automation, and the patrons enjoy services rendered by the library using OPAC instead of a manual catalogue. Library automation is a better solution to the problems of manual processing. It ensures ease of service, ease to use and quick searching for the required item. Automation is time-saving, easy to store and easy to retrieve the material. Regarding the challenges, a major obstacle to establishing a good library automation system is poor funding, mostly in developing countries. Open source software is used to avoid costly, but open source software requires making amendments in it according to the needs of the libraries, which demands skills and time for making amendments.

Academic libraries render information services to teachers, scholars, students and

researchers and are the hubs of teaching and learning activities who search for their required information resources, and if libraries are organized in a traditional way, their precious time goes to waste during search activities. Now we are living in an era of ICT, and computer is performing daily operations of libraries and saving time, avoiding duplication of work, and making library services easier and more efficient. So in this age of information technology, academic libraries are expected to be organized using ICT techniques with automated processes and provide required information more systematically and faster than before.

Library automation is the process of automating the traditional functions/activities of libraries and services, such as collecting, cataloguing, trading, ordering, receiving and other related activities. The current information age requires automation in library processes and services to enhance the efficiency and effectiveness of services provided to information seekers (Howard, Huber, Carter & Moore (2018).
Research Design and Methodology

a) research design
b) the population of the study, the accessible population and the sampling technique used
c) instrument with a description about its validity and reliability
d) data collection procedure
e) data analysis
f) Results, conclusions, recommendations

Research Design

Research design is usually a structure which is based on a strategy to investigate answers to the research questions. The plan usually highlights the complete scheme for the research to be conducted. Commonly used research designs are quantitative research method, qualitative research method, and mixed method.

Research always follows the research questions, which cover the suitable solution to the research problem. A quantitative research design is an inquiry into a social problem based on testing a theory comprising variables, using numerical data and analyzing through applying statistical tests to determine whether the predictive statement of the theory proves true.

Research Methodology

The research methodology used in the current study is quantitative; the survey research method is used as the literature review revealed that many previous studies used the same technique to conduct such type of study.

The Population of the Study: The population comprised all the private and public sector university librarians working in the universities of Faisalabad division.

Sampling Technique: The data is collected from the librarians working in all the university libraries of the Faisalabad division. This type of technique is commonly used in the quantitative type of data where the whole population can be accessed easily.

Survey Instrument: The questionnaire is used as a survey instrument. The self-devised research instrument is further divided into four portions, i.e. (1) demographic portion, (2) questions based on the status of automation in university libraries, (3) Questions determining the satisfaction level concerning software, and (4) challenges and problems faced during the automation process.

Data Analysis

Demographic Information

The demographic information includes age, gender, designation, experience, qualification, marital status and the monthly salary of the respondents. The description of the above-mentioned demographics is explained below, which are analyzed by applying descriptive statistical tests through SPSS.

Age of Respondents

The finding of the study reveals that a total of ten respondents participated in the study. The respondents aged 26-35 years old were n=5, i.e. 50%, the respondents aged 36-45 years old were n=3, i.e. 30%, and the respondents aged 46-55 years old were n=2, i.e. 20% of the total population. The result shows that the large number of respondents that participated in the study was having aged 26-35
years old.

Table 1

Age of Respondents

Age	Frequency	Percent
Below 25 years	0	0
26-35 years old	5	50.0
36-45 years old	3	30.0
46-55 years old	2	20.0
Total	10	100.

Gender of Respondents

The gender of the respondents shows that n=4, i.e. 40% were female, whereas n=6 i.e. 60% were males. The findings show that the majority of the respondents were male.

Table 2

Gender of Respondents

Gender	Frequency	Percent
Female	4	40.0
Male	6	60.0
Total	10	100.0

Designation of Respondents

The respondents were asked about their designation, according to which they were serving in their university libraries. The study showed that n=4, i.e. 40% of respondents were chief librarian/director/manager, n=1, i.e. 10% were deputy librarians, n=1, i.e. 10% were senior librarians, n=3, i.e. 30% were librarians and n=1, i.e. 10% were Assistant librarians. The findings show that the majority of the respondents was chief librarian /director/ manager.

Table 3

Designation of respondents

Designation	Frequency	Percent
Chief Librarian/Director/Manager	4	40.0
Deputy Librarian	1	10.0
Senior Librarian	1	10.0
Librarian	3	30.0
Assistant Librarian	1	10.0
Total	10	100.0

Experience of Respondents

The respondents were asked about their experience. The study reveals that a total of n=1, i.e. 10% had experience below 5 years, n=3, i.e. 30% were having 6-10 Years of experience, n=6, i.e. 60% of respondents had 11-20 years of experience. However, no respondent had experience above 20 years. The findings revealed that the experience of the majority of the respondents was between 11-20years.

Table 4

Experience of Respondents

Experience	Frequency	Percent
Below 5 year	1	10.0
6-10 years	3	30.0
11-20 years	6	60.0
Above 20	0	0
Total	10	100.0

Monthly Salary of Respondents

The current study explored the monthly salary of the respondents. The
The study disclosed that no respondent was taking a salary below Rs.30,000. However, n=3, i.e. 30% were taking a salary between Rs.31,000 - Rs.60,000, and only one n=1, i.e. 10% respondents had a salary between Rs.61,000 -

Rs.1,00,000 while six n=6, i.e. 60% respondents were enjoying monthly salary above Rs.100, 000 which is a handsome amount.

Table 5

Monthly Salary of respondents

Experience	Frequency	Percent
Up to Rs.10,000	0	0
Rs.11000-Rs.30,000	0	0
Rs.31,000 - Rs.60,000	3	30.0
Rs.61,000 - Rs.1,00,000	1	10.0
Above Rs.1,00,000	6	60.0
Total	10	100.0

Marital Status of Respondents

The respondents were asked about their marital status. The results show that n=8, i.e. 80% respondents were married whereas n=2, i.e. 20% respondents were unmarried. The results depict that a large of respondents were married.

Table 6

Marital Status of respondents

Gender	Frequency	Percent
Married	8	80.0
Single	2	20.0
Total	10	100.0

Satisfaction Level with Library Software being Used

This part of the study shows the satisfaction level of respondents regarding the Library software is being used in their library. The different statements were asked by the respondents to find their satisfaction level. The results of the finding are described as below:

Necessary and required Features of Current Software

The respondents were asked if the current software had all of the necessary and required features. The finding showed that n=1, i.e. 10% of respondents responded that they strongly disagreed with the statement, n=2, i.e. 20% of respondents responded that they disagree with the statement, n=1, i.e. 10% of respondents responded that their view was neutral, n=3, i.e. 30% of respondents responded that they agree, and n=3, i.e. 30% of respondents responded that they strongly agreed with the statement. The findings showed that a large number of respondents agreed and strongly agreed with the statement that current software had all of the necessary and required features.

Table 7

Necessary and required features of current software

Scale	Frequency	Percent
Strongly Disagree	1	10.0
Disagree	2	20.0
Neutral	1	10.0
Agree	3	30.0
Strongly Agree	3	30.0
Total	10	100.0

Performance of the software

The respondents were asked about the performance of the software concerning speed, searching facility and customizability. The finding showed that n=2, i.e. 20% Respondents responded that they strongly disagreed with the statement, n=0, i.e. 0% Respondents responded that they disagreed with the statement, n=3, i.e. 30% of respondents responded that their view was neutral; n =3, i.e. 30% of respondents responded that they agreed, and n=2, i.e. 20% of respondents responded that they strongly agreed with the statement. The findings showed that the majority of the respondents agreed that the software was showing good performance in speed, searching facility and customizability.

Table 8

Good performance in speed, searching facility and customizability

Scale	Frequency	Percent
Strongly Disagree	2	20.0
Disagree	0	0

Neutral	3	30.0
Agree	3	30.0
Strongly Agree	2	20.0
Total	10	100.0

Support of the Organization

The respondents were asked whether the administration of the organization has no interest in library automation. The findings showed that n=2, i.e. 20% of respondents strongly agreed with the statement; n=4, i.e. 40% of respondents agreed with the statement; n=1, i.e. 10% of respondents expressed their opinion as neutral; however, n=2, 20% respondents disagreed while n=1, i.e. 10% respondents showed that they were strongly disagreed with the statement. The findings uncovered that the majority of the respondents agreed that the administration of the organization has no interest in library automation.

Discussions

The respondents of the study agreed with the statements that the library. The software had necessary and required features that were economical to purchase and easy in Maintenance, user-friendly, availability of web 2.0 features, provide OPAC facility to exchange (import/export) data, basic characteristics like security, online help, and up. To date, the software they use has features to automate all the library functions such as administration, reports, acquisition, classification, cataloguing, circulation, reference services, collection and membership records by giving good performance in speed, searching facility and customizability. Moreover, the respondents were satisfied with Performance of software they used to automate their library. However, the respondents Disagreed that their software was easy to install, didn't provide advanced search. The facility, does not provide multilingual and MARC 21 support.

The study used a quantitative research method followed by a survey research technique. The census-based technique was used to collect data from the entire population. All the university libraries of the Faisalabad division were surveyed, which resulted in a total of 10 universities participating in the study. However, two universities that are Allama Iqbal Open University and Virtual university, had no libraries in their Faisalabad division campuses.

The demographic findings showed that the majority of the respondents were male, aged from 26-35 years old, with possessing professional experience between 11-20 years. The majority of the respondents was chief librarian /director/ manager with having salary above one lac. The majority of the respondents were married; however, the majority of them possessed MS/M. Phil's degree in (LIS/LIM) is their qualification to serve in their university libraries. The library automation status showed that the libraries were partially automated and frequently.The software used for automation was KOHA. The main reason behind selecting the software was that it was open source and self-modified according to the requirements of the library. The respondents agreed with the statement that they were supported by their parent organization; however, the provided amount in the budget was not sufficient to meet the needs of the library properly. The majority of the respondents were provided partial training about the usage of the software.

Conclusions

The conclusions regarding the four questions of the research study are as follows:

1. The study concluded that the libraries were partially automated using different library software for automation, but most of the respondent libraries used KOHA software to automate the library activities in the university libraries of the Faisalabad division.
2. The reasons behind the adoption of library software are its international computer

format MARC 21 which allows internet and competency to import, export and exchange data with other institutions. Online help, up-to-date features to automate all the library functions such as administration, reports, acquisition, classification, cataloguing, circulation, reference services, collection and membership records by giving good performance in speed with advanced searching facilities.

3 The respondents were satisfied with the performance of the software they used to automate their library. They agreed that their software provided advanced search facilities provided multilingual approaches and MARC 21 format supported; however, the respondents disagreed that their software was easy to install.

4 Regarding the issue and challenges which are faced by the librarians to automate the libraries, the majority of the respondents stated that they were provided partial training about the usage of software, but it was not sufficient, and they felt difficulty in installing the open-source library software KOHA to automate the functions of the library. The study uncovered a shortage of staff in the libraries; furthermore, they pointed out that the provided budget amount by the parent organization was not sufficient and could not fulfil the needs relevant to the automation process of the libraries. A big problem was also highlighted in that most of the universities had no concern about automating their libraries.

Recommendations

1. The following recommendations are suggested to uplift the current situation of university libraries for better services.
2. There is a need to hire qualified professional and para-professional staff to complete the library automation task.
3. Electronic gadgets should be provided in the library to utilize virtual and digital information resources.
4. Library automation policies should be introduced in the library.
5. The library budget should be increased for the development of library automation to provide digital services to library users efficiently.
6. The university librarians should collaborate with each other in organizing and automating, and rendering services to the library users.
7. The services in the university libraries should be more user-friendly and client-centred.
8. The libraries should manage to conduct seminars to provide awareness about the automation process among the professional staff to meet the challenges of the digital environment.

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