ORIGINAL ARTICLE

STATUS OF INFORMATION COMMUNICATION TECHNOLOGY IN THE CENTRAL UNIVERSITY LIBRARIES OF UTTAR PRADESH: A STUDY

Salma Khan and J. Dominic
IFTM University, Lodhipur Rajput, Delhi Road, Moradabad
Karunya University, Karunya Nagar, Coimbatore.

ABSTRACT:

The study was carried in the central university libraries of Uttar Pradesh. To study the status of Information Communication technology in the central university libraries of Uttar Pradesh. It was analysed that nearly all the university libraries under study is automated and majority of them are using commercial software for automation.

KEYWORDS: Information Communication Technology, Hardware, software, Automation, Central University.

INTRODUCTION

Technology may be regarded as the application science to useful ends. During the passage of years several types of technologies have evolved. Information and Communication Technology (ICT) is the biggest achievement in the evolution of mankind ICT is any system designed to gather. Process, or distribute information or it is the science an skill of all aspects of computing, data storage, and communication. ICT may be any combination of tools and procedures that facilitate the generation, acquisition, storage, organisation, retrieval, searching, viewing, updating and transmission of information using electronic means. The tools used in ICT include purpose-built computer programs, databases, communication networks, analysis and design methods, programming languages, artificial intelligence, robotics, knowledge bases, etc. ICT has long standing influence in almost all areas of human activity. It acts as a catalyst in all spheres of science and technology.

1.1 ADVANTAGES OF ICT

To help the library professionals to free from routine, repetitive and uninteresting jobs which can be done using computer and telecommunication technology.

- To facilitate cooperation and resources sharing through library networks and library consortia.
- To introduce new resources and services and revitalise existing ones.
- To allow easy integration of various library systems and operations.

- To facilitate faster information communications.
- To help increase the quality and range of services.
- To facilitate easy and wider access to all kinds of information sources.
- To help to increase efficiency and effectiveness in library operations.
- To save time, space, energy and resources.
- To provide online search and access of information.
- To develop/upgrade the skills and abilities if library professionals.
- To facilitate digitization of information for preservation and for space saving.
- To improve the cost-effectiveness of library resources and services.
- To provide marketing opportunity of library services.
- To provide remote access to users.
- To provide round-the-clock access to users.
- To provide access to unlimited information from different sources.
- To provide more up-to date information.
- To provide information flexibility to be used by any individual according to his or her requirements.
- To facilitate the reformatting and combining of data from different sources; and
- To save and/or generate money.

1.2 BARRIERS OF ICT

The problems in the application of ICT in libraries or for its slow progress are many. The following may be considered important among them:

- Insufficient funds
- Inadequate ICT infrastructure
- Inadequately trained library professionals
- Lack of initiative on the part of the library professionals about the potential of ICT.
- Lack of co-ordination among library professionals
- Lack of ICT knowledge on the part of users
- Lack of interest on the part of users
- Lack of long-term approach towards ICT application.
- Inadequate publicity for ICT based resources and services.
- Discouraging attitude of library professionals towards their users.

2. NEED AND PURPOSE OF THE STUDY

The aim of the research study is to investigate the status of information and communication Technologies in University Libraries of Uttar Pradesh. However, the specific objectives identified are:

1. To assess the current state-of-the-art information and communication technology infrastructure in Central University Libraries of Uttar Pradesh.

2. To identify and evaluate contemporary application Technologies in Central University Libraries of Uttar Pradesh.

3.To compare the information and communication Technology status among the Central University Libraries of Uttar Pradesh.

4.To identify and analyse the specific factors that prompted or hindered to assess application of information and communication in Central University Libraries of Uttar Pradesh.

5.To ascertain the ICT skills and expertise of the library professionals and examine its application in information handling process.

6.To study the facilities of training information and communication technologies in University Libraries of Uttar Pradesh.

7.To assess the attitude of the librarians and users towards the application of information and communication technologies in University Libraries of Uttar Pradesh.

8.To suggest measures for improvement of existing resources and services and implementation of information and communication Technologies.

3. LITERATURE REVIEW

Akinfolarin, W.A. (1998) provides a report of Automation at Adeyemi College of Education Library and print out the problems which are faced during the automatism and proposed the solutions to it. He pointed that automatism project is likely to be successful if at least our staff member has an educational qualification in computer science, management of the college must take an interest in the automatism process and adequate financial and material support must be given. Saarti, Jarmo (2003) conducted a survey of the cost and types of the library automation systems in use in public libraries in Finland . The result show that almost all of the public libraries have some land of library automatism system and that 80% of than are already offering services via the internet. The cost of establishing public library automatism have been approximately 16-8 million Euros with annual operating cost of about 5-7 million Euros. The labour costs used in building and maintaining library automatism systems had been poorly monitored in the libraries Jayaprakash, M. and Balasubramani, R (2011), a study was conducted to find out Automation in university libraries in Tamil Nadu For efficient functioning of the library and saving the library users time, automation of library operations and services is essential. The study highlight the problems of automation faced by staff in implanting automation.

Mal, Bidyut K. and Bajpai, R. P. (2011), Major initiative of digital library undertaken in India is discussed in this paper. Library scenario is changing rapidly with the advent of digital technology and internet connectivity, to fulfil the user's needs. Government of India has undertaken many digital library initiatives to preserve the art, culture and heritage of our country.

Neeraj and Shukla, Shiva Kanaujia (2011) The electronic journal aspects in an academic environment is discuss in this paper. E-journals are helping research community by making a smooth path of research, in managing them librarians face hardship. Study was conducted in CCS University to study the applications of e-journals. It also focus on different aspects like financial constraints and technological achievement.

Singh, K. P., Bebi and Gulati, Dipti (2011) in this paper discuss the technological march from Web 1.0 to 3.0 for managing the web information, and concept of web 1.0 to 3.0 and shift from web 1.0 to 3.0. A comparative study has been drawn on these three concept on certain parameters such a technology, advancement, networking, users etc.

4. SCOPE OF THE STUDY

Uttar Pradesh is a biggest province of India having maximum number of general, agriculture, technical and other professional universities. The researcher has selected four universities libraries namely.

- Baba Sahab Bheema Rao Ambedkar University, Lucknow (BSBRAU)
- University of Allahabad , Allahabad (UA)
- Aligarh Muslim University, Aligarh (AMU)
- Banaras Hindu University, Varanasi (BHU)

5. METHODOLOGY

The data and information collected were examined with special reference to impact of information communication technology. Questionnaire method was used to collect the data. The investigator went directly and collects the data. All the collected data have been used for analysis. The data collected through the questionnaire was analyzed by employing the following statistical techniques. The statistical analysis of the data for the present study was done by applying (i) Simple percentage (ii) Chi-Square

6. ANALYSIS AND INTERPRETATION

Uttar Pradesh is a biggest province of India having maximum number of general, agriculture, technical and other professional universities. The researcher has selected four central universities libraries.

6.1 Collections

Table 6.1 Documents collection of central university libraries under study

Document	AMU	BSBRAU	BHU	U A	Total
Books	Yes	Yes	Yes	Yes	4(100%)
Journals	Yes	Yes	Yes	Yes	4(100%)
E-Journals	Yes	No	Yes	Yes	3 (75%)
E-Books	Yes	No	Yes	Yes	3(75%)
Cd-Rom	Yes	Yes	Yes	Yes	4(100%)
Floppies	Yes	Yes	Yes	No	3(75%)
Theses And Dissertation	Yes	Yes	Yes	Yes	4(100%)
Conference Proceedings	Yes	No	Yes	Yes	3(75%)
Video Films	Yes	Yes	Yes	Yes	4(100%)
Microfilms Or Microfinch	Yes	No	Yes	Yes	3(75%)
Dvds	Yes	Yes	Yes	Yes	4(100%)
On-Line-Databases	Yes	No	Yes	Yes	3(75%)
Web-Opac	Yes	No	Yes	Yes	3(75%)
Manuscript	Yes	No	Yes	Yes	3(75%)
Any Other Type Of Collection	Yes	No	Yes	Yes	3(75%)

Library collection forms a sound foundation for efficient services. It is observed that all the libraries (100%) have book and periodicals. E-Journals , E-books , Conference Proceedings,

Microfilms Or Micro-finch, On-Line-Databases, Web-Opac and Manuscript are available in nearly all the libraries except Baba Sahab Bheema Rao Ambedkar University. Floppies are not available in the University of Allahabad.

6.2 Hardware

Table 6.2 Hardware Available in Libraries

Document	AMU	BSBRAU	BHU	U A
Computer	80	7	50	90
Servers	1	0	1	1
Printers	15	3	10	7
Overhead Projectors	1	1	1	1
multimedia projector		1	1	1
Slide Projectors	1	1	1	1
TV , VCR, DVd	1	0	1	1
Scanners	5	1	4	5
Barcode Reader	5	0	5	0
DVD , CD Writer	80	7	50	90

It is analyzed that all the university libraries have computers, printers, Scanner, Audio Video devices, CD, DVD writers, over head projectors, slide, and multimedia projectors are available in all the libraries under study. Whereas Server is not available in one of the university library. Barcode reader is available in only two libraries.

6.3 Software

Table 6.3 Software Available in Libraries

Document	AMU	BSBRAU	BHU	U A	Total
Library Automation	Yes	No	Yes	Yes	3(75%)
Operating System Software	Yes	No	Yes	Yes	3(75%)
Unix	No	No	No	Yes	1(25%)
Window	Yes	Yes	Yes	Yes	4(100%)
Digital library software	Yes	No	Yes	Yes	3(75%)
Anti Virus software	Yes	Yes	Yes	Yes	4(100%)
CD- Net Management	Yes	No	Yes	Yes	3(75%)

On the basis of above table it is analysed that nearly (75%) of the university libraries possess library automation software, operating system software, Digital library software and CD-Net management software. Operating system software Window and antivirus software is available in all (100%) libraries. Unix operating software is available in only one library.

6.4 Status of Automation

Table 6.4 Automation in Libraries

		AMU	BSBRAU	BHU	U A	Total
Library Automation	Available	Yes	No	Yes	Yes	3(75%)
Status	Partial	Yes	No	Yes	Yes	3(75%)
	Not Available	No	Yes	No	No	3(25%)
Software available	Alice for Window	Yes	No	Yes	No	2(50%)
	Libsys	No	No	No	Yes	1(25%)
Type of software	Commercial	Yes	No	Yes	Yes	3(75%)
	Not Available	No	Yes	No	No	3(25%)

It is analysed that Library automation is available in (75%) of the libraries under study and all the libraries are partially automated. All the automated libraries under study are using commercial software and majority of the libraries are using Alice for Window software for automation and Libsys is used by University of Allahabad. Automation is not available in only one university under study.

6.5 Application of Information Communication Technology

Table 6.5 Information Communication Technology

ICT	AMU	BSBRAU	BHU	U A	Total
Barcode technology	Yes	No	Yes	No	2 (50%)
Smart card technology	No	No	No	No	4(100%)
Telephone or fax facility	Yes	Yes	Yes	Yes	4 (100%)

Telephone or fax facility is used in all the libraries. Barcode technology is used in 2(50%) of the Central university libraries of Uttar Pradesh under study. Smart card technology is not available in all the library under study.

6.6 Library has Independent Library Network or Institutional Network

Table 6.6 Institutional Network

Network	AMU	BSBRAU	BHU	U A	Total
Part of institutional network	Yes	Yes	Yes	Yes	4 (100%)

All the Central university libraries under study are the part of the institutional network. None of the library has independent network.

6.7 Training user in ICT based

Table 6.7 Training users in ICT Resources & Services

Training	AMU	BSBRAU	BHU	U A	Chi-Square
ICT based Resources & Services	Yes	No	Yes	Yes	.261
Computer & Network	Yes	No	Yes	Yes	.261
Internet Services, Tools, Utilities	Yes	No	Yes	Yes	.261
CD-rom searching	Yes	No	Yes	Yes	.261

Chi-Square Tests
Chi-Square at 3 df and 5 level of Significance is 4.000
Hypotheses = Accepted

Libraries of central universities (75%) under study provide training to users in ICT based Resources and Services, Computer & Networks, Internet Services tools utilities, CD rom searching. One library (25%) do not provide training to users in ICT based resources & services.

Chi-square test is carried out to test that all the central university libraries under study are not providing training to its users in ICT based services & resources. The computed Value of ë2 is .261, which is less than table value (4.000) at 3 degree of freedom and 0.5 per cent level of significance. Hence it can be concluded that all the university libraries under study are not providing training to its users in ICT based resources & service to its users. Hypothesis is accepted.

6.8 Attitude toward ICT

Table 6.8 Attitude toward ICT

Information Communication Technology	AMU	BSBRAU	BHU	U A	Total
modernize the library activities	Yes	Yes	Yes	Yes	4 (100%)
render effective services to the users	Yes	Yes	Yes	Yes	4 (100%)
keep the users up to date	Yes	Yes	Yes	Yes	4 (100%)
improve the access to collection	Yes	Yes	Yes	No	3 (75%)
improve quality of the existing services	Yes	Yes	Yes	No	3 (75%)
reduce routine & time consuming clerical work	Yes	Yes	Yes	Yes	4 (100%)
improve cooperation & resource sharing among the libraries	Yes	Yes	Yes	Yes	4 (100%)
easily participate and utilize national and international computer network	Yes	Yes	Yes	Yes	4 (100%)
reduces the number of library staff required	Yes	Yes	Yes	Yes	4 (100%)
improve prestige & visibility of library	Yes	Yes	Yes	Yes	4 (100%)
provide competitive & strategic information needed for research & development	Yes	Yes	Yes	No	3 (75%)

Central University Libraries (100%) under study responded that Information Communication Technology modernize the library activities, render effective services to the users, keep the users up to date, reduce routine & time consuming clerical work, improve cooperation & resource sharing among the libraries, easily participate and utilize national and international computer network, reduces the number of library staff required, improve prestige & visibility of library.

6.9 Barriers of ICT

Table 6.9 Barriers of ICT applications in Library

Barriers	AMU	BSBRAU	BHU	U A	Total
Insufficient fund	No	No	No	No	4(100%)
Inadequate ICT infrastructure	No	Yes	No	Yes	2(50%)
Lack of interest of library professional	No	No	No	Yes	1(25%)
Inadequate trained library professional	No	Yes	Yes	Yes	3(75%)
Lack of initiation on the part of library professionals	No	No	No	Yes	1(25%)
Lack of Awareness of library professionals about IT	Yes	No	No	Yes	2(50%)
Lack of ICT knowledge on the part of users	Yes	No	Yes	Yes	3(75%)
ICT operational cost is exceeding year by year	Yes	No	Yes	Yes	3(75%)
Increasing cost of procuring hardware & software	Yes	No	Yes	Yes	3(75%)
Political and administration changes	Yes	Yes	Yes	Yes	4(100%)
Lack of well accepted & standard lib. software package	Yes	No	Yes	Yes	3(75%)
Non availability of consultant services	Yes	No	Yes	Yes	3(75%)
Non availability of less experience library management software	Yes	No	Yes	Yes	3(75%)
Inability to absorb recurring costs	Yes	No	No	Yes	2(50%)

Central University Libraries responded, Political and Administration Changes is the barrier of ICT in all the university libraries under study. The university libraries (75%) responded that Inadequate trained library professional, Lack of ICT knowledge on the part of users, ICT operational cost is exceeding year by year, Increasing cost of procuring hardware & software, Lack of well accepted & standard lib. software package, Non availability of consultant services, Non availability of less experience library management software, Inability to absorb recurring costs. The university libraries (50%) responded that Inadequate ICT infrastructure, Lack of Awareness of library professionals about IT, Inability to absorb recurring costs are the barrier of

ICT application in the libraries. Lack of interest of library professional, Lack of initiation on the part of library professionals are the barriers responded by (25%) university library under study. None of the libraries responded that insufficient fund is the barrier of ICT in the central university library under study.

6.10 Internet

Table 6.10 Internet Facility in Library

Internet	AMU	BSBRAU	BHU	U A	Total
Is internet facility available in library	Yes	Yes	Yes	Yes	4(100%)
Is internet facility used by the users	Yes	Yes	Yes	Yes	4(100%)
Is internet facility used by the staff	Yes	Yes	Yes	Yes	4(100%)
Is internet facility used by the non members	No	No	No	Yes	1(25%)

All the central university libraries under study responded that internet facility is available in all the libraries, used by the users and staff. Only one (25%) central university library responded that internet facility is used by the non members in the university library.

6.11 Factors Influencing the Provision of ICT Based Library and Services

Table 6.11 Allocation of Budget Influence ICT Based Services In Library

University	Excellent	Very Good	Good	Satisfactory	Unsatisfactory	Total
AMU	1(25%)	-	-	-	-	1(25%)
BSBRAU	-	-	1(25%)	-	-	1(25%)
BHU	1(25%)	-	-	-	-	1(25%)
U A	-	1(25%)	-	-	-	1(25%)
Total	2(50%)	1(25%)	1(25%)	-	-	4(100%)

Chi-square = .238
Pearson Chi-Square Value at 6 df and 0.5 level of Significance 8.000
Null Hypothesis is accepted

Majority of the university libraries (50%) responded that allocation of budget is excellent and (25%) of the libraries responded it is very good and (25%) responded it is good. Chi-square test is carried out to test that budget is not excellent in all the central university libraries under study. The computed Value of ë2 is .238, which is less than table value (8.000) at 6 degree of freedom and 0.5 per cent level of significance. Hence it can be concluded that all the university libraries budget is not excellent. Hypothesis is accepted
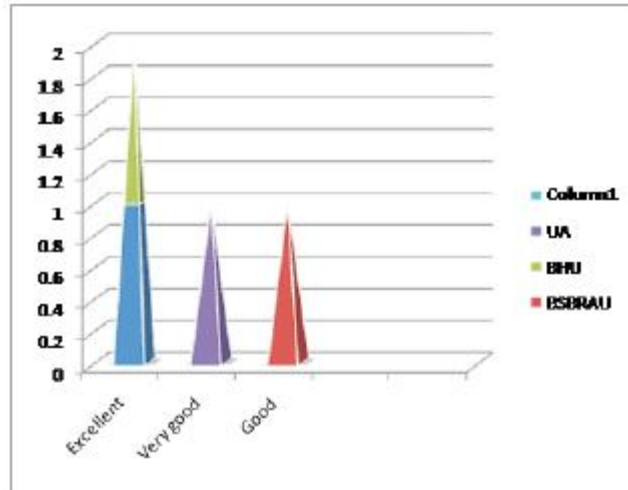
Figure 1. Allocation of Budget

6.12 ICT Skills & Expertise and Services in Library
Table 6.12 ICT Skills & Expertise of Lib. Staff and Services in Library

University	Excellent	Very Good	Good	Satisfactory	Unsatisfactory	Total
AMU	-	1(25%)	-	-	-	1(25%)
BSBRAU	-	-	1(25%)	-	-	1(25%)
BHU	-	1(25%)	-	-	-	1(25%)
U A	1(25%)	-	-	-	-	1(25%)
Total	1(25%)	2(50%)	1(25%)		-	4(100%)

Chi-square = .238

Pearson Chi-Square Value at 6 df and 0.5 level of Significance 8.000

Null Hypothesis is accepted

Majority of the university libraries (50%) responded that ICT skills & expertise of library staff influence services in library are very good, (25%) of the libraries responded it is excellent, (25%) responded it is good. Chi-square test is carried out to test that ICT skills & expertise of library staff & services are not excellent in all the central university libraries under study. The computed Value of ë2 is .238, which is less than table value (8.000) at 6 degree of freedom and 0.5 per cent level of significance. Hence it can be concluded that all the university libraries ICT skills & expertise of library staff & services are not excellent. Hypothesis is accepted.

CONCLUSION
The present study has been carried out in the central university libraries of Uttar Pradesh. It is find out that Libraries of Central Universities have gone far ahead in computerized and automation. Majority of the libraries have gone for the automation. Libraries are providing

internet facility to its users and staff and also provide training to its users. All the Libraries are the part of institutional network.

REFERENCES

Akinfoliarian, W. A. (1998), *"Automation in the Adeymi College of Education Library, Ondo", library Management, Vol. 19 No. 1, pp 26-28.*

Jayaprakash, M. and Balasubramani, R. (2011) *"Status of Automation in University Libraries of Tamilnadu: A Survey", European Journal of Scientific Research, Vol.53 No.1, pp.17-24.*

Mal, Bidyut K. and Bajpai, R. P. (2011) *"Digital Libraries in India: some Major Initiatives", Library Progress International, 31(1) pp 53-60.*

Neeraj and Sukula, Shiva Kanaujia (2011), *"The growth pattern of web-based E-journals in Arts and Humanities: an analytical survey of CCS University Central Library, Meerut" Library Progress*

(International) 31(2) pp 147-158.

Saarti, Jamo (2003), *"The Acquisition and maintenance cost association with Library Automation systems in Finnish Public Libraries", Electronic Library and Information Systems, Vol. 37 No. 1, pp.25-30.*

Singh, K. P. , Bebi and Gulati, Dipti (2011), *"Technological March from Web 1.0 to Web 3.0: a comparative study", Library Herald, vol. 49 no 2 pp 146- 157.*