

Human Resource Development in the Libraries of Institutions of Higher Education in North East India with Special Reference to Library Automation

Niraj Barua^{1*} and Rajani Kanta Barman²

¹Senior Library Information Assistant, Central library, IIT Guwahati, Guwahati-781039;
nbar@iitg.ernet.in

²Professor, Department of Library and Information Science, Gauhati University, Guwahati-781014;
r.k.barman.gu@gmail.com

Abstract

The purpose of this paper is to discuss the prospect of Human Resource Development (HRD) in the libraries of Higher Education Institutions (HEI) in North East India with special reference to library automation. A group of 172 libraries of North East India was selected for the questionnaire based survey conducted during the period 2007-2010 using Likert Scaling method. The analysis of the data collected in this survey shows that there is lack of HRD practices in majority of these libraries. Results of this survey shows that the library professionals working in these libraries, need proper training in different aspects of automation like basic computer operation, maintenance, design websites, searching OPAC etc. The paper highlights the need for proper HRD in libraries involved in automation. The responses received in the survey provide ample evidence for the authorities to develop proper training programs to keep the library manpower abreast of latest technologies. The paper also unfolds the true picture of HRD in the libraries of HEIs in the remote North East corner of India.

Keywords: Academic Libraries, Continuing Professional Development, Human Resource Development, Library Automation, North East India.

1. Introduction

In the context of the Institutions of Higher Education (HEI), a library is considered to be a vital wing as a learning resource centre. The libraries of HEIs of North East (NE) India, within their limited capacity, are also trying their best to improve the library activities by adopting technologies and a qualified workforce.

Managing people is definitely a challenge both at strategic or even organizational levels. Technology puts forth new challenges for library manpower and administrators alike. In North East India there are many Higher Education Institutions whose libraries are in the process of automation. Thus, human resources should be well managed and developed in alignment with the organizational goals and strategies. Unless the human workforce is regularly trained and motivated, no other mechanism like automation can bring efficiency in the

library routine jobs. This very fact is reflected when the authors visited the libraries in many HEIs in the North East India. Although now sufficient funds and resources are available for automation yet the quality of services and the expertise of the library staff is lacking far behind compared to rest of India. Therefore, the prospects of HRD in these HEI libraries are worth studying.

The article presents the results of a survey of the librarians and professional staff in eighty nine Higher Education Institution Libraries of North East India. Survey was conducted during the year 2007 – 2010. Fourteen (14) University Libraries of NE India were involved in the study, out of which ten were Central universities, 3 were State-owned Universities, and one Deemed university. The study also included three (3) libraries of institutes of National importance, fifteen (15) libraries of technical colleges and almost one hundred forty one (141) “B-Grade” or above “B-Grade” degree colleges accredited

*Author for correspondence

by National Assessment and Accreditation Council (NAAC) till year 2007, were taken up for the study. These colleges have good library infrastructure and library automation.

As in the rest of India the growth of Higher education in NE India picked up only after independence. According to the UGC Annual report¹ there are 13 Universities in North East India. Among these, 10 are Central Universities and 3 State Universities all located in Assam, and one Deemed University (NERIST). In numbers, Assam alone has 6 universities followed by Manipur and Arunachal Pradesh with 2 Universities and rests of the states have one University each. According to the list of colleges recognized by UGC North East states have 338 UGC registered colleges. Among these, Assam has 212 Degree Colleges followed by Manipur (50), Tripura (16), Meghalaya (18), Mizoram (18), Nagaland (14), Arunachal Pradesh (7) and Sikkim (3). In addition there are 3 institution of national importance in NE India, i.e. 1 Indian Institute of Technology (IIT) and 1 National Institute (NIT) in Assam, 1 Indian Institute of Management (IIM) in Meghalaya, and also various Technical Colleges like Medical, Veterinary Colleges, Engineering Colleges and Polytechnic Institutions.

2. Literature Review

The situation of automation in the HEI libraries is slowly changing as noted “Most of the academic libraries at present have their web pages on their institutions websites and some are providing Web OPAC and digital library facility. But many academic libraries are still working traditionally due to absence of fund, basic infrastructure, action plans or priorities from authorities². Murthy and Cholin are of the same view that “all academic libraries [in India] now virtually depend on the IT systems for their basic operations such as acquisitions, cataloguing, circulation, serials control, and other functions”³.

In NE India, in the beginning, the major constraints of library automation were absence of planning, non-availability of vendor developed software at affordable prices, restrictions on the import of hardware, lack of trained manpower, lack of power supply, non-existence of standards, and absence of co-operation⁴. Automation activities in Universities of North East India gained momentum only in the 90s because of the special initiative of the INFLIBNET Centre, the University Grants Commission (U.G.C.) autonomous agency⁵.

In Xth-Plan period, important autonomous colleges and prestigious colleges located in Assam have also been included under INFLIBNET Programme for receiving financial and technical support. INFLIBNET Centre has

developed SOUL Software (College Version) and this software is being installed in many colleges of Assam in particular and North East India in general⁴.

The pace of library automation was not as fast as rest of India as the libraries of higher education institutions in NE India are facing many problems. As Singh and Deka⁶ notes that “The main problems of library automation in Assam are trained manpower and to some extent the negative attitude of authorities also. Though libraries are hard-pressed in their budgets, however, in most cases the library professionals are not conversant with the environment of library automation”.

However, the HEIs in the NE India do not have sufficiently strong Libraries which can meet the requirement of its readers. One of the major problems is the lack of properly trained library professionals which is supported by various studies such as Barman⁷, Barua and Barman⁸, Singh⁹, Sarmah¹⁰, Sinha, Chakraborty & Bhattachatjee⁴ and others.

With the setting up of the INFLIBNET under the UGC began a new chapter in the networking and automation of the university and college libraries in India. But as Singh⁹ finds, the indications are that the technologies are making a forceful entry into the libraries of India including North East India. Technology has impacted everyone, but it has become an especially challenging issue for organizations like the academic library particularly in context of its human resources. As Barman and Devchoudhury¹¹ notes that information professional has multifarious roles in the modern library as a librarian, record manager, archivist, information manager, information adviser/instructor, information broker, and system and networking administrator.

Lack of skilled manpower to maintain the automated systems and to provide proper e-information service to the academic community is a main problem. As reported by Chandraiah¹², Suku and Pillai¹³ etc., there is a shortage of qualified manpower in the university libraries in India. The issue has become especially important in the higher education sector in recent years because there is a growing demand for modernization of the libraries attached to the HEIs to suit the changing environment in this sector. Barman¹⁴, Singh¹⁵, Sarmah¹⁰, Sinha, Chakraborty and Bhattacharjee⁴ et al. in their studies also found lack of trained manpower in IT as a constraint to automation in libraries attached to HEI particularly in NE India.

Sinha¹⁵ concludes that the importance of skilled library and information professional workforce with the knowledge of computer has been rising in our country for extending ICT based computerized and digital library services.

Studies including by Barman and Singh¹⁶ show that there

are cases where librarians have got training in automation but it is not practically reflected in the institutions they serve. The reluctant in taking initiative in planning and implementation of human resource development will lead to inefficiency which will affect productivity and performance.

A study conducted in the State of Nagaland found that Most of the colleges have established libraries with little disorganized collection but majority of these libraries do not have qualified librarians, headed by non-professional and with no proper staffing structure the libraries lacks in providing prompt and efficient services to the users¹⁷. Similar studies carried out in Manipur found that Studies done by Devi and Devi⁵, Devi and Singh¹⁸, Devi and Singh¹⁹ etc. show that although modernization of the HEI libraries in Manipur has been initiated in some institutions but the majority of the staff is not able to handle the computer and training is thus very much necessary.

As Singh and Kaur²⁰ and others notes that Information and Communication Technology (ICT) has made a deep impact on libraries of HEIs. According to Panigrahi²¹, UGC Refresher Courses have been organized by the Academic Staff College of the Universities to train teachers on LIS and Librarians to keep them up-to-date, but it has been realized that such Refresher Courses need to be restructured.

Sarkar²² has made a detailed study on NISSAT's role in the area of HRD in library and information science. The education and training of information personnel is one of the thrust areas of the NISSAT (National Information System for Science and Technology).

Self-learning is frequently used by library staff to teach themselves (perhaps from manuals) how to use particular system. Studies undertaken by Babu²³ et al. shows that self-learning is a very important method of getting training among library staff.

Open Source Software (OSS) packages are a new development in automation scenario in academic libraries in India. Many authors such as Chakravarty²⁵, Bansode and Periera²⁶, Sheeja²⁷ et al. have discussed the use of OSS in library automation in India.

Kumar and Jasimudeen²⁸ had found that Koha is found to be popular among Librarians of Southern India but its adoption in other parts of India is growing.

3. Methodology

The present study requires data to be collected from various HEIs. Under these circumstances the most appropriate method found to be suitable was the survey

method. A library survey may be defined as a systematic collection of data concerning a library, its activities, operations, personnel working in the library and its users. Following techniques was used for data collection in the present study:

Questionnaire technique was very important in the context of the present study. Two sets of questionnaire were prepared - one set for (i) Librarian, and the other set for (ii) Library staff. Majority of the questions in both sets were of close ended type and very few were open. Many of the questions are based on Likert Scaling method. The responses are coded so that the strongly positive gets the highest score and a Likert scale is then constructed by taking those items the scores for which correlate most closely with the overall scores.

The questionnaires used for the present research uses 3-point scale, 4-point and 5-point scales. A typical Likert 5 point scaling has following order of response: No Need, Mild Need, Neutral, Strong Need and Very Strong Need. Information was gathered from 172 libraries of Higher Education Institutions of North East India. Out of these 129 libraries responded to the questionnaires sent to them – a response rate of 75%. Out of these a sample of 89 libraries was used for the final study. These 89 libraries were selected because they had automation. Questionnaires obtained from these 89 libraries specifically meant for the librarians of these Higher Education Institutions (HEIs) were analysed. In addition to these, 49 questionnaires were also distributed to library professional staff other than the librarian working in the 172 libraries. In the case of the library professional staff, a total of 36 questionnaires were returned – a response rate of 73%. Thus the total number of library professionals under the study which included the librarian and the professional staffs working in the automated HEI libraries stood at 89+36=125.

4. Analysis

4.1 Institution Authority Support for Updating Skills of Library Manpower

On the question of institution authority support for keeping library manpower up to date, we used a 4 – point Likert scale ranging from Not at all (1) to Very Often (4). On analyzing the responses from the library professionals it was found that majority (59) out of the total 125 professionals said the option “Sometimes” and the option “Not at all” was said by least number (11) of the professionals. On statistical analysis, the mean score was found to be 2.88 which is nearer to the weightage 3 assigned to the option “Sometimes”. This data is tabulated in Table 1.

Table 1. Percentage and mean score response regarding institution authority support for updating skills of library manpower

Authority support to training (Weightage within brackets)	No of Respondents (N)	Percentage	Σ
Very Often(4)	31	25	124
Some Times (3)	59	47	177
Rarely (2)	24	19	48
Not at All (1)	11	9	11
	125		360

$$\text{Mean Score} = \frac{\Sigma (\Sigma)}{125} = 2.88$$

4.2 Participation in Continuing Education/ Training Programs by Library Manpower

The library professionals who were given the questionnaires have participated in different kinds of training and continuing education activities. 85% of the respondents have participated in conference/seminars, 80% in workshops, a significant 70% does independent reading, 34% have attended classes, 21% in video presentations, and 14% in teleconference, and a negligible 2% in online methods like Webinars etc. Table 2 explains this.

Table 2. Percentage and ranking of Participation in continuing education/training programs by library manpower

Activities/Programs attended	No of Respondents	Percentage of respondents	Rank
Conferences/Semi-nars	106	85	1
Workshops	100	80	2
Independent reading	88	70	3

Table 4. Average weightage/factor & Mean of different Levels of training need among library manpower related to different aspect of automation in library

Subjects	Very Strong Need	Strong Need	Neutral	Mild Need	No Need	Σ	No	Σ/No (Average scores)
Weightage	5	4	3	2	1			
IT/Equipment maintenance	56	38	9	16	6	497	125	3.976
Web Design	50	50	13	9	3	510	125	4.08
Library housekeeping software	47	28	13	28	9	451	125	3.608
OPAC/WebOPAC	44	22	19	16	24	421	125	3.368

Class room	42	34	4
Video presentations	26	21	5
Teleconference	18	14	6
Online methods (webinars, etc.)	3	2	7
Nothing	0	0	8

4.3 Types of Training Preferred

Library Professional staff working in the libraries of HEIs in N. E. India was asked about the type of training which they preferred. Ninety three numbers i.e. 74% of the respondents said they preferred On-the-job training whereas thirty two numbers of library professional staff i.e. 26% said they preferred Off-the-job training. This data is shown in Table 3.

Table 3. Percentage of types of training preferred by library professionals

Types of Training	No. of Respondents	No. of Respondents (%)
On – the - Job	93	74
Off – the - Job	32	26

4.4 Levels of Training Need among Library Manpower Related to Different Aspect of Automation in Library

As observed from the Table 4, the likert scale score (Σ/N) for all the areas investigated were higher than 2. The overall likert score is 3.29. Seven or (60%) of the areas including Web Design, IT/Equipment maintenance, Operating Systems, Library housekeeping software, Basic Computer orientation, OPAC/WebOPAC, and Intranet were above the mean while the remaining five or 40% of the methods were below the mean score.

Operating Systems	41	41	19	13	11	463	125	3.704
Basic Computer orientation	38	30	16	28	13	440	125	3.52
Intranet	36	36	13	13	27	416	125	3.328
Internet Searching	30	34	9	16	36	377	125	3.048
E-Mail	26	13	19	28	39	334	125	2.672
Microsoft Access (database)	19	47	22	15	21	400	125	3.2
Microsoft Word	16	26	19	21	42	325	125	2.6
Microsoft Excel	13	16	28	27	41	308	125	2.464

$$\text{Mean Score} = \frac{\Sigma (\Sigma/N)}{12} = 3.29$$

The above analysis shows that there is obvious need for training in the areas of library automation mentioned here. Further the results shows that there is strong need for training in areas like Web Design, IT/Equipment maintenance, Operating Systems, Library housekeeping software, Basic Computer orientation, OPAC/WebOPAC and Intranet.

4.5 Methods of Training

As observed from the Table 5, the likert scale score (Σ/N)

of preference level for all the methods investigated were higher than 2. The overall likert score is 3.09. Three or (40%) of the methods including the method “Workshop”, “Audio or Videotape presentation”, and “Online tutorials” were above the mean while the remaining four or 60% of the methods were below the mean score. According to the results, methods “Workshop”, “Audio or Videotape presentation”, and “Online tutorials” were more preferred methods of training by the library professionals of the HEI libraries in NE India.

Table 5. Average weightage/factor and Mean of preference level to different methods of training

Methods	Most Preferred	More Preferred	Low	Least Preferred	Σ	N	Σ/N
Weight/Factor	4	3	2	1			
Workshops	81	34	3	7	439	125	3.512
Online tutorials	56	34	28	7	389	125	3.112
Audio or videotape presentations	50	63	5	7	406	125	3.248
Printed guidebooks and manuals	34	69	20	2	385	125	3.08
Classroom instruction	28	59	28	10	355	125	2.84
Guidance from colleagues	27	81	10	7	378	125	3.024
Conference sessions	26	53	41	5	350	125	2.8

$$\text{Mean Score} = \frac{\Sigma (\Sigma/N)}{7} = 3.09$$

4.6 Reasons for Pursuing Continuous Education Activity/Training

As observed from the Table 6, the likert scale score for all the reasons investigated were higher than 3. The overall

likert score is 3.39. Two or (50%) of the reasons including the reason “to work towards job enrichment/efficiency”, “For personal growth/greater job satisfaction” were above the mean while the remaining two or 50% of the reasons were below the mean score.

Table 6. Average weightage/factor and Mean of level of importance of various reasons for pursuing continuous education activity/training

Rank	Reasons	Most Important	More important	Low	Least important	Σ	No	Σ/N
	Weight/factor	4	3	2	1			
1.	To work towards job Enrichment/efficiency	101	12	12	0	452	125	3.616

2.	For personal growth/greater job satisfaction	81	34	10	0	436	125	3.488
3.	For career advancement	72	28	11	14	411	125	3.288
4.	For consideration on annual evaluation	65	32	16	12	396	125	3.168

$$\text{Mean Score} = \frac{\sum (\Sigma/N)}{4} = 3.39$$

According to the results, to work towards “job enrichment/efficiency” and “For personal growth/greater job satisfaction” were accepted as important reasons for undertaking continuous education/training activities by the library professionals working in the HEI libraries of NE India.

4.7 Effects of Continuing Education (CE) Activities/Training on Library Manpower in their Present Job Performances

Library personnel working in the surveyed libraries were asked about the effects of training in their present job performance. A great majority of 61% responded that such training had greatly improved their performance. 22% responded that continuing education activities/training improved performance to some extent. 10% of the responders felt that such activities had little effect on performance. However no one felt that such training had no effect on their performance. While a negligible 10% felt that it had little effect on their performance. Table 7 explains this.

Table 7. Ranking of effects of continuing education activities/training on library manpower in their present job performances

Effects	No. of respondents	%	Ranking
Improved performance greatly	75	61	1
Improved performance to some extent	28	22	2
Little effect on performance	13	10	3
No effect on performance at all	0	0	4
No comments	9	7	
Total	125	100	

4.8 Barriers to Pursuing Continuous Education/Training Activity

As observed from the Table 8, the likert scale score for all the reasons investigated were higher than weightage 2. The overall likert score is 2.472. Three or (40%) of the reasons including the reason “Lack of events at a convenient location”, “Lack of time”, and “Lack of support/permission from employers” were above the mean while the remaining 5 or 60% of the reasons were below the mean score.

Table 8. Average weightage/factor and Mean of occurrence of different barriers to pursuing continuous education/training activity

Barriers	Always	Usually	Sometimes	No response	Never	Σ	N	Σ/N
WEIGHTAGE	5	4	3	2	1			
Lack of time	13	25	41	30	16	364	125	2.912
Cost of training	3	6	34	51	31	274	125	2.192
Lack of events at a convenient location	5	55	28	24	13	390	125	3.12
Lack of events in the topics I want	3	9	31	48	34	274	125	2.192
Lack of events at a convenient time	3	6	31	82	3	299	125	2.392
Training will not result in promotion or re-grading	9	9	19	47	41	273	125	2.184
Family Problem	3	9	19	72	22	274	125	2.192
Lack of support/permission from employers	16	16	28	31	34	324	125	2.592

$$\text{Mean Score} = \frac{\sum (\Sigma/N)}{8} = 2.472$$

According to the results “Lack of events at a convenient location”, “Lack of time”, and “Lack of support/permission from employers” were accepted as reasons which sometimes hampered the library professionals working in the HEI libraries of NE India from pursuing continuous education/training activity.

5. Conclusion

The study concluded that the library staff working in HEI libraries has different training levels in different aspects of automation. Most of the libraries in HEIs in NE India are new to library automation. Thus, initial training called the basic computer orientation is a very strong need among the librarians and staff in these libraries. In fact an important finding of this study was that, within these libraries, many staff has not received training in basic computer competence – that is staff members lack basic training on how to operate their PCs.

As discussed previously both on – the - job and off – the - job training can be provided. But the library professionals have shown preference to on – the - job training. This study has also thrown light on some of the barriers faced by librarians and the staff to pursue training and other continuing professional development activities. Although majority of the subjects refrained from responding to these barriers, the reason best known to them, but still one majority response was lack of events at a convenient location. An important aspect of the present study was to find out what motivates the working library professionals in these libraries to participate in training and other professional activities. Majority of the respondents have agreed that the most important reasons for pursuing continuous education/training activities were to work towards job enrichment/efficiency, and for personal growth/greater job satisfaction.

The present study thus concludes that the training activities had greatly improved staff performance at workplace. The fact that HRD is very important for keeping library manpower up-to-date on technology and that there is need for improvement of HRD in the automated libraries were some other important findings made in the present study. The study result also indicates that through enhancing practicality in the HR Planning and Development in the HEI libraries of NE India would contribute significant positive impact towards not only improving performance and skill of the library manpower but also tremendously helping in boosting moral and motivation level of the library manpower.

6. References

1. UGC Annual Report: 2005-2006. India (University Grants Commission). Retrieved from: <http://www.ugc.ac.in/pub/annualreport/summary.pdf> Accessed on 18 October 2008.
2. Upadhyay, N. (2009). Vision and Roles of the Future Academic Libraries, International Conference on Academic Libraries-2009, Delhi, p. 207–212.
3. Sharma, R.N. (2009). Vision and Roles of the Future Academic Libraries, International Conference on Academic Libraries-2009, Delhi, p. 229–238.
4. Sinha, S.K.; Chakarborty, S.K. and Bhattacharjee, J. (2007). Library as a Global Information Hub: perspectives and Challenges, Promotion of Library Automation and Networking in North Eastern Region-2007, Guwahati, p. 14–25.
5. Devi, A.H. and Devi, T.P. (2006). Dynamic Interoperable Web Based Information Systems, Convention on Automation of Libraries in Education and Research Institutions-2006, Gulberga, p. 210–216.
6. Singh, S.K. and Deka, P.K. (2008). Open Access, Open Source and Open Libraries, Promotion of Library Automation and Networking in North Eastern Region-2008, Nagaland, p. 268–279.
7. Barman, R.K. (2007). Digital Media and Library Information Services, 26th All India Conference of IASLIC 2007, New Delhi.
8. Barua, N. and Barman, R.K. (2008). ICT Training of Library Professionals in Academic Libraries of Greater Guwahati, Proceedings of International Conference on the Role of Library and Library Professionals in Knowledge Society, NEHU, Shillong.
9. Singh, S.K. (2008). Impact of ICT on management of library operations in Assam. In: N. Lahkar, editor. Changing Library Scenario in Digital era, Guwahati, ACLA, p. 98–109.
10. Sarmah, M. (2008). Application of Library Management Software in University and college Libraries of Assam. In: N. Lahkar, Editor. Changing Library Scenario in Digital era, Guwahati, ACLA, p. 110–118.
11. Barman, R.K. and Devchoudhury, G. (2010). Re-engineering of Library and Information Services in Digital Era, Promotion of Library Automation and Networking in North Eastern Region-2010, p. 358–363.
12. Chandraiah, I. (2003). Automation of Libraries in Education and Research Institutions, Convention on Automation of Libraries in Education and Research Institutions, Ahmedabad, 2003.
13. Suku, J. and Pillai, M.G. (2005). Automation of University Libraries in Kerala: Status, Problems and Prospects. *The Journal of Academic Librarianship*, 31(2): 151–159.
14. Barman, R.K. Promotion of Library Automation and Networking in North Eastern Region-2010, p. 34–45.
15. Sinha, M.K. (2008). From Automation to Transformation, Convention on Automation of Libraries in Education and Research Institutions, Allahabad, p. 165–175.

16. Barman, R.K. and Singh, S.K. (2007). Library as a Global Information Hub: perspectives and Challenges, Promotion of Library Automation and Networking in North Eastern Region-2007, Guwahati, p. 217–226.
17. Lendina and Ngullie, M. (2006). Digital Preservation, Management and Access to Information in the twenty first Century, Promotion of Library Automation and Networking in North Eastern Region-2006, Aizawl, p. 308–310.
18. Devi, C.B. and Singh, C.R. (2006). Digital Preservation, Management and Access to Information in the twenty first Century, Promotion of Library Automation and Networking in North Eastern Region-2006, Aizawl, p. 365–369.
19. Devi, B. and Singh, R. (2007). Library as a Global Information Hub: perspectives and Challenges, Promotion of Library Automation and Networking in North Eastern Region-2007, Guwahati, p. 309–313.
20. Singh, J. and Kaur, T. (2009). Vision and Roles of the Future Academic Libraries, International Conference on Academic Libraries 2009, Delhi, p. 51–54.
21. Panigrahi, P. (2010). Library and Information Science Education in East and North-East India: Retrospect and Prospects. DESIDOC Journal of Library & Information Technology, 30(5):32–47.
22. Sarkar, B.N. (2001). NISSAT Manpower Development Program 1986-2000. Information Today & Tomorrow, 20(2): 11–21.
23. Babu, R.; Vinayagamoorthy, B.P. and Gopalakrishnan, S. (2007). ICT skills among librarians in engineering educational institutions in Tamil Nadu. DESIDOC Bulletin of Information Technology, 24(6): 55–64.
24. Bruce, S. and Yearley, S. (2006). The Sage Dictionary of Sociology. London: Sage publication Ltd., 344p.
25. Chakravarty, A.S. (2012). Library automation using NewGenLib Software: a case study of Osmania University Library. International Journal of Library and Information Studies, 2(2): 18–24.
26. Bansode, S.Y. and Pieriera, S. (2008). A survey of Library automation in College Libraries in Goa State. Library Philosophy and Practice, 2008. Retrieved from http://digitalcommons.unl.edu/libphilprac/?utm_source=digitalcommons.unl.edu%2Flibphilprac%2F205&utm_medium=PDF&utm_campaign=PDFCoverPages
27. Sheeja, N.K. et al. (2013). Collection and Assets management: one University Library's journey to the future, Convention on Automation of Libraries in Education and Research Institutions 2013, Ahmedabad.
28. Kumar, V. and Jasimudeen, S. (2012). Adoption and user perceptions of Koha library management system in India. Annals of Library and Information Studies, 59(12): 223–230.