Abstract

Information technology has revolutionised all walks of life and like any other profession, libraries are also at the threshold of this technology era. Libraries harness these technologies for the purpose of effective and efficient operations and services to serve their users in a better way. In this regard, Indian academic libraries are witnessing tremendous transition from manual system of access to automated system of access to information. As a result, the automation in Indian academic libraries has become the top most priority. Nevertheless, the selection of appropriate software package for effectively automating library operations and services has been a challenging task for librarians in India. Even though, a number of library softwares packages were developed in this direction by research and development libraries in India, however, only few of those softwares survived, while the rest did not last long due to their shortcomings in compatibility with the international standards.

Against this background, a number of Indian libraries switched over to foreign software packages to rise above these shortcomings. Notably, the research and development libraries and large academic libraries in India are using standard library management softwares to enhance their operations and services. However, the condition of services and operations of most of the academic libraries is not encouraging. In this backdrop, the initiative of UGC to provide adequate grants and development of SOUL software by INFLIBNET for automating College and University libraries paved the way to enhance their operations and services. It may, however, be noted here that a lot of further development is required to improve the present state of automated library system of Indian libraries for the effective utilization of their valuable resources. Besides this, the implementation of integrated library software also demands detailed training particularly for preparing library staff for thorough change in their work environment.

The term ‘Library automation’ refers to a technical phenomenon of computerizing or automating the traditional library activities and services such
as acquisition; cataloguing; circulation; serial control; information services and other related activities.

In this backdrop, the researcher has described the development of library automation in detail from its historic time to modern period. The landmark developments have been discussed both at Indian as well as at global level. Initially, library automation received cold response in Indian academic libraries. However, with the falling price of hardware’s, easy availability of softwares and ever-increasing interest among the library professionals, automation in academic libraries picked up the momentum. The present research effort is an attempt to examine the current performance of library softwares and automated library system of the central libraries of two institutes of national importance and one of the first ISO Certified University libraries in India. The study focuses on the software packages used by the select libraries, their awareness among the users and the extent of their use by the users of surveyed libraries. The study also highlights the usage of OPAC and its search techniques. Furthermore, the retrieval system and the satisfaction of users with the retrieval system of the select libraries have also been discussed. Moreover, the expertise of library staff in managing the overall automated library system has also been described. The present research thesis is perhaps the first of its kind between the central libraries of IITs and Universities that describes all the modules of the software used by the select libraries in detail.

An attempt has also made to find out the satisfaction level of users with the overall services provided by the automated library system of their respective libraries. It is worth mentioning here, that the study has also assessed the effectiveness and satisfaction of library staff with the softwares used by their libraries for the automating their operations and services to serve the users in a better and efficient way.

**Scope of the Study**
Since, it was not possible to cover all the Universities or all IIT’s in the present work, the researcher has therefore chosen a topic covering IIT Delhi, IIT...
Kanpur and Kashmir University in this study. An attempt has been made to carry out an in-depth study of the above mentioned institutes library.

**Objectives of the Study**

The present research effort entitled Usage and Effectiveness of different Software Packages is an attempt to critically examine the status of library softwares, OPAC, retrieval system and expertise of library staff with respect to satisfaction of users on the automated library system of select libraries. The study has been undertaken with the following objectives in mind:

1. To provide a critical analysis of library softwares used by the select libraries and their operations to make specific suggestions for improvement.
2. To examine the status and application of various modules of library automation software in the surveyed libraries.
3. To investigate the staff competency in handling different applications of library software in Central Library, IIT Delhi; P. K. Kelkar Library, IIT Kanpur and Allama Iqbal Library, Kashmir University.
4. To assess the impact of training provided by the vendors on the staff of select libraries.
5. To highlight the role of library software in the enhancement of services of libraries under study.
6. To investigate the role of OPAC in the increased usage of library resources in the surveyed libraries.
7. To examine the satisfaction level of users with the overall services provided through automated library system.
8. To suggest the scope of improvement in library services through library automation software.

**Hypotheses**

To study the Usage and Effectiveness of different Software Packages in the Libraries of Kashmir University, IIT Delhi and IIT Kanpur, the following hypotheses are formulated to be tested.
1. There is a significant difference in the awareness of library softwares among the users of IITs and Kashmir University.
2. The usage of OPAC is higher in the libraries of IITs than in the library of Kashmir University.
3. The users of IITs are more well-versed with the advanced search techniques in OPAC than the users of Kashmir University.
4. The library staff in IITs is more equipped in handling the software than their counterparts in Kashmir University.
5. All the surveyed libraries are using all the modules available in LibSys and Virtua softwares respectively.
6. The user satisfaction level with respect to the overall services of automated library system is higher in IITs than in Kashmir University.
7. More training is required by software vendors for the effective usage of all modules of both the softwares i.e. LibSys and Virtua.

Of the seven formulated hypotheses, five are proved, while two are rejected.

**Methodology**

Methodology has its own connotation and significance in any research investigation, because objectivity in any research effort cannot be attained unless it is conducted in a systematic and planned manner. The intellectual investigation involves careful and appropriate execution of research design, use of standardized tools and tests, identifying adequate sample by using appropriate sampling techniques. Since, the present study is descriptive in nature, therefore Survey method was adopted for the present work. There are three commonly used techniques for gathering the data in survey research; the Questionnaire method, the Interview method and the Observational method. Notably, the investigator has used questionnaire and interview method for collecting the data for present study. The survey has been so planned that within the select libraries, both library staff and library users are taken into consideration. For this purpose, a well designed set of two questionnaires were administered among the staff and users for data collection.
**Population and Sampling**
The present study has been conducted among the library staff and users of Central Library, IIT Delhi; P. K. Kelkar Library, IIT Kanpur and Allama Iqbal Library, Kashmir University. As the population of staff in the select libraries is small, therefore Census method was adopted. However in case of users, the researcher adopted random sampling method for data collection. A sample of 527, 315 and 555 out of total population of 5269, 3143 and 5550 users are respectively selected in all the select libraries. The response rate from the users of select libraries is found to be 89.75%, 92.38% and 90.63% respectively.

**Data Collection and Analysis**
The investigator personally visited the select libraries and approached the librarians for seeking permission to collect the necessary data. Well designed questionnaires were administered to library staff and users of the select libraries. The filled-in questionnaires were collected followed by an informal interview with both staff and users to clear the ambiguities, if any.

The collected data was analyzed and tabulated as per the responses sought in the filled-in questionnaires. Notably, MS-Excel package and Chi-Square statistical test has been used for proving the significant difference and validity of data. Besides above, graphs, charts and Cross tabulation are used to measure the relationship between variables wherever the need was felt.

**Standard followed**
American Psychological Association (APA, 2010) format has been followed for providing bibliographical references. The two examples of this standard are mentioned as under:


**Major Findings of the Study**
1. Acquisition is the core activity in any library which requires a good knowledge of librarianship. Notably, the library staff faces difficulties in
monitoring growing collections, preparing and updating supplier list, sending reminders and management of budget in manual acquisition. Of all the surveyed libraries, staff has found a complete solution to these problems in automated acquisition system. The staff of these libraries have revealed that they have never imagined that their task would be so simple with the help of library automation software. The results of the present work also substantiate the study conducted by (Rajgopalan, 1981).

2. In India, a large number of academic and research libraries have implemented automation process. However, none of the libraries including those which are considered as champions and leaders in library automation such as Aligarh Muslim University, Jamia Millia Islamia, Jawaharlal Nehru University, Ranbaxy, Torment Pharmaceutical Company, etc. have become the members of OCLC. Perhaps they are not aware that to what extent the membership of OCLC will benefit the staff of cataloguing division. It is noteworthy to mention here that among three surveyed libraries, IIT Delhi and Kashmir University have become the members of OCLC. The staff of these two libraries have reported that copy cataloguing utility through OCLC database have made cataloguing very economical. This finding substantiates the study conducted by (Hirshon, 1988) related to OCLC services. On contrary, cataloguing and its associated processes such as classification and subject indexing have been reported the most Cost-effective processes in IIT Kanpur library.

3. One of the major emphases of the use of the use of latest technology is to allow library users to go for self Check-out and Check-in. The use of this technology is gradually becoming very popular in the western world; nevertheless, it is less seen among the automated libraries of India. A wonderful finding of the present work is that Kashmir University is leading with this facility of self Check-out and Check-in as the library has installed all the infrastructural facilities and accessories
needed for the above mentioned facility. On contrary, IITs including the two surveyed ones which are considered as the premier institutes much ahead in reputation than a State University has failed to provide RFID solutions in their libraries. One research study indicates that user community prefer using self service process because they can control the services better as suggested by the data related to self Check-out and Check-in facility of Kashmir University.

4. One of the wonderful findings of the present study suggests that automation thrilled more to the users in Kashmir University in comparison to both the IITs. Table-3 has shown that more than 90% of the users visit the library in Kashmir University either daily or weekly or fortnightly. The corresponding figures are 85% for both the surveyed IIT libraries.

Suggestions

On the basis of findings of the study undertaken, the following suggestions may be made to the select libraries in particular and other libraries in general for implementing successful integrated library system:

1. The libraries of IITs are financially sound, but adequate funds should be provided to academic libraries, so that they can procure adequate computer terminals in order to encourage the users towards automated access and retrieval system.

2. It is suggested that the library staff should periodically undergo for detailed training courses/ workshops on application of information technology in general and softwares in particular to manage the automated library systems effectively.

3. RFID Technology for self Check-out and Check-in is a common feature in the libraries of developed world. However, the libraries of both the surveyed IITs have not installed this technology. Therefore, it becomes imperative for the librarians to enhance the circulation system and satisfaction of users by implementing self Check-out and Check-in through RFID technology.
Scope for further Research
During the course of research, the researcher realized that similar studies may be carried out on other types of libraries and therefore recommended the following topics for further research
1. A similar study can be conducted for all the established IITs in India.
2. Yet another similar study may be undertaken covering the selected Central Universities of India.
3. A similar study may be undertaken for IIMs (Indian Institute of Management) which carry the same reputation in India as that of IITs.

Organization of the Thesis
The entire research thesis is categorized into under-mentioned seven chapters:

CHAPTER-1: Introduction
This chapter introduces the whole study undertaken. The chapter starts with the introduction explaining the background behind the research. It discusses the genesis of library automation, definitions, purpose, objectives, hypothesis, scope and limitation of the study. The development of automation in US, Europe and developing countries are also discussed here. In addition, it also explains the popularly used library software packages in India.

CHAPTER-2: Review of Related Literature
An extensive study of international literature related to library automation and library software packages in both developed as well as in developing countries was thoroughly carried out. This chapter reviews the literature that was scanned to study the various trends of library automation, library software packages and integrated library systems. It deals with the various aspects of library automation with respect to Acquisition, Cataloguing, Circulation, Periodical control, and OPAC, etc.

CHAPTER-3: Institutional Profile
This chapter discusses the detailed account of three select libraries with respect to their history, collection, membership, and services. The broad objective of these libraries is to make better and effective utilization of their resources by enhancing the operations and services of their automated library system.
CHAPTER-4: Methodology
In this chapter, a detailed discussion has been carried out on how sampling has been done; data has been collected, different techniques and methods that have been used for data collection and the problems that were faced during the data collection. In the end, discussion on data analysis and interpretation has also been described.

CHAPTER-5: Staff perspective of Library Software
In this chapter, the investigator has analyzed and interpreted the data obtained from the library staff of all the surveyed libraries. Notably, the different modules of LibSys and Virtua software packages that are in operation in the surveyed libraries have been discussed in a broader way.

CHAPTER-6: Opinion of Users about Automation
Here the analysis and interpretation of data obtained from the users of select libraries are discussed in a broader way. Various tables, graphs and figures have been drawn to explain the different aspects and activities of central libraries of IIT Delhi, IIT Kanpur and Kashmir University related to library automation. In addition, users’ response regarding the usage of library software and OPAC in particular has also been analyzed in detail.

CHAPTER-7: Findings and Conclusion
This chapter gives the summary of major findings and suggestions recommended for the improvement of status of library automation in the central libraries of IIT Delhi, IIT Kanpur and Kashmir University. The findings are deduced from the study undertaken and the one based from the results of data collected. The last part of the thesis will contain bibliography and appendices. In appendix-I, the questionnaire administered to library staff and in appendix-II the questionnaire administered to users of the surveyed libraries is given.