Application and Utilization of ICT in the Degree College Libraries of Assam

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Abstract

The study has investigated the application and utilization of ICT in the degree college libraries of Assam. Two sets of structured questionnaires have prepared to collect the data from the respondents. The questionnaires were distributed to 192 colleges, out of which 126 colleges have responded. Again, user questionnaires were distributed to 784 users of different colleges, out of which 540 questionnaires have received. The findings of the study have revealed that the use of ICT in college libraries has improved the management of library activities. The users' opinion on the use of ICT in college libraries is found satisfactory. The main problems to implement ICT in the college libraries are due to lack of IT skilled manpower, inadequate training in ICT applications and lack of IT infrastructure and network facilities. The study has suggested that hardware and software facilities should be upgraded regularly to improve the additional features while delivering library services in the ICT environment.

Keywords: ICT Infrastructure, ICT Based Library Services, Library Automation, Institutional repositories, College Libraries, Assam.

1. Introduction:

Application of Information and Communication Technology (ICT) in libraries has been offering sufficient opportunities to automate the library, create digital libraries, providing resource sharing networks, value-added information services and initiate capacity building programs for the library staff and users. The use of ICT in libraries has facilitated better security services and fulfils the needs of the user as per their requirements. It also used to develop new information services and improving the productivity and efficiency of library services. The ICT based resources help to reduce library space by using the electronic storage media, digital and virtual libraries[1].

The quality of an academic institution depends upon the quality of services provided by the academic libraries. The college libraries have a tremendous role towards enhancing the knowledge and skills of the academic students in both rural and urban communities. The college libraries can fulfil the needs of the students, teachers and researchers by providing different kinds of printed or digital resources. Better and effective library services can be ensured by the application of ICTs with skilled and qualified library manpower. Now-a- days, different agencies such as Rashtriya Uchchatar Shiksha Abhiyan (RUSA), University Grants Commission (UGC), Information and Library Network (INFLIBNET), concerned state government and the local enterprises have been taking great initiatives to develop the educational institution. Application and utilization of ICT in the College libraries of Assam is a new aspect of research which will identify the ICT infrastructure, status of library automation and institutional repositories, barriers associated with the implementing of ICTs, ICT based services extended to the users and impact of ICT on users in the college libraries[1].

2. Literature Review:

Mahanta and Das[2] found that ICT infrastructure in the college libraries of Assam has improved. All the surveyed libraries are found automated and they have been using Software for University Libraries (SOUL) whereas few libraries have institutional repository, and most of them have been using Dspace. All the libraries are providing internet facilities to the library users. Most of the users are found satisfied with the use of ICT in the college libraries. Atonring[3] have carried out a study on information and communication technology infrastructure in the university libraries of Tamil Nadu. The study was focused on modern technologies for the library management and availability of ICT infrastructure among arts and science university libraries in Tamil Nadu. Mondal and Bandyopadhyay[4] have carried out a study on the availability of ICT infrastructure in the university libraries of West Bengal. The

ICT infrastructure in the university libraries of West Bengal is still in developing stage. Most of the university libraries of West Bengal have found minimum infrastructure for implementation of ICT. Patil, *et al.*[5] have carried out a study on ICT applications in Agriculture University libraries in western India. The study conducted among eight agriculture universities of the western part of India. The findings of the study have revealed that two university libraries have completed the 100 percent level of library automation, four university libraries have achieved 75 percent level of automation work and remaining two university libraries have achieved 50 percent level of automation work. The study has found that eighty-eight percent libraries have initiated to create digital library with the funds provided by ICAR. Saleem, *et al.*[6] found that the application of ICT tools has been increasing in academic libraries, especially in engineering and arts and science colleges. Most of the academic libraries have expressed that usage of internet has found less due to proper LAN connection. Mondal and Bandyopadhyay[7] found that all the college libraries have computers for computerize the library system but LAN facility was limited. Most of the libraries have acquired library management software. The libraries have faced few problems to implement IT such as financial constraints, the less interest the authority to upgrade IT, lack of trained manpower, etc. Haneefa[8] have conducted a study on the use of ICT based resources and services in the special libraries of Kerala. Email service has found as the ICT based services which was used by the largest number of users. A good number of users are not satisfied with the application of ICT in their libraries. They also indicated that inadequate ICT infrastructure is the main reason to dissatisfy the use ICT. The study has suggested that formal training and user orientation program should be provided to the users for effective use of ICT based resources and services.

3. Objectives of the Study:

The key objectives to fulfil the aims of the study are as follows:

a) To identify the ICT infrastructure facilities in the college libraries of Assam;

b) To identify the status of automation in the college libraries of Assam;

c) To identify the status of institutional repositories in the college libraries of Assam;

d) To identify the barriers associated with the implementation of ICTs in the college libraries of Assam;

e) To find out the ICT based services extended to the users by the college libraries in Assam;

f) To find out the level of users' satisfaction with the use of ICT in the college libraries; and

g) To find out the impact of ICT on the users in the college libraries of Assam.

4. Hypotheses:

a) Use of ICT has substantially improved the management of library activities with the facilities available.

b) Users'opinion on the use of ICT in college libraries is not satisfactory.

c) Impact of ICT on users is found positive.

5. Scope and limitation of the study:

The study covers the degree colleges, including government and provincialised colleges which have been imparting general education in Assam. There are 298 colleges imparting general education in Assam excluding the colleges which are imparting technical, medical, management, law and special subject or other colleges related to professional degree. Out of the 298, 192 colleges are provincialised before 2012 and likely to have proper infrastructure and facilities, so, they are considered for the present study. As all the new colleges which are provincialised after 2012 yet to have proper infrastructure and faculties, therefore, they are excluded from the study

6. Research Methodology:

The study has adopted questionnaire, interview and observation method for collection of primary data. One set of structured questionnaires have been prepared for the librarians and it is distributed to 192 colleges out of which 126 colleges have responded. The purpose of the questionnaire for the librarians is to get data regarding the application of ICT in the college libraries of Assam. The questionnaires were distributed to the respondents by personally or by e-mail, send to the college librarians and the same were received personally or through E-mail. Certain data have been collected by personal observation during the visit to the libraries. A few data were also collected through telephonic interview.

A second set of questionnaire is prepared for the library users to gather data regarding the use of ICTs in the college libraries of Assam and it is distributed only to the users of those libraries that have ICT infrastructure (as obtained from the questionnaire sent to the librarians). The second set of questionnaire is sent to the user of those libraries that provide internet-based services, entered at least 75% of their bibliographic data of the books available in the library in any Integrated Library Management Software (ILMS) and undertaken the initiative of developing institutional repository and all these criteria's are fulfilled only by 51 (40.5%) libraries. The questionnaire has distributed to 784 users of different colleges which

are eligible for user study, out of which total 540 questionnaires have to fill up and received. The percentage of the response rate of the users is 68.9%.

The data obtained from the filled up questionnaires is classified, analyzed, tabulated and logically interpreted. Well known statistical package SPSS has been used to find out the frequency, mean and standard deviation of the research objectives. It is also used to test the hypotheses.

7. Result and Discussion:

7.1 ICT Infrastructure in the College Library:

a) **Hardware Facilities:** Table 1 depicts that out of 126 surveyed college libraries, the highest 125(99.2%) of the libraries have CCTV facilities followed by 121(96.0%) of the libraries have photocopy machine. Subsequently, data in gradation are 118(93.7%) college libraries possessed server machine; 117(92.9%) libraries have desktop facility; 107(84.9%) libraries have scanner for general purposes; 95(75.4%) libraries have barcode scanner; 94(74.6%) libraries have barcode printer; 83(65.9%) libraries have telephone; 79(62.7%) libraries have backup device; 56(44.4%) libraries have scanner for digitization; 37(29.4%) libraries have projector; 26(20.6%) libraries have identity card printer and the least 25(19.8%) libraries have laptop facility.

S.No	Hardware facility	Response (%)	Mean	Rank	Std. Dv
**Table 1: Hardware Facilities in the Libraries (N=126)**
1	Server	118(93.7%)	.9365	3	.24482
2	Desktop	117(92.9%)	.9286	4	.25857
3	Laptop	25(19.8%)	.1984	13	.40040
4	Printer	118(93.7%)	.9365	3	.24482
5	Scanner for general purposes	107(84.9%)	.8492	5	.35928
6	Scanner for digitization	56(44.4%)	.4444	10	.49889
7	Barcode scanner	95(75.4%)	.7540	6	.43242
8	Barcode Printer	94(74.6%)	.7460	7	.43702
9	Backup devices	79(62.7%)	.6270	9	.48554
10	Projector	37(29.4%)	.2937	11	.45725
11	Identity card printer	26(20.6%)	.2063	12	.40630
12	CCTV	125(99.2%)	.9921	1	.08909
13	Photocopy machine	121(96.0%)	.9603	2	.19599
14	Telephone	83(65.9%)	.6587	8	.47603

b) **Software facilities:** Table-2 depicts that out of 126 surveyed libraries, the highest 122(96.8%) of libraries have library management software followed by 111(88.1%) of the libraries that have anti-virus software while 65(51.6%) of the libraries have institutional repository software.

	Table 2: Software Facility in the Libraries (N=126)				
S.No	Software facility	Response (%)	Mean	Rank	Std. Dv
1	Library Management	122(96.8%)	.9683	1	.17602
2	Institutional repository	65(51.6%)	.5159	3	.50174
3	Anti-virus	111(88.1%)	.8810	2	.32514

c) ICT based technologies in the libraries: Table 3 depicts that out of 126 surveyed libraries, the highest 120(95.2%) of libraries have internet technology followed by 92(73.0%) of libraries has barcode technology. Very few 11(8.7%) of libraries have the video conference technology and 4(3.2%) of libraries have RFID technology.

	Table 3: ICT based technologies in the libraries (N=126)				
S.No	ICT based technologies	Response (%)	Mean	Rank	Std. Dv
1	Barcode	92(73.0%)	.7302	2	.44565
2	RFID	4(3.2%)	.0317	4	.17602
3	Video Conference	11(8.7%)	.0873	3	.28340
4	Internet	120(95.2%)	.9524	1	.21381

7.2 Status of Library Automation in the Libraries:

a) Views on library automation: Table 4 shows that among the 126 surveyed libraries, there are 67(53.2%) libraries are partially automated while 55(43.7%) libraries are fully automated. The least 4(3.1%) of libraries are found not automated.

	Table 4: Views on library automation (N=126)		
S.No	Views	Responses	Percentage
1	Fully automated	55	43.7
2	Partially automated	67	53.2
3	Not automated	4	3.1
	Total	126	100.0

b) Level of automation achieved by the libraries: Table 5 depicts the level of automation achieved by the college libraries in Assam. It shows the mean value of the acquisition, cataloguing, circulation, serial control and OPAC is 1.08, 4.27, 3.59, 1.28 and 4.11 respectively.

	Table 5: Level of automation achieved (N=126)								
S.No	Automation Modules	0%	Below 25%	25%	50%	75%	100%	Mean	Std. Dv
1	Acquisition	46.8	34.9	3.2	3.2	2.4	9.5	1.08	1.542
2	Cataloguing	4.8	0	0	9.5	30.2	55.6	4.27	1.162
3	Circulation	17.5	11.1	.8	.8	5.6	64.3	3.59	2.083
4	Serial control	41.3	36.5	5.6	1.6	0	15.1	1.28	1.700
5	OPAC	11.1	6.3	1.6	0	3.2	77.8	4.11	1.790

7.3 Status of Institutional Repositories:

a) Views on Institutional Repositories: Table 6 depicts that among the 126 surveyed libraries, there are 51(40.5%) libraries have institutional repositories while 26(20.6%) libraries are still in process and 49(38.9%) of libraries do not have institutional repository.

S.No	Institutional repositories	Responses	Percentage
	Table 6: Views on Institutional repositories (N=126)		
1	Available	51	40.5
2	Still in process	26	20.6
3	Not available	49	38.9
	Total	126	100.0

b) Repository software used by the library: Table 7 depicts that out of 126 surveyed libraries, the highest 62(49.2%) libraries have been using DSpace while 7(5.6%) libraries have been using other local made digital library software and the least 2(1.6%) libraries have been using Greenstone.

	Table 7: Repository software used (N=126)						
S.No	Description	Yes	%	No	%	Rank	Mean
1	DSpace	62	49.2	64	50.8	1	.4920
2	Greenstone	2	1.6	124	98.4	3	.0158
3	Other	7	5.6	119	94.4	2	.0555

c) Documents digitized by the library: Table 8 depicts that out of 126 surveyed libraries, the maximum 58(46.0%) libraries have digitized question paper followed by 49(38.9%) libraries have digitized magazine. Subsequently, 45(35.7%) libraries have digitized prospectus; 38(30.2%) of each college libraries have digitized books, conference proceeding and photo gallery; 30(23.8%) libraries have digitized journals; 27(21.4%) libraries have digitized dissertation; 26(20.6%) libraries have digitized leaflet and least 24(19.0%) libraries have digitized theses.

	Table 8: Documents digitized by the libraries (N=126)						
S.No	Description	Yes	%	No	%	Rank	Mean
1	Books	38	30.2	88	69.8	4	.3016
2	Journals	30	23.8	96	76.2	5	.2381
3	Magazine	49	38.9	77	61.1	2	.3889
4	Conference proceeding	38	30.2	88	69.8	4	.3016
5	Dissertation	27	21.4	99	78.6	6	.2143
6	Theses	24	19.0	102	81.0	8	.1905
7	Question paper	58	46.0	68	54.0	1	.4603
8	Leaflet	26	20.6	100	79.4	7	.2063
9	Prospectus	45	35.7	81	64.3	3	.3571
10	Photo Gallery	38	30.2	88	69.8	4	.3016

7.4 Barriers Associated with the Implementation of ICT:

Table 9 shows that out of 126 surveyed libraries, the highest 103(81.7%) of libraries have faced problem due to lack of IT skilled manpower. Subsequently, 84(66.7%) libraries have faced problem caused by inadequate training in ICT applications whereas 71(56.3%) libraries have lack of IT infrastructure and network facility; 62(49.2%) libraries have work overload; 60(47.6%)of each library have lack of budget for ICT and erratic power supply; 45(35.7%) libraries have lack of upgrading ICT strategy; 42(33.3%) libraries have non availability of consultation services; 41(32.5%) libraries have lack of support from authorities; 23(18.3%) libraries have lack of interest in learning ICT application and 18(14.3%) libraries have lack of co-ordination among library staff

S.No	Description	Response (%)	Rank	Mean	Std. Dv
Table 9: Barriers Associated with the Implementation of ICT (N=126)					
1	Inadequate training in ICT applications	84(66.7%)	2	.6667	.47329
2	Lack of IT infrastructure and network facility	71(56.3%)	3	.5635	.49793
3	Lack of support from authorities	41(32.5%)	8	.3254	.47039
4	Lack of budget for ICT	60(47.6%)	5	.4762	.50143
5	Lack of Co-ordination among library Staff	18(14.3%)	10	.1429	.35132
6	Non availability of consultation services	42(33.3%)	7	.3333	.47329
7	Lack of upgrading ICT strategy	45(35.7%)	6	.3571	.48107
8	Lack of interest in learning ICT application	23(18.3%)	9	.1825	.38783
9	Overload of work	62(49.2%)	4	.4921	.50193
10	Erratic Power supply	60(47.6%)	5	.4762	.50143
11	Lack of IT skilled manpower	103(81.7%)	1	.8175	.38783

7.5 ICT-based Services Extended to the Library Users:

Table 10 shows that out of 540 respondents, the highest 441(81.7%) of users have responded that they have been using internet services followed by 432(80.0%) of users using desktop facility. Subsequent data in the gradation are 423(78.3%) users using photocopy service; 285(52.8%) users using OPAC service; 298(55.2%) users using the printing facility; 270(50.0%) users using lending service; 262(48.5%) users using institutional repository services; 234(43.3%) users using online database services; 216(40.0%) users using the CD-ROM facility; 198(36.7%) users using scanning facility; 162(30.0%) users using electronic database services and 26(4.8%) users using document delivery service.

	Table 10: ICT-based Services Extended (N=540)				
S.No	Description	Response (%)	Rank	Mean	Std.Dv
1	Online Database Services	234(43.3%)	8	.4333	.49600
2	Electronic Database	162(30.0%)	11	.3000	.45868
3	Institutional Repository services	262(48.5%)	7	.4852	.50024
4	Document Delivery service	26(4.8%)	12	.0481	.21428
5	Internet Service	441(81.7%)	1	.8167	.38730
6	OPAC	285(52.8%)	4	.5278	.49969
7	Lending Service	270(50.0%)	6	.5000	.50046
8	CD-ROM	216(40.0%)	9	.4000	.49035
9	Scanning facility	198(36.7%)	10	.3667	.48234
10	Printing facility	298(55.2%)	5	.5519	.49777
11	Photocopy Service	423(78.3%)	3	.7833	.41236
12	Desktop facility	432(80.0%)	2	.8000	.40037

7.6 Level of Users' Satisfaction with the Use of ICT:

Table 11 shows that among the 540 respondents, 270(50.0%) of users have expressed 'satisfied' with the use of ICT in the college libraries whereas 189(35.0%) users indicated that they are 'not satisfied' and only 81(15.0%) users expressed that they are 'highly satisfied' with the use of ICT.

	Table 11: Level of Users' Satisfaction with the Use of ICT(N =540)		
S.No	Level of satisfaction	Response	Percentage
1	Highly satisfied	81	15.0
2	Satisfied	270	50.0
3	Not satisfied	189	35.0
	Total=	540	100.0

7.7 Impact of ICT on Users in the College Libraries:

Table 12 shows that out of 540 respondents, the highest 482(89.3%) of users agreed that they have positive impact on ICT in the form of 'It helps to access up-to-date information' followed by 478(88.5%) users agreed that ICT 'Provided quickly access the required information'. Subsequently, 421(78.0%) of users agreed that ICT 'it saves spaces and reduces paper'; each of 412(76.3%), ICT 'Enhanced the quality of library services' and 'Access to new range of electronic services not possible before'; 408(75.6%) users, ICT 'saves the time and effort'; 402(74.4%) users, ICT 'It helps to create positive attitude'; 375(69.4%) users, ICT 'provided flexible and comprehensive retrieval of information' and 356(65.9%) users, 'utility of ICT in my institute is good'.

S.No	Description	Agree	%	Disagree	%	Rank	Mean	Std.Dv
	Table 12: Impact of ICT on Users (N=540)							
1	Provided quickly access the required information	478	88.5	62	11.5	2	.8852	.31909
2	Enhanced the quality of library services	412	76.3	128	23.7	4	.7630	.42566
3	It helps to create positive attitude	402	74.4	138	25.6	6	.7444	.43658
4	It helps to access up-to-date information	482	89.3	58	10.7	1	.8926	.30992
5	It saves time and effort	408	75.6	132	24.4	5	.7556	.43016
6	Provided flexible and comprehensive retrieval of information	375	69.4	165	30.6	7	.6944	.46107
7	It saves space and reduces paper	421	78.0	119	22.0	3	.7796	.41488
8	Access to new range of electronic services not possible before	412	76.3	128	23.7	4	.7630	.42566
9	The utility of ICT in my institute is good	356	65.9	184	34.1	8	.6593	.47440

7.8 Testing of Hypotheses:

a) Hypothesis 1: Use of ICT has substantially improved the management of library activities with the facilities available.

		Mean	Std. Deviation	N
	Table 13 **Descriptive Statistics of ICT Facilities and Management of Library activities**			
Facilities available	ICT Base Library services	8.43	2.522	126
	Hardware facilities	9.53	2.507	126
	Software facilities	2.37	.711	126
	ICT based technologies	1.77	.609	126
	Overall facilities available	13.67	3.466	126
Management of library activities	Views of library automation	1.40	.554	126
	Level of Acquisition	1.08	1.542	126
	Level of Cataloguing	4.27	1.162	126
	Level of Circulation	3.59	2.083	126
	Level of Serial Control	1.28	1.700	126
	Level of OPAC	4.11	1.790	126

The Pearson correlations have applied to obtain the relationship between two factors of ICT infrastructure facility and library management activity. The main factor of the availability of ICT facilities in the sample libraries is correlated with management of library activities.

In above Table 13, facilities available in the sample library have four particular dimensions, i.e. ICT based library service, Hardware facility, Software facility and ICT based technologies. The mean scores obtained from 12 numbers of ICT based library services has drawn and found 8.43. Out of 14 hardware facilities available in mean score 9.53, out of 3 categories of library software facilities available in mean score 2.37, ICT base technologies containing 4 types of facilities and the mean score is 1.77.

The overall facilities mean score is 13.67 out of 33 facilities available in the surveyed libraries. Management of Library activities has classified into five categories and overall views of library automation depicted the attitude on the activities. Mean scores of the level of acquisition, cataloguing, circulation, serial control and OPAC are 1.08, 4.27, 3.59, 1.28 and 4.11 respectively.

Table 14 Pearson Correlation between facilities available and management of library activities							
Facilities available		Management of Library activities					
		Views of Library Automation	Level of Acquisition	Level of Cataloguing	Level of Circulation	Level of Serial Control	Level of OPAC
ICT Base Library services	Pearson Correlation	.596**	.238**	.473**	.634**	.332**	.612*₊
	Sig. (2-tailed)	0	0.007	0	0	0	0
	N	126	126	126	126	126	126
Hardware facilities	Pearson Correlation	.524**	.217*	.425**	.525**	.294**	.527*₊
	Sig. (2-tailed)	0	0.015	0	0	0.001	0
	N	126	126	126	126	126	126
Software facilities	Pearson Correlation	.536**	0.141	.364**	.356**	.253**	.402*₊
ICT based technologies	Sig. (2-tailed)	0	0.115	0	0	0.004	0
	N	126	126	126	126	126	126
	Pearson Correlation	.445**	0.105	.349**	.505**	.279**	.435*₊
Overall facilities available	Sig. (2-tailed)	0	0.243	0	0	0.002	0
	N	126	126	126	126	126	126
	Pearson Correlation	.567**	.204*	.444**	.541**	.313**	.540*₊

**Significant at 1% level, *Significant at 5% level

Result: From above Table 14, it can be depicted that the overall facilities available in the surveyed libraries correlated with the management of library activities. The management of library activities is correlated with the facilities available in the libraries to be found significant at 1%, except the level of acquisition with software facilities and the ICT based technologies which are not significantly correlated. Again, level of acquisition with hardware facilities and ICT based library services is positively correlated at the 5 % level of significance. The library activities such as Level of acquisition (r=.204) Level of Cataloguing (r=.444), level of Circulation (r=.541), Level of Serial Control (r=.313) and Level of OPAC (r=.540) have positive correlation with overall facilities available in the sample libraries.

Hence, the overall library facilities in the libraries are positively correlated at 1% significance level except level of acquisition which is significant at 5% level. It concluded that when facilities increase in a library, management of library activities is also increase positively. Thus the hypothesis is found to be true.

b) Hypothesis 2: Users' opinion on the use of ICT in college libraries is not satisfactory.

Table 15: T-test analysis for level of Satisfaction with the Use of ICT				
Level of satisfaction	**Response(N=540)**	**%**	**Overall %**	**t-test**
Highly satisfied	81	15.0%	65.0%	Mean=.65
Satisfied	270	50.0%		SD=.477
				t=31.639*
Not satisfied	189	35.0%	35.0%	df=539
Total=	**540**	**100.0**		p=0.000

*t= significant at 1% level

Result: The above table shows the difference of satisfaction level with the use of ICT. 15% of respondents have reported highly satisfied, 50% are satisfied, overall 65% of respondents are satisfied and 35% are not satisfied with the use of ICT. The mean value = 0.65, SD=.477, t=31.639 indicates that the difference between satisfied and not satisfied ICT user to be found significant at 1% level. Hence, we can accept that the maximum of users are satisfied with the ICT use and reject the null hypothesis.

c) Hypothesis 3: Impact of ICT on users is found positive.

Table 16: Significant difference of Positive and Negative Impact on ICT					
Description	N	Normal Parameters		Z	P-value
		Mean	Std.Dv		
Provided quickly access the required information	540	.8852	.31909	12.216**	.000
Enhanced the quality of library services	540	.7630	.42566	10.998**	.000
It helps to create positive attitude	540	.7444	.43658	10.812**	.000
It helps to access up-to-date information	540	.8926	.30992	12.273**	.000
It saves time and effort	540	.7556	.43016	10.936**	.000
Provided flexible and comprehensive retrieval of information	540	.6944	.46107	10.241**	.000
It saves space and reduces paper	540	.7796	.41488	11.200**	.000
Access to new range of electronic services not possible before	540	.7630	.42566	11.018**	.000
The utility of ICT in my institute is good	540	.6593	.47440	9.280**	.000
Overall ICT impact	540	6.8889	1.43333	5.366**	.000

**Significant at 1% level

Result: The above table depicts the impact of ICT on users in college libraries of Assam. The positivity of the college library users responded as agreed and negative impact as disagreed. The scores defined as 1 for agreed and 0 for not agreed. The mean scores compared the impact in positive and negative ways. The z value has determined the level of significance along with the p-value. The impact of all the ICT reported by the users found to be positive and significant at 1% level. Hence, the impact of ICT on users in the college libraries is found to be positive can be accepted.

8. Conclusion and Suggestions:

The use of ICT in the college libraries of Assam has been gradually improving day by day due to the financial assistance of the different agencies such as RUSA, UGC, INFLIBNET, the concern state government and the local enterprises. The current study was conducted to know the development status of the degree colleges in Assam. The findings of the study have revealed that the use of ICT in college libraries has substantially improved the management of library activities with the facilities available in the libraries. The users' opinion on the use of ICT in college libraries are found satisfactory. It also found that the impact of ICT on users in college libraries is found positive.

The study also tried to identify the problems associated with the implementation of ICT. IT skilled manpower, inadequate training in ICT applications and lack of IT infrastructure and network facilities were among the barriers to implement ICT in the college libraries. The hardware and software facility in the library should be regularly upgraded to improve the additional features while delivering library services in the ICT environment. The librarians should participate in ICT based training on library management software, digital library software and management of library resources organized by different agencies to cope up the latest technologies.

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