

A STUDY ON ICT INFRASTRUCTURE AND LIBRARY AUTOMATION IN THE COLLEGES AFFILIATED TO ASSAM UNIVERSITY, SILCHAR (A CENTRAL UNIVERSITY)

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ABSTRACT

Purpose: The boon of information technology pushed to become the backbone of library and information centres to serve day to day activities. The present study will discuss the status of ICT infrastructure, ICT application and library automation in the provincialised colleges affiliated to Assam University, Silchar and the problems which became the barriers to achieve full flagged library services using ICT and how can it be overcome.

Methodology: Survey method with the help of scheduled questionnaire has been applied in this study along with interview and personal observation to conduct this study. The colleges assessed and accredited by NAAC are well equipped to have ICT infrastructure and library automation therefore this study covers 13 colleges from 24 colleges affiliated to Assam University, Silchar.

Findings: The process of library automation is still in initial phase. The college authority has to be more concern about the development of ICT infrastructure and library automation to accelerate the library services on priority basis. There are only 15.38% libraries completed library automation works where 46.15% partially completed the process and 23.07% are still in initial stage of automation. Lack of good will of the authority has been reported as a major barriers of library automation and ICT infrastructure.

Originality: This is an original research works conducted by the researcher in the colleges affiliated to Assam University, Silchar.

Keywords: Colleges Library, Library Automation, ILMS, ICT infrastructure, IT application, Assam University.

1. INTRODUCTION

Library Automation is the need of the hour. We are living in the age of information communication technology (ICT). With the advancement of information communication technology, libraries are developing day by day. Now a days, most of the college libraries are using automated library system using integrated library management software's (ILMS), open source software, RFID or Barcode based issue return system, Institutional Repository, Digital Library, Web OPAC, library apps etc. These are the recent development in the field of library science.

Library is the heart of an academic institution. Automation helps to provide easy and fast library services to the users. Modern libraries are depending day to day works on automated library management systems. College libraries affiliated to Assam University are developing day by day in the field of ICT, library automation and digitization. There are 24 numbers of provincialised colleges in three districts such as Hailakandi, Karimganj and Cachar under jurisdiction of Assam University, Silchar. Most of the college libraries are lacking behind from the application of ICT and library Automation. Insufficient fund, Lack of ICT Infrastructure, Lack of trained manpower, lack of interest from the college authority are the major drawback of automation in the colleges affiliated to Assam University, Silchar.

2. OBJECTIVES OF THE STUDY

This study is carried out to achieve both qualitative and quantitative analysis of library automation its status, infrastructure, usage and barriers of college libraries affiliated to Assam University, Silchar. The main objectives of this study are:

- i) To find out the status of ICT infrastructure among the selected colleges affiliated to Assam University
- ii) To understand the status of library automation in the selected colleges affiliated to Assam University
- iii) To observe the usage of different modules of library Automation software in the colleges affiliated to Assam University
- iv) To find out the use of library Automation software's (ILMS) in the affiliated to Assam University
- v) To find out the major problems in automation faced by the libraries affiliated to Assam University

3. SCOPE AND LIMITATION OF THE STUDY

The present study will help to understand the growth and development of ICT infrastructure, library automation in the degree colleges affiliated to Assam University, Silchar. This study is limited to the college libraries of three districts of Barak valley under jurisdiction of Assam University, Silchar. There are 24 Govt. provincialised colleges but present study is covering 13 colleges affiliated to Assam University, which are assessed and accredited by NAAC. These are major colleges in the study jurisdiction.

4. METHODOLOGY

Survey method with the help of structured questionnaire has been applied in this study along with interview and personal observation to conduct this study. The colleges assessed and accredited by NAAC are well equipped to have ICT infrastructure and library automation therefore this study covers 13 colleges from 24 colleges affiliated to Assam University. Purposive sampling method has been used to select these samples for data collection for the study. A structured questionnaire designed for the college librarian and distributed to collect the data from the whole population.

After collecting the data from the selected college libraries have been tabulated and analyzed to find out the frequency, percentage and graphical representation of data according to the study objectives.

The data sources are the library data provided by the college librarian or library in charge in the questionnaire distributed during the survey from entire study universe is the total data source used in this study.

5. LITERATURE REVIEW

A literature survey has been made to find out different studies related to ICT in the college libraries, library automation, and studies on college libraries and Assam University are listed below:

Choudhury, S. and Sarmah (2017) conducted a study on ICT infrastructure and application in the degree colleges of Cachar Districts. The study discussed the availability of ICT infrastructure and issues related to the implementation ICT in the colleges.

Dasgupta, Choudhury and Sarmah (2014) have highlighted the information literacy skills among the students and Scholars of Assam University, Silchar. They suggested to improve the ICT skills of the student and scholars of the University.

Konwar and Sinha (2014) discussed the status of ICT infrastructure and development of library network among the major colleges of Barak Valley, Assam. The study opined that most of the college libraries are not well of in context to ICT infrastructure, internet connectivity.

Kumar, Manjunath and Vijayraj (2012) emphasized the role of library in present day context and impact of ICT in the libraries. They are on the opinion that college library should take some initiatives to increase socio economic position of the libraries and to create an environment to abreast the new and latest knowledge and modern technological achievement.

Lahkar (2014) in this study he discussed the collegiate education and modern librarianship. He opined that modern librarianship is a changing library establishment on its duties and services. Being as a resource center the library and growing due to implementation of ICT in the libraries.

Singha and Sarmah (2014) The study of PG students of Assam University revealed that social networking sites are helpful for the student for sharing of information, providing comments, suggestions, opinions, instant ideas and to interact with each other.

6. DATA ANALYSIS AND INTERPRETATIONS

The present study covers the degree college libraries of three districts of Barak valley under jurisdiction of Assam University, Silchar. There are 24 Govt. Provincialised colleges but present study is covering 13 colleges affiliated to Assam University, which are assessed and accredited by NAAC. These are major colleges and well equipped to have ICT infrastructure and library automation in the study jurisdiction. There

are 13 colleges who have contributed and responded the questionnaire distributed during the survey and respond rate is 100%. The list of colleges surveyed is given below:

Table 1: List of Surveyed College libraries.

| SL. NO. | NAME OF THE COLLEGE | YEAR OF ESTABLISHMENT | NAME OF THE LIBRARY | NAAC GRADES |
|-------------------|-------------------------|-----------------------|-------------------------------------|-------------|
| HAILAKANDI | | | | |
| 1 | S. S. College | 1950 | Pratap Chandra Nath Central Library | A |
| 2 | Lala Rural College | 1963 | Central Library | B+ |
| KARIMGANJ | | | | |
| 3 | Karimganj College | 1946 | Central Library | B |
| 4 | Nabin Chandra College | 1971 | Central Library | B+ |
| 5 | Rabindra Sadan College | 1963 | Central Library | B+ |
| 6 | Ramkrishnanagar College | 1969 | Sishir Granthagar | B |
| CACHAR | | | | |
| 7 | Cachar College | 1960 | Central Library | B+ |
| 8 | G. C. College | 1935 | B.C. Gupta Memorial Library | A |
| 9 | Radhamadhab College | 1978 | Bipin Chandra Meorial Library | B |
| 10 | Women's College | 1971 | Central Library | B |
| 11 | Janata College | 1964 | Central Library | C+ |
| 12 | Nehru College | 1971 | Central Library | C |
| 13 | M. C. Das College | 1977 | Central Library | B |

7. STATUS OF ICT INFRASTRUCTURE IN THE COLLEGE LIBRARIES.

We can't imagine a library without ICT therefore it has been important to see the status of ICT infrastructure among the colleges affiliated to Assam University, Silchar, which are growing fast towards the implementation of ICT in the Libraries. Most of the college libraries found in the growing phase to develop library automation and digitization. There are 84.61% libraries having Server machine, every college having good numbers of client machine as well as printers, modem and UPS. 92.30% college libraries having CCTV camera for security and 46.15% libraries have barcode reader and barcode printer for automation purpose.

Table 2: ICT Infrastructure available in the College Libraries

| SL NO. | Name of the College | Server machine | Client | Printer | Scanner | CD/DVD writer | LCD projector | Digital camera | Web camera | RFID | CCTV camera | Telephone | Modem | Photocopy machine | Bar code printer | Bar code reader | UPS | Inverter/generator | Other |
|--------|---------------------|----------------|--------|---------|---------|---------------|---------------|----------------|------------|------|-------------|-----------|-------|-------------------|------------------|-----------------|-----|--------------------|-------|
| 1 | S. S. College | 1 | 3 | 3 | 2 | 4 | 0 | 0 | 0 | 0 | 4 | 1 | 1 | 1 | 0 | 0 | 4 | 0 | 0 |
| 2 | Lala Rural College | 0 | 3 | 1 | 1 | 3 | 1 | 0 | 0 | 0 | 4 | 2 | 2 | 1 | 0 | 0 | 3 | 0 | 0 |
| 3 | Karimganj College | 1 | 3 | 2 | 1 | 2 | 0 | 0 | 0 | 0 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 |
| 4 | N. C. College | 2 | 6 | 3 | 2 | 4 | 0 | 0 | 0 | 0 | 5 | 0 | 2 | 1 | 1 | 1 | 8 | 1 | 0 |

| | | | | | | | | | | | | | | | | | | | |
|------------------|-------------------------|----|----|----|----|---|---|---|---|---|----|---|----|----|---|---|----|---|---|
| 5 | Rabindra Sadan College | 2 | 22 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 4 | 1 | 1 | 1 | 5 | 1 | 0 |
| 6 | Ramkrishnanagar College | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 5 | 1 | 1 | 1 | 0 | 0 | 2 | 1 | 0 |
| 7 | Cachar College | 1 | 10 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 2 | 1 | 0 | 0 | 1 | 1 | 0 |
| 8 | G. C. College | 2 | 16 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 13 | 1 | 1 | 1 | 1 | 2 | 2 | 1 | 0 |
| 9 | Radhamadhab College | 2 | 10 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 2 | 1 | 1 | 1 | 1 | 1 | 12 | 0 | 1 |
| 10 | Women's College | 1 | 9 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 16 | 2 | 4 | 1 | 0 | 0 | 10 | 0 | 0 |
| 11 | Janata College | 1 | 3 | 2 | 2 | 0 | 1 | 0 | 0 | 0 | 8 | 2 | 1 | 2 | 1 | 1 | 9 | 1 | 0 |
| 12 | Nehru College | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 |
| 13 | M. C. Das College | 1 | 8 | 1 | 1 | 6 | 1 | 0 | 0 | 0 | 6 | 0 | 1 | 1 | 0 | 0 | 2 | 1 | 0 |
| FREQUENCY | | 11 | 13 | 13 | 12 | 7 | 4 | 0 | 0 | 0 | 12 | 9 | 13 | 12 | 6 | 6 | 13 | 8 | 1 |

7.1. FREQUENCY OF ICT INFRASTRUCTURE

The frequency distribution of ICT devices has been shown in the graphical representation to understand the status of ICT infrastructure in the selected colleges of Assam University more clearly. In the following chart it 84.61% colleges found Server machine where as every colleges having Client machine, Printers and Modem. 92.30% colleges having Scanner, photocopy machine and CCTV camera

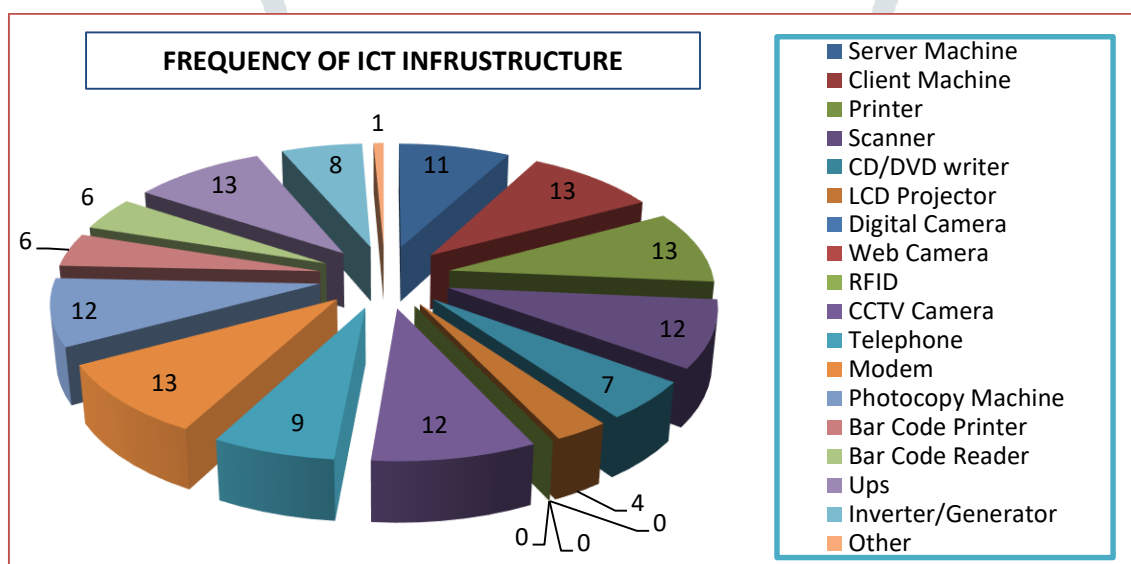


Figure 1: Frequency of ICT Infrastructure in the College Libraries

8. STATUS OF LIBRARY AUTOMATION

To save the time of the user and keeping bibliographic records of each and every material in the library, library automation plays a vital role in overall management and providing adequate services to the end user. Therefore in this study it has been observed keenly to find out the current growth and development of library automation in the selected libraries. It has been found that 84.61% libraries have been started library automation process, only 15.38% have completed the library automation and 23.07% in the initial stage of automation. And remaining library automation proposal is under consideration of the authority. This can be clearly reflected in the table provided below.

Table 4: Status of Library Automation

| SL. NO. | NAME OF THE COLLEGE | Automation | IF AUTOMATED | | | IF NOT AUTOMATED, PROPOSAL | | |
|---------|-------------------------|---------------|---------------|---------------|---------------|----------------------------|--------------|---------------------|
| | | | Completely | Partially | Initially | Accepted | Not accepted | Under consideration |
| 1 | S. S. College | Yes | 0 | 0 | 1 | 0 | 0 | 0 |
| 2 | Lala Rural College | No | 0 | 0 | 0 | 0 | 0 | 1 |
| 3 | Karimganj College | Yes | 0 | 1 | 0 | 0 | 0 | 0 |
| 4 | Nabin Chandra College | Yes | 0 | 1 | 0 | 0 | 0 | 0 |
| 5 | Rabindra Sadan College | Yes | 0 | 0 | 1 | 0 | 0 | 0 |
| 6 | Ramkrishnanagar College | Yes | 0 | 1 | 0 | 0 | 0 | 0 |
| 7 | Cachar College | Yes | 1 | 0 | 0 | 0 | 0 | 0 |
| 8 | G. C. College | Yes | 0 | 1 | 0 | 0 | 0 | 0 |
| 9 | Radhamadhab College | Yes | 1 | 0 | 0 | 0 | 0 | 0 |
| 10 | Women's College | Yes | 0 | 1 | 0 | 0 | 0 | 0 |
| 11 | Janata College | Yes | 0 | 1 | 0 | 0 | 0 | 0 |
| 12 | Nehru College | No | 0 | 0 | 0 | 0 | 0 | 1 |
| 13 | M. C. Das College | Yes | 0 | 0 | 1 | 0 | 0 | 0 |
| | FREQUENCY | 11 | 2 | 6 | 3 | 0 | 0 | 2 |
| | PERCENTAGE | 84.61% | 15.38% | 46.15% | 23.07% | - | - | 15.38% |

8.1. STATUS OF LIBRARY AUTOMATION

The status of library automation is shown in the graphical representation to understand the clear view of library automation in the surveyed colleges. There are 15.38% completed automation process and 46.15% partially completed and 23.07% have initially started library automation process.

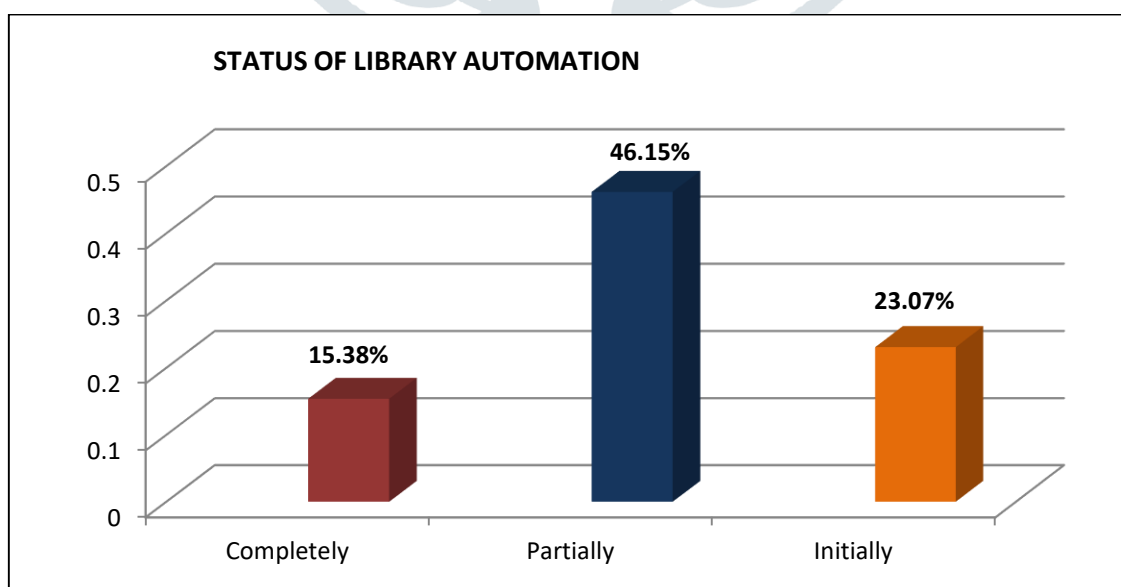


Figure 2: Status of Library Automation

9. LIBRARY OPAC AND BARCODE TECHNOLOGY

Modern library provides Online Public Access Catalogue (OPAC) to enable library users to search and access the library both remotely or locally. Use of barcode technology makes daily charging system easy and time saving to serve the clientele. In the following table it has been shown that number of records made available in the database as well as the access of library OPAC in the studied libraries. Only Radhamadhav College provides web access of OPAC and remaining providing institutional access of the library database. Only 46.15% of colleges have so far using barcode technology for charging system.

Table 5: Status of Library OPAC and use of Barcode technology

| Sl. No. | Name of the college | Total no. Records In the database | Access Restricted to Library | Access restricted to campus | Web OPAC | Barcode Yes | Barcode No |
|---------|---------------------|-----------------------------------|------------------------------|-----------------------------|----------|-------------|------------|
| 1 | S. S. College | 10000 | 1 | 0 | 0 | 0 | 1 |
| 2 | Lala Rural College | 3500 | 0 | 0 | 0 | 0 | 1 |
| 7 | Karimganj College | 27000 | 0 | 1 | 0 | 1 | 0 |
| 8 | N. C. College | 14000 | 1 | 0 | 0 | 1 | 0 |
| 9 | R. S. College | 5000 | 1 | 0 | 0 | 1 | 0 |
| 10 | RK Nagar College | 2015 | 1 | 0 | 0 | 0 | 1 |
| 14 | Cachar College | 25000 | 1 | 0 | 0 | 0 | 1 |
| 15 | G. C. College | 39000 | 1 | 0 | 0 | 1 | 0 |
| 16 | Radhamadhab College | 17000 | 1 | 0 | 1 | 1 | 0 |
| 17 | Women's College | 25760 | 1 | 0 | 0 | 0 | 1 |
| 18 | Janata College | 17000 | 0 | 1 | 0 | 1 | 0 |
| 19 | Nehru College | 3500 | 0 | 0 | 0 | 0 | 1 |
| 20 | M. C. Das College | 5000 | 1 | 1 | 0 | 0 | 1 |
| | PERCENTAGE | - | 69.23% | 23.07% | 7.69% | 46.15% | 53.84% |

9.1. FREQUENCY OF LIBRARY OPAC

The frequency distribution of OPAC access has been showing in the graphical chart in the following figure to understand more clear representation of the status of library OPAC in the study population. 69.23% restricted the access of database inside the library and 23.07% restricted to the college premises through LAN only and 7.69% avail it to the WEB OPAC.

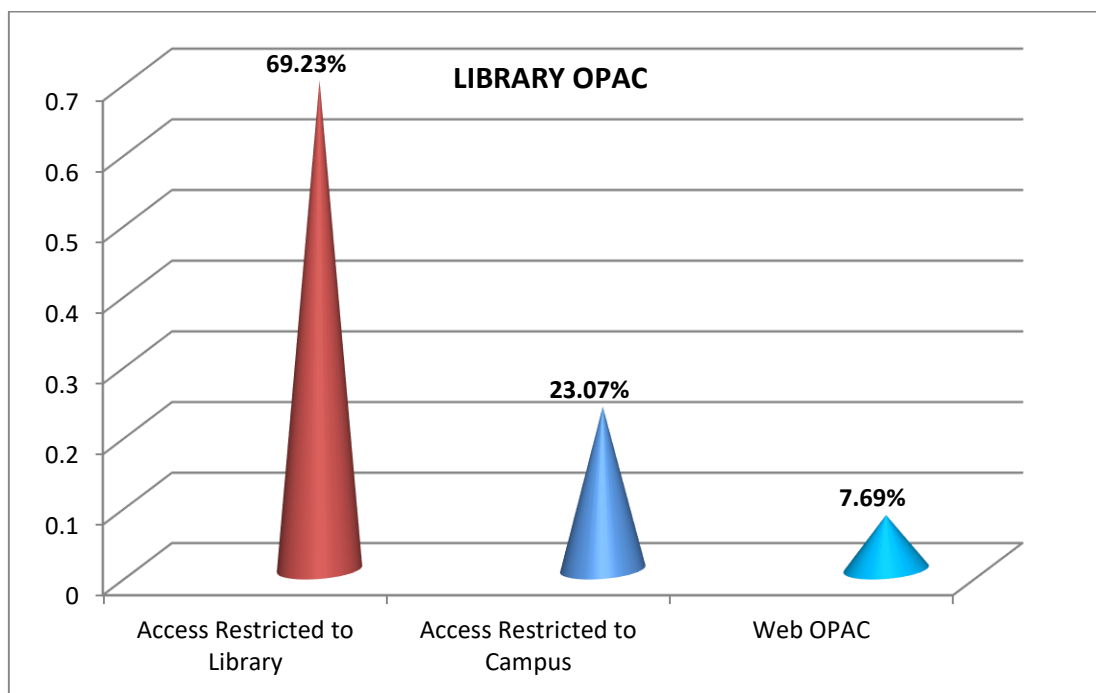


Figure 3 : Status of Library OPAC

10. USAGE OF DIFFERENT ILMS MODULES

The usage of different ILMS modules has been observed to understand the how far a library is being automated. The total number of 8 colleges so far completed administration module, only three colleges completed acquisition module, 9 colleges completed cataloguing module also 8 colleges running circulation system and OPAC completely. The remaining libraries yet to complete the ILMS modules for services.

Table 6: Usage of Different Areas of Library Automation

| SL.NO. | NAME OF THE COLLEGE | ADMINIST-RATION | | | ACQUI-SITION | | | CATALO-GING | | | CIRCUL-ATION | | | SERIAL CONTROL | | | OPAC | | |
|--------|------------------------|-----------------|-------------|-----------|--------------|-------------|-------------|-------------|-------------|-----------|--------------|-------------|-------------|----------------|-------------|-------------|-------------|-------------|-------------|
| | | Completely | Partially | Initially | Completely | Partially | Initially | Completely | Partially | Initially | Completely | Partially | Initially | Completely | Partially | Initially | Completely | Partially | Initially |
| 1 | S. S. College | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 |
| 2 | Karimganj College | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| 3 | Nabin Chandra College | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 |
| 4 | Rabindra Sadan College | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 1 |
| 5 | RK Nagar College | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 |
| 6 | Cachar College | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 |
| 7 | G. C. College | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 |
| 8 | Radhamadhab College | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 |
| 9 | Women’s College | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 |
| 10 | Janata College | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 |
| 11 | M. C. Das College | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 |
| | FREQUENCY | 8 | 3 | 0 | 3 | 4 | 4 | 9 | 2 | 0 | 8 | 2 | 1 | 0 | 5 | 6 | 8 | 1 | 3 |
| | PERCENTAGE | 72.7 | 27.3 | 0 | 27.3 | 36.4 | 36.4 | 81.8 | 18.2 | 0 | 72.7 | 18.2 | 9.09 | 0 | 45.5 | 54.5 | 72.7 | 9.09 | 27.3 |

11. ILMS USED FOR LIBRARY AUTOMATION

There are numbers of integrated library management software (ILMS) in our country SOUL 2.0 is more conveniently used in place of KOHA because of the guidance provided by INFLIBNET. In this study population 84.61% using ILMS and they are using SOUL 2.0, remaining using KOHA for their library management along with SOUL on trial basis.

Table 7: ILMS used for Library Automation

| SL. NO. | NAME OF THE COLLEGE | ILMS Automation | APPLICATION S/W USED | | |
|------------------|-------------------------|-----------------|----------------------|----------|--------|
| | | | KOHA | SOUL 2.0 | OTHERS |
| 1 | S. S. College | YES | 0 | 1 | 0 |
| 2 | Lala Rural College | NO | 0 | 0 | 0 |
| 3 | Karimganj College | YES | 0 | 1 | 0 |
| 4 | Nabin Chandra College | YES | 1 | 1 | 0 |
| 5 | Rabindra Sadan College | YES | 0 | 1 | 0 |
| 6 | Ramkrishnanagar College | YES | 0 | 1 | 0 |
| 7 | Cachar College | YES | | 1 | 0 |
| 8 | G. C. College | YES | 0 | 1 | 0 |
| 9 | Radhamadhab College | YES | 1 | 1 | 0 |
| 10 | Women's College | YES | 0 | 1 | 0 |
| 11 | Janata College | YES | 0 | 1 | 0 |
| 12 | Nehru College | NO | 0 | 0 | 0 |
| 13 | M. C. Das College | YES | 0 | 1 | 0 |
| FREQUENCY | | 11 | 2 | 11 | 0 |
| PERCETAGE | | 84.61% | 15.38% | 84.61% | 0.0% |

11.1. ILMS USED FOR LIBRARY AUTOMATION

The graphical view of ILMS used clear reflects that almost all the libraries using SOUL 2.0 and KOHA as an optional, initially for trial basis. Those who have not started library automation process they are using MS Excel for the creation of library database.

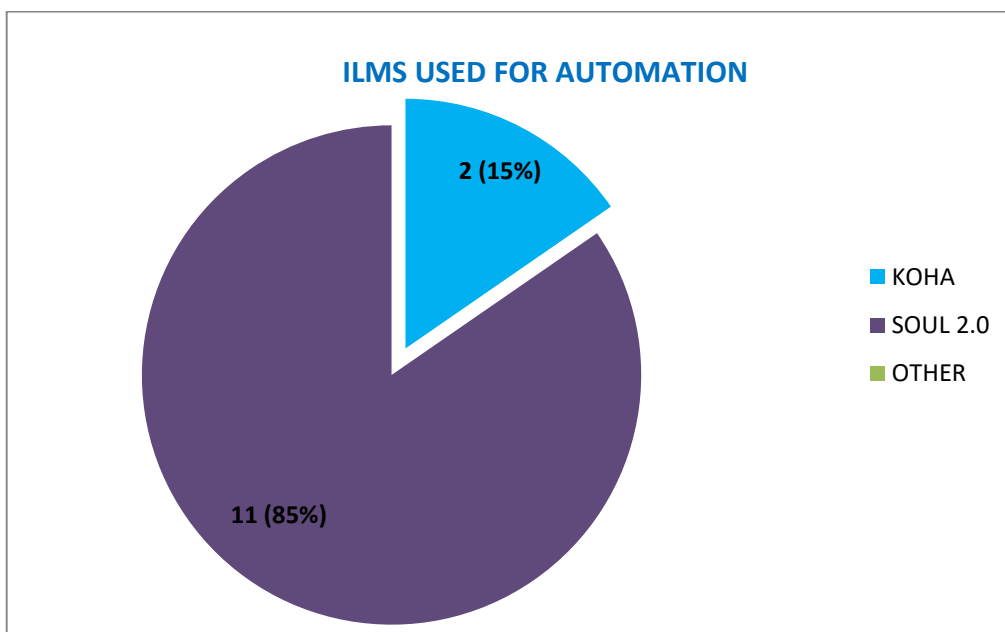


Figure 4 : ILMS used for Library Automation

12. MAJOR BARRIERS OF AUTOMATION

Though the selected libraries found to be automated but practically it has been observed that most of college libraries of Assam University are still running on manual process or Hybrid process due to lack of some hardware, financial assistance, diversion of library funds , inadequate library staff due to not full filling vacant position, lack of support from the authority and good will towards library. The main cause behind automation has been reported as retro conversion of bibliographic records due to day to day works. Above all it has been observed that the authority divert the government scheme of digital library, library automation and e library funds to other administrative works on priority basis. They gave less priority of library development compare to other developmental works.

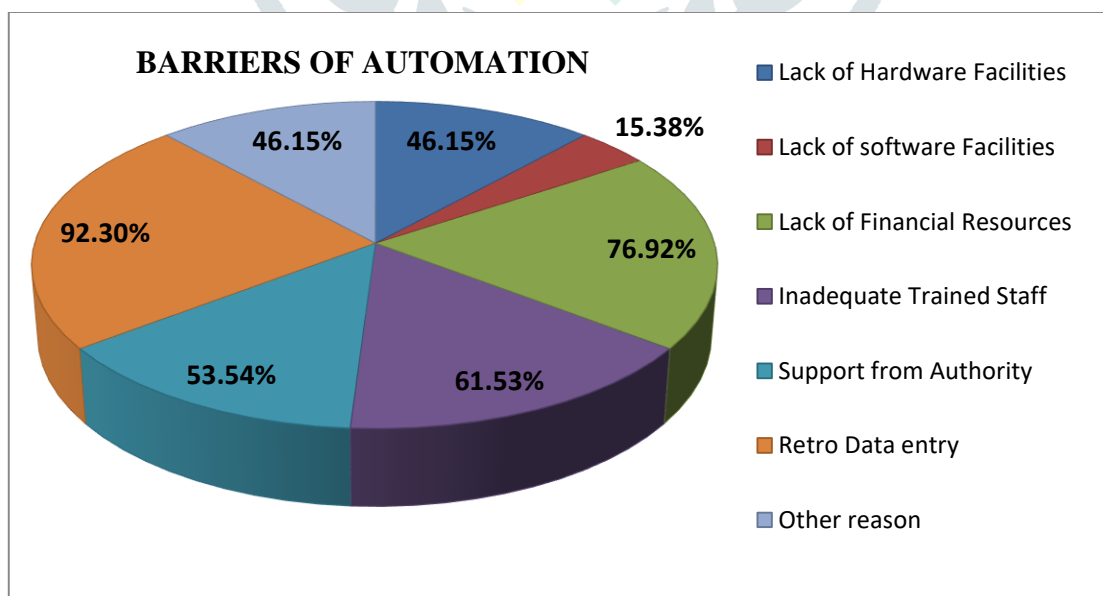


Figure 5: Major Barriers of Automation

13. CONCLUSION

In this study it can be concluded with requesting remarks that the librarian should come out with professional attitude and ethics to meet the all possible requirements just not to keep records to face NAAC and score good rating but also to meet quality, services, satisfaction and academic achievements. In these connection libraries have to be automated, digitized and to follow the best practices in order to improve quality and services to sustain in the everyday competition.

Use of ICT , library automation, digitization of library, enhancement of e-resources, use of social networking platform, development of e- content on MOOCs, active collaboration among the sister colleges and consortium to meet user satisfaction which are necessary to realize the importance of library and influence of librarian in an academic library. The authority should focus on library development on priority basis.

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