

PRESENT STATUS OF INFORMATION COMMUNICATION TECHNOLOGY INFRASTRUCTURE AND SERVICES IN COLLEGE LIBRARIES OF PURBA BARDHAMAN DISTRICT AFFILIATED TO THE BURDWAN UNIVERSITY.

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Abstract:

This paper Studied twenty-two (22) college libraries at Purba Bardhaman District, affiliated to the Burdwan University and try to find out the present status of ICT infrastructures and services in these college libraries. College is the first step in imparting higher education among the students. Library associated with the college plays an important role in teaching and learning process of students and faculty members. Therefore, it is very essential to pay enough attention for the development of these college libraries. This paper discussed various aspect of ICT application, infrastructure facilities, e-resource usage and services provided to the users. This paper also light throws on Different type of challenges and issues facing while implementing ICT in these college libraries. Study found that lack of human resources is common in almost all college. Negligence of higher authorities, lack of fund allocation, proper ICT implementation policy and ICT trained staffs are important issues facing by the colleges.

Keywords: ICT Infrastructure, College Library, Purba Bardhaman District, library services, Burdwan University

1. Introduction:

Library is an important part of human civilization. Library came to existence to serve the society. It plays an important role in social, cultural, political, and economical development of any country. It preserves the heritage of human civilization. Library plays an important role in mass education extension in our society. Academic library is regarded as the centre of learning community providing space for the students, faculty and researcher to advance in their knowledge. Library in higher educational institution is to active, dynamic and changing in nature with the passage of time. At this present era of ICT irrespective of kind of library it become essential to adopt and implement ICT in the library for their survival. College is the first step in higher education. College library services to the various categories of users. It possesses books, periodical, e-journal, e-database, conference proceedings, CD/DVD etc.

2. Review of Literature:

Sen, P., & Das, S. K. (2022) Investigated ICT infrastructure and e-resource usages in college libraries under West Bengal State University. Study revealed that most of the college located in rural area, N-List is the only subscription for e-resources. Lack of human resource, lack of finance, and sufficient trained staffs are main challenges facing by the colleges. Venu, A & Rao, Nageswar. K (2021) Surveyed selected government degree colleges in Telangana state, they revealed that most of the college library are not in fully developed state. Lack of finance, ICT trained human resources and co operation from the higher authorities are main hinderance for ICT implementation in college libraries.

Mahapatra, Prafulla 2019) Highlighted ICT infrastructure services in college libraries of Assam. It is found that all most all colleges have internet connectivity, hardware and software are available in the colleges. Majority of the colleges subscribed e-resources through Inflibnet, colleges are shifting from traditional to modern ICT enabled services. Lack of finance and trained man power is the main issues face by these colleges. **Kalbande DT & Chavana SP (2017)** Studied ICT infrastructure facilities available in agricultural college libraries in MPKV, Maharashtra. Study found that most of the college libraries don't have sufficient ICT infrastructure facilities. Negligence of authorities, lack of fund, suitable manpower, and techno phobia of the staffs are important challenges in proper ICT implementation in these colleges. **Chaudhary S & Sarmah Mukut (2017)** Evaluate the ICT infrastructure and application in selected college libraries in Cachar District of Assam. It is revealed that most of the college libraries are in developing stage in term of ICT implantation. Lack of sufficient fund and ICT trained staffs are the two main hinderances in ICT implementation in colleges libraries of Cachar District.

3. Objective of the Study:

- To assess the present status of ICT Infrastructure and services in college libraries of Purba Bardhaman District, affiliated to the Burdwan University.
- To identify the ICT implementation and ICT based services offered by the college library.
- To identify the availability of e-resources in the college library
- To know the human resource capacity in the college library
- To know the ICT skills of the library staffs.

4. Limitation of the study:

- The geographical coverage is limited to the Purba Bardhaman District in West Bengal.
- Only govt. and govt sponsored colleges are included in this study, private colleges are excluded from this study.

5. Methodology:

Research methodology used to achieve the objectives of the research. This study is descriptive in nature. The researcher used this kind of research to obtain first hand data from the respondent which helps to formulate rational and sound conclusion and recommendation for the study. Survey and interview are the techniques used in this study. Structured close ended questionnaires were formulated for data collection. Twenty-two (22) questionnaires were distributed among the college librarian in Purba Bardhaman District. SPSS and Excell software are used for analysis of the data collected from the survey. Researcher also visited the college website for collecting secondary data.

6. Purba Bardhamman District:

Purba Bardhamman also called Burdwan, a major communications centre located on the banks of the Damodar River, the town of Bardhamman is the district headquarters. It was named after the 24th Jain monk, Tirthankar Mahavir Bardhaman. During the Mughal rule, its name used to be Sharifabad. In the 17th-18th century, Krishnaram Ray, belonging to a merchant family from Punjab, established the zamindari of Bardhaman on a farman issued by the Mughal Emperor Aurangzeb. The Rays went on to rule Bardhaman till 1955. Various relics of Stone Age have been found in this district, and they are similar to the finds of the stone weapons and other relics discovered in Singhbhum, Purulia, Dhanbad and Bankura districts. This will suggest that portions of this entire zone had been in one and the same culture zone. The very name Bardhaman suggests a close association with Mahavira Bardhaman, the

twenty-fourth and the last Jain Tirthankar (pathfinder). There is a theory that the name Bardhaman is based on the contact this area had with Mahavira Bardhaman and Jainism. Burdwan also played an important role in the Gupta age and during the rule of the Sena kings. During the later Muslim and Mughal period Burdwan was an important administrative headquarters. It is here that Sher Afghan, the unfortunate husband of Nurjehan lived as a Jagirdar. Jehangir was anxious to bring over Nurjehan to his harem and had deputed Qutbuddin to Burdwan as his Subedar. Ultimately both Sher Afghan and Qutbuddin were killed in a fight somewhere near the present Burdwan railway station. The two graves of Sher Afghan and Qutbuddin lying side by side in Burdwan not only recall history but remind us rudely as to what man can do to satisfy his lust. It is again Burdwan that gave sanctum to the intellectual and spiritual divine, Pir Baharam when he had to leave Delhi due to the machinations of Abul Fazal and Faizi in Akbar's time. A Hindu divine Jaipal came in close touch with Pir Baharam and both enjoyed a mutual spiritual companionship. Incidentally the handover treaty of the three villages of Sutanuti, Gobindapur and Kolkata were signed between the East India Company and the Mughals at Bardhaman. Later the East India Company went on to rule India. These three villages grew up to today's Kolkata or Calcutta as it better known.

7. Data analysis and interpretation:

7.1 College Name & Website:

Table -1

| SL NO | Name of the college | Website |
|-------|---|---|
| 1 | Burdwan Raj College | https://burdwanrajcollege.ac.in |
| 2 | Shyamsundar College | https://syamsundarcollege.ac.in |
| 3 | Vivekananda College | https://vmbdn.in |
| 4 | MUC Womens College | https://www.mucwcburdwan.org |
| 5 | Katwa College | https://katwacollege.ac.in |
| 6 | Kalna College | https://www.kalnacollege.ac.in |
| 7 | Galsi Mahavidyalaya | https://galsimahavidyalaya.ac.in |
| 8 | Guskara College | https://www.gushkaramahavidyalaya.ac.in |
| 9 | Memary College | https://memaricollege.com/memari/index.php |
| 10 | Dr Bhupendra Nath Dutta Smiriti College | https://dbndsm.edu.in |
| 11 | Acharya Sukumar Sen Mahavidyalaya | http://www.sukumarsencollege.ac.in |
| 12 | Chandrapur College | https://www.chandrapurcollege.ac.in |
| 13 | Dasarathi Hazra Memorial College | https://www.bhatardhmc.in/dept_profile.php |
| 14 | Dr Gour Mohan Roy College | https://www.monteswardgrmroycollege.com |
| 15 | Govt.Genl. Degree College Mongalkote | https://www.mangalkotegovtcollege.org |
| 16 | Jamalpur Mahavidyalaya | https://www.jamalpurmahavidyalaya.net |
| 17 | Purbasthali College | https://www.purbasthalicollege.com |
| 18 | Mankar College | https://mankarcollege.ac.in |
| 19 | Sir Rashbehari Ghosh Mahavidyalaya | https://srgm.org.in |
| 20 | Tehatta Sadananda Mahavidyalaya | https://www.collegetsm.in |
| 21 | Govt. Genl. Degree. College, Kalna-I | https://www.ggdck.ac.in |
| 22 | Kandra Radha Kanta Kundu Mahavidyalaya | https://www.kandrarkkmahavidyalaya.org |

7.2 Questionnaire Distribution & response rate:

Table- 2

| Questionnaire Distribution | Questionnaire Received | Percentage |
|----------------------------|------------------------|------------|
|----------------------------|------------------------|------------|

| | | |
|----|----|-------|
| 22 | 22 | 100 % |
|----|----|-------|

The table 1 put to show questionnaire distribution and response rate. 22 questionnaires were distributed among the librarian the receiving rate is 100%

7.3 College location:

The colleges under this study, location wise has been divided into two category i.e Urban and Rural.

Table -3

| Location of the college | No of the college | Percentage |
|-------------------------|-------------------|------------|
| Rural | 14 | 63.7 % |
| Urban | 8 | 36.3 % |

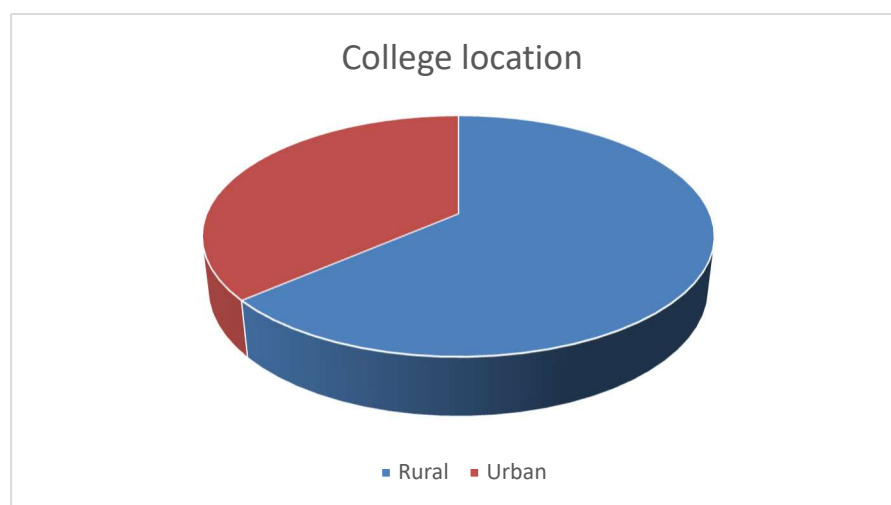


Fig.1 College location

7.4 Information about library collection

Table: 4

| Sl. No of College | Books | Periodical | E-Journal | Printed Journal | Reference sources | E-Books | Conference proceedings |
|-------------------|-------|------------|-----------|-----------------|-------------------|---------|------------------------|
| 1 | Y | Y | Y | Y | Y | Y | Y |
| 2 | Y | Y | Y | Y | Y | Y | Y |
| 3 | Y | Y | Y | Y | Y | Y | Y |
| 4 | Y | Y | Y | Y | Y | Y | Y |
| 5 | Y | Y | Y | Y | Y | Y | Y |
| 6 | Y | Y | Y | Y | Y | Y | Y |
| 7 | Y | Y | Y | Y | Y | Y | Y |
| 8 | Y | Y | Y | Y | Y | Y | Y |
| 9 | Y | Y | Y | Y | Y | Y | Y |
| 10 | Y | Y | Y | Y | Y | Y | Y |

| | | | | | | | |
|----|---|---|---|---|---|---|---|
| 11 | Y | Y | Y | Y | Y | Y | Y |
| 12 | Y | Y | Y | Y | Y | Y | Y |
| 13 | Y | Y | Y | Y | Y | Y | Y |
| 14 | Y | Y | Y | Y | Y | Y | Y |
| 15 | Y | Y | Y | Y | Y | Y | Y |
| 16 | Y | Y | N | Y | Y | N | N |
| 17 | Y | Y | Y | Y | Y | Y | Y |
| 18 | Y | Y | Y | Y | Y | Y | Y |
| 19 | Y | Y | N | Y | Y | N | N |
| 20 | Y | Y | Y | Y | Y | Y | Y |
| 21 | Y | Y | Y | Y | Y | Y | Y |
| 22 | Y | Y | Y | Y | Y | Y | Y |

Note: Y=Yes N=No

The above table shows that all college possess books, period, reference sources, printed journals. Except two colleges i.e college no 16, 19 all colleges have e-journals and e-books access facilities. Only colleges Sl. No 1-9 possess conference proceedings. College serial no 16 and 19 do not have the collection of conference proceedings.

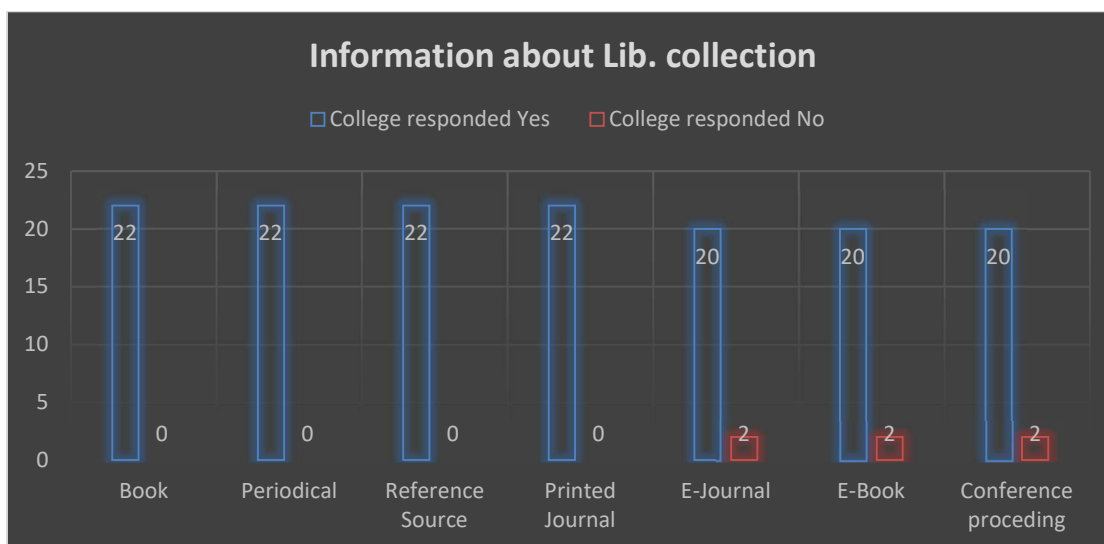


Fig. 2 Information about library collection

7.5 Library Services

Table -5

| Sl. No of College | Circulation service | Reference service | E-resource facility | Reprographic service | Int. library loan | Current awareness |
|-------------------|---------------------|-------------------|---------------------|----------------------|-------------------|-------------------|
| 1 | Y | Y | Y | Y | Y | Y |
| 2 | Y | Y | Y | Y | Y | Y |
| 3 | Y | Y | Y | Y | Y | Y |
| 4 | Y | Y | Y | Y | Y | Y |
| 5 | Y | Y | Y | Y | Y | Y |
| 6 | Y | Y | Y | Y | Y | Y |

| | | | | | | |
|----|---|---|---|---|---|---|
| 7 | Y | Y | Y | Y | Y | Y |
| 8 | Y | Y | Y | Y | Y | Y |
| 9 | Y | Y | Y | Y | Y | Y |
| 10 | Y | Y | Y | Y | Y | Y |
| 11 | Y | Y | Y | Y | Y | Y |
| 12 | Y | Y | Y | Y | N | Y |
| 13 | Y | Y | Y | Y | N | Y |
| 14 | Y | Y | Y | Y | Y | Y |
| 15 | Y | Y | Y | Y | Y | Y |
| 16 | Y | Y | N | Y | N | Y |
| 17 | Y | Y | Y | Y | Y | Y |
| 18 | Y | Y | Y | Y | N | Y |
| 19 | Y | Y | N | Y | N | Y |
| 20 | Y | Y | Y | Y | N | Y |
| 21 | Y | Y | Y | Y | Y | Y |
| 22 | Y | Y | Y | Y | Y | Y |

Note: Y=Yes N=No

All most all the colleges provides circulation service, Reference service, Reprographic service and current awareness services. Except college serial number 16 and 19 which are recently established, all the colleges provide e-resource services to the users. Except college serial number 12, 13, 16, 18, 19, and 20 all colleges provide interlibrary loan services.

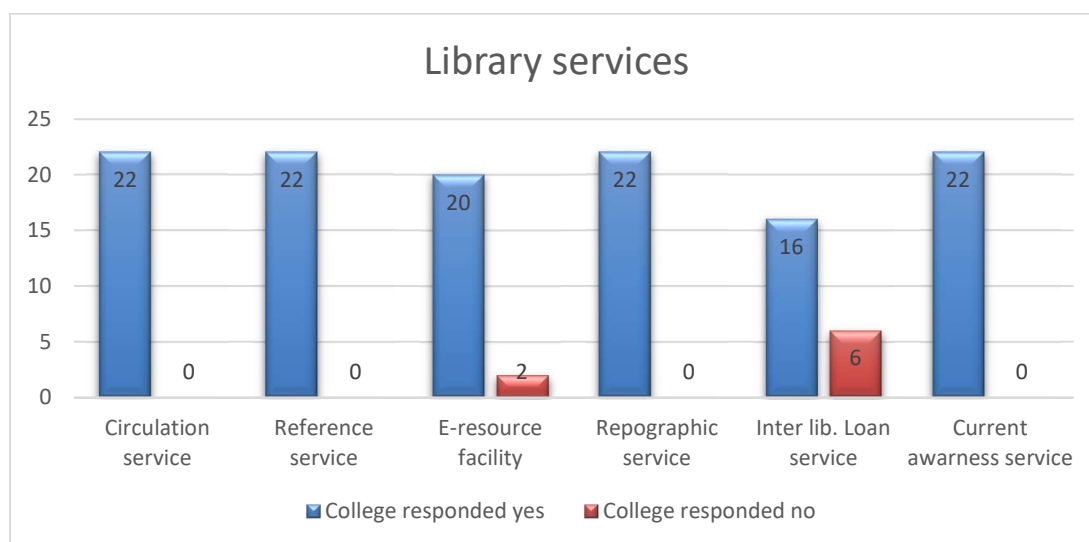


Fig.3 Library Services

7.6 Availability of e-resources

Table-6

| Sl No of College | E-Book | E-Journal | E-Database | CD/DVD | Institutional Repository |
|------------------|--------|-----------|------------|--------|--------------------------|
| 1 | Y | Y | Y | Y | Y |
| 2 | Y | Y | Y | Y | Y |

| | | | | | |
|----|---|---|---|---|---|
| 3 | Y | Y | Y | Y | Y |
| 4 | Y | Y | Y | Y | Y |
| 5 | Y | Y | Y | Y | Y |
| 6 | Y | Y | Y | Y | Y |
| 7 | Y | Y | Y | Y | Y |
| 8 | Y | Y | Y | Y | Y |
| 9 | Y | Y | Y | Y | N |
| 10 | Y | Y | Y | Y | N |
| 11 | Y | Y | Y | Y | N |
| 12 | Y | Y | Y | Y | N |
| 13 | Y | Y | Y | Y | N |
| 14 | Y | Y | Y | Y | N |
| 15 | Y | Y | Y | Y | N |
| 16 | N | N | N | N | N |
| 17 | Y | Y | Y | Y | N |
| 18 | Y | Y | Y | Y | N |
| 19 | N | N | N | N | N |
| 20 | Y | Y | Y | Y | N |
| 21 | Y | Y | Y | Y | N |
| 22 | Y | Y | Y | Y | N |

Note: Y=Yes N=No

It is clear from the above table that except college serial no16 and 19 all most all colleges have e-book, e-journal, e-database, CD/DVD resources for their users. Only eight (8) colleges sl no 1-8 have institutional repository facilities and rest of the colleges do not have any institutional repository facilities.

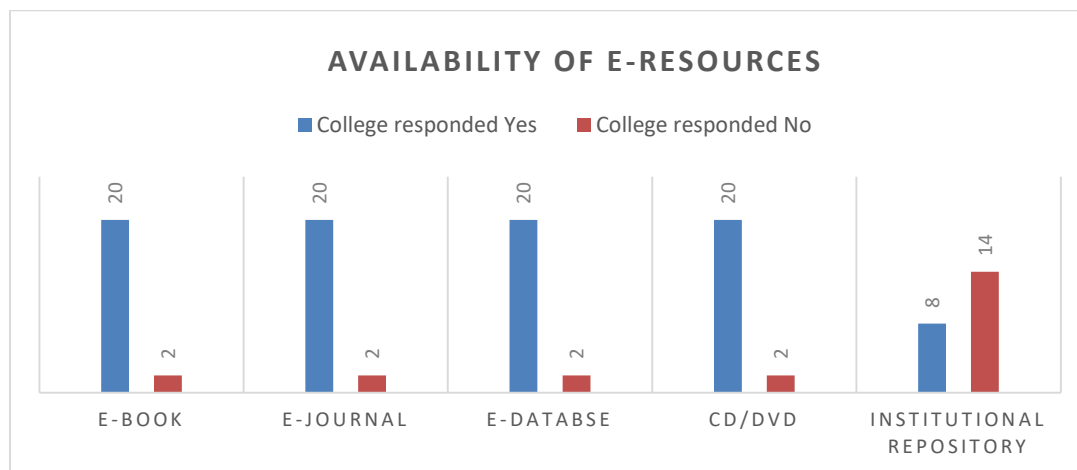


Fig.4 Availability of e-resources

7.7 Problem in ICT implementation:

Table -7

| Serial No of College |
|----------------------|
|----------------------|

| Problems | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 |
|--------------------------------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Absence of IT training | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y |
| In sufficiency of Staff | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y |
| Staff not interactive | N | N | N | N | N | N | N | N | N | N | N | Y | Y | N | Y | Y | N | N | N | N | N | N |
| Negligence of higher authority | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y |
| Financial issues | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y |
| Burden of work | Y | Y | Y | Y | Y | Y | N | N | Y | N | Y | Y | Y | Y | Y | Y | N | N | N | N | N | N |

Note: Y=Yes N=No

Table 7 put to shows the problem face in ICT implementation in the college libraries. The above table shows that al most all colleges responded **Yes** that they have absence of IT training, insufficient of staffs, negligence of higher authority and the problem of financial issues. All most all colleges responded **No** that staff are not interactive. Thirteen (13) colleges responded that they have burden of work nine colleges (9) responded No they does not have any burden of work.

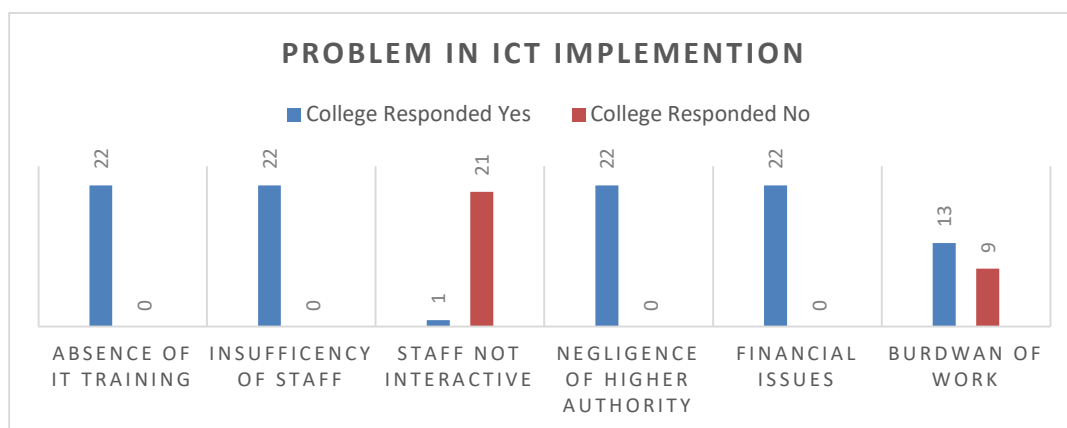


Fig.5 Problem in ICT implementation

7.8 ICT Tools available in the College library

Table 8

| No of tools | No College | Percentage |
|---------------|------------|------------|
| Printer | 22 | 100% |
| Scanner | 22 | 100% |
| Server | 20 | 90.9% |
| Central UPS | 15 | 68.1% |
| Xerox machine | 19 | 86.3% |
| CCTV | 18 | 81.8% |

It is clear from the above table that 100% colleges have printer and scanner while 20(90.9%) colleges

have server, 15(68.1%) have central UPS, 19(86.3%) colleges have xerox machine and only 18(81.8%) colleges have CCTV in their library.

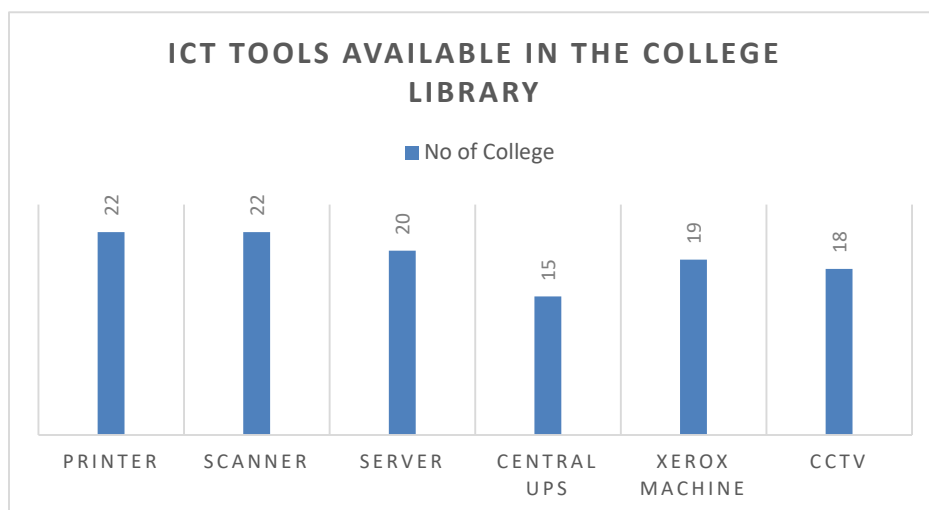


Fig.6 ICT tools available in the college library

7.9 Library Automation Software Use

Table 9

| Software | No of colleges | Percentage |
|------------------|----------------|------------|
| KOHA | 19 | 86.36% |
| SOUL | 0 | 0 |
| Local software | 0 | 0 |
| Without software | 3 | 13.63% |
| Others | 0 | 0 |

The above table 9 shows that 19(86.36%) college out of 22 college use KOHA software for their library automation purpose and only 3(13.63%) college does not have any library software for automation purpose.

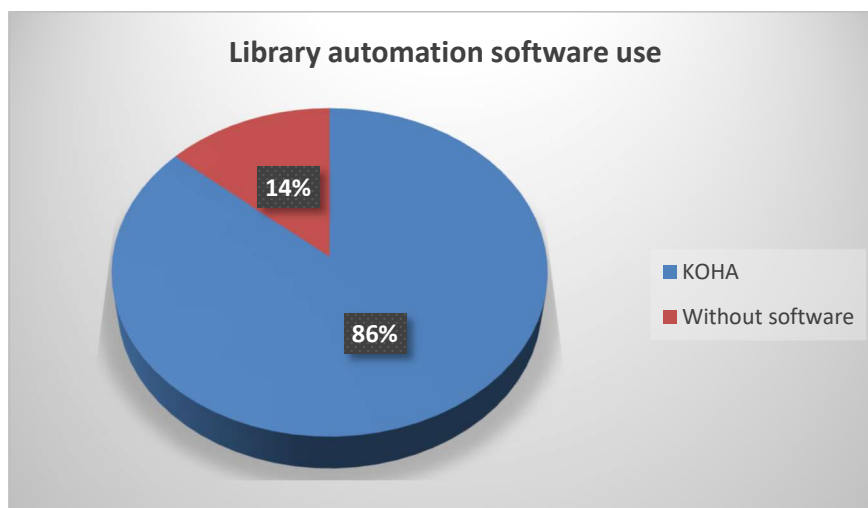


Fig. 7 Library automation software use

7.10 Status of Library Automation

Table 10

| Stages | No of college | Percentage |
|---------------------|---------------|------------|
| Fully automated | 2 | 10% |
| Partially automated | 16 | 86.7% |
| Initial stage | 4 | 3.3% |
| Manual | 0 | 0% |

Table 10 shows the library automation stages. It is shows that 10% colleges are fully automated while 86.7% colleges are partially automated and only 3.3% colleges are in their initial stages of library automation. There is no manually operated college.

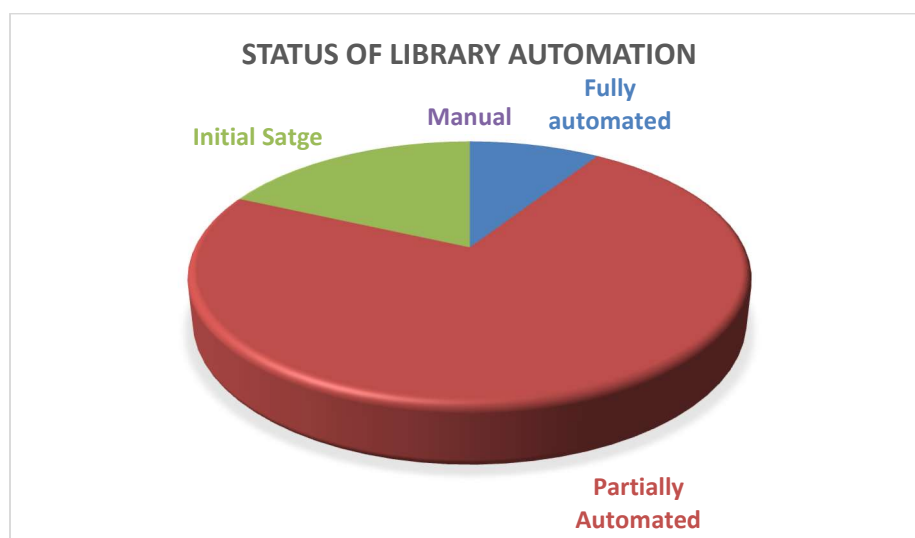


Fig. 8 Library Automation Stages

7.11 ICT Based Services Offered to The Library Users

Table 11

| Service | No of college | Percentage |
|-------------------------------|---------------|------------|
| Computerized lending services | 22 | 100% |
| Internet browsing facilities | 22 | 100% |
| E-Information services | 20 | 90.90% |
| Web based services | 12 | 54.54% |
| Printing services | 12 | 54.54% |
| N-List services | 20 | 90.90% |
| Digital Reference services | 16 | 72.72% |

The above table shows that 100% colleges provide computer lending and internet browsing facilities to the users. 90.90% colleges provide e-information services, 54.54% colleges offer web based and printing services. 90.90% colleges provide N-List services and only 72.72% colleges provide digital reference services to the users.

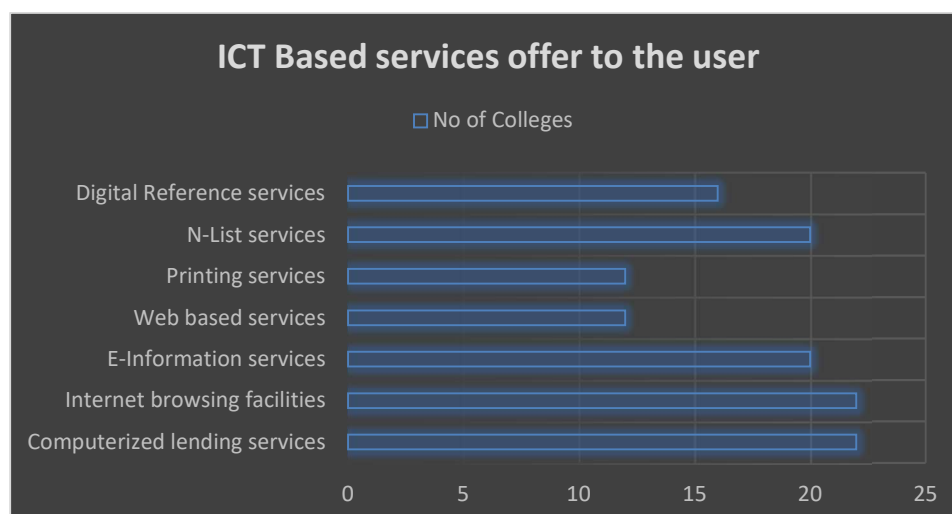


Fig.9 ICT Based services offered to the library users

7.12 Internet speed in the College Library.

| Bandwidth of internet | No of colleges |
|-----------------------|----------------|
| 1-10 Mbps | 0 |
| 11-20 Mbps | 0 |
| 21-30 Mbps | 0 |
| 31-40 Mbps | 1 |
| 41-50 Mbps | 5 |
| 51-60 Mbps | 5 |
| 61-70 Mbps | 2 |
| 71-80 Mbps | 3 |
| 81-90 Mbps | 3 |
| 91-100 Mbps | 3 |

Table 12

The above table put to show the internet speed in the college libraries in the Purba Bardhaman District. Table shows that there is only one college in range of 31-40Mbps speed, there are five colleges in the range of 41-50Mbps and five colleges in between 51-60Mbps. Only two college libraries have internet speed in between 61-70 Mbps while three college libraries have 81-90 Mbps and only three college libraries have 91-100 Mbps which is the highest.

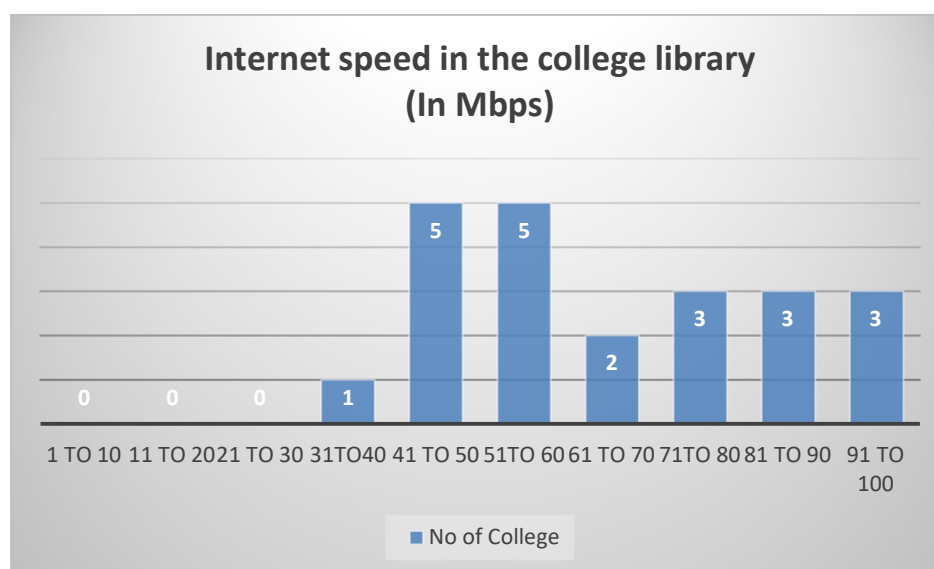


Fig. 10 Internet speed in the college library

7.13 Human Resources in the library.**Table 13**

| Name of the college | Librarian | Library Clerk | Library Peon/Attendant | Library other casual staff |
|---|-----------|---------------|------------------------|----------------------------|
| Burdwan Raj College | 2 | 2 | 4 | - |
| Shyamsundar College | 2 | 1 | 2 | - |
| Vivekananda College | 2 | 1 | 1 | - |
| MUC Womens College | 2 | 1 | 2 | - |
| Katwa College | 3 | 3 | 3 | - |
| Kalna College | 1 | 1 | 1 | 1 |
| Galsi Mahavidyalaya | -- | 1 | 2 | -- |
| Guskara College | 2 | | 1 | 1 |
| Memary College | 1 | 1 | -- | 2 |
| Dr Bhupendra Nath Dutta Smiriti College | 1 | 2 | 1 | -- |
| Acharya Sukumar Sen Mahavidyalaya | -- | 1 | 1 | -- |
| Chandrapur College | 1 | 1 | 1 | -- |
| Dasarathi Hazra Memorial College | -- | 1 | 1 | -- |
| Dr Gour Mohan Roy College | 1 | 1 | 1 | -- |
| Govt.Genl. Degree College Mongalkote | -- | 1 | 1 | 1 |
| Jamalpur Mahavidyalaya | -- | 1 | 1 | -- |
| Purbasthali College | 1 | 1 | 1 | -- |
| Mankar College | 1 | 1 | 1 | -- |
| Sir Rashbehari Ghosh | -- | 1 | 1 | -- |

| | | | | |
|--|---|---|---|----|
| Mahavidyalaya | | | | |
| Tehatta Sadananda Mahavidyalaya | 1 | 1 | 1 | - |
| Govt. Genl. Degree. College, Kalna-I | 1 | 1 | 1 | -- |
| Kandra Radha Kanta Kundu Mahavidyalaya | 1 | 1 | 1 | -- |

Table 5.13 put to show the human resources available in the college libraries in the Purba Bardhaman District. It is shows that there are three sanction post in the library, librarian, library assistant and library attendant/peon. Six colleges have more than one librarian, six colleges have no permanent librarian, rest of the colleges have single librarian. There is a provision of casual contractual staff in the library.

8. Findings:

1. Most of the colleges possess e-resources only two colleges do not have e-resources.
2. Lack of human resource is common in all the colleges.
3. Inadequacy of finance is the most important drawback for implementing ICT.
4. Negligence of higher authority for implementing ICT
5. Lack of proper ICT policy.
6. All the colleges provide traditional library services.
7. Only eight colleges possess institutional repository and rest of the colleges do not have any institutional repository.
8. Most of the college provides PG courses but with limited subject.
9. ICT infrastructures are not so adequate in these colleges.
10. Lack of training among the staffs.
11. Librarian post in the six colleges laying vacant for long time.

9. Suggestion:

1. Proper ICT implementation policy should be developed in these colleges.
2. Higher authorities of these colleges should take serious step for improvement of information Communication Technology Infrastructure
3. Staffs needs proper training on ICT application and users' orientation should be conducted regularly.
4. Govt should allocate more fund to these colleges for the survival of these colleges with latest ICT environment.
5. Staff of these college libraries should come forward first to draft a proposal for proper ICT implementation and submit it to the higher authorities for approval.
6. Vacant post in the library should be recruited immediately for smooth functioning of the library.

10. Conclusion:

College library hold an important position in the academic institution. It helps to fulfil the objectives of the colleges and accelerate the teaching and learning process in the college. Due to the information explosion and huge growth of electronic resources it is inevitable for the college to extend their ICT infrastructures. In West Bengal Still many colleges lagging behind in proper ICT implementation, Government should take action in this regard. To build up a sound nation and civilized society government should take necessary action to revive the library services and existing infrastructure facilities with latest ICT enabled resources and services. Due to the various obstacle libraries are fail to

satisfy the demand of the users. Govt already has started various initiatives for betterment of library services and the situation is changing gradually. There are thousands of students are enrolled in these colleges for pursuing their higher education but still there is a lack of ICT infrastructure. Hope, in future higher authorities will take necessary step to improve the ICT infrastructures.

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