Using Status of ICT based Services in University Libraries in Bangladesh: an Empirical Study

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ABSTRACT

The study investigated the present conditions of using ICT based services in university libraries in Bangladesh. An online questionnaire was distributed to some selected public and private University libraries in Bangladesh. This paper also investigates the present situation of ICT based software and technologies used by the libraries. This study also examines further area, such as problems of implementing ICT based services in library and it has been found that majority of the respondents agreed that they had not got enough support from the higher authorities and the status of un-availability of back up services i.e. electricity/ generator is very low. Moreover, some suggestions have been given to make the service more beneficial in the libraries in Bangladesh.

Keywords: Information and Communication Technology, University libraries, ICT based software and services, Problems, Bangladesh

1. Introduction:

The term 'Information and Communication Technology' (ICT) first appeared in the mid 1980s and was defined as "All kinds of electronic systems used for broadcasting telecommunications and mediated communications", with examples ,including personal computers, video games, cell phones, Internet and electronic payment systems and computer S/W etc[8]. The word ICT is a combination of two words information communication & technology. Information means knowledge and technology means use of computer & communication. In this 21st century, Information Communication Technology has become a part and parcel of our Daily life. Breaking the distance barrier, Information Communication Technology has emerged as a blessing to the information seekers as well as libraries. ICT has been a means to bring quality services. The prime objectives of the library are pooling information resources and information related infrastructure and sharing them [4.] Using ICT based information service/current awareness service in the library is gaining momentum and becoming popular too. The revolutions of ICT, academic libraries have changed their terms of services. Most of the academic libraries in Bangladesh is completely modernizing the tools of learning as well as process of teaching, learning, research and also changing the process of providing and sharing information to the user community through these technology driven services [3.]To build up the digital society in Bangladesh, public and private- both sectors are very much important to use ICT based technology and services. The focus of this research is the current status of using ICT based services in the university libraries in Bangladesh and what should be the future strategy to cope with upcoming opportunities for providing accelerate digital library services in Bangladesh. For doing this study researchers selected 21 university libraries in Bangladesh where 14 were private university libraries and 7 were public university libraries.

2. Literature Review:

Libraries always play a very important role as a social institution where all kinds of information sources are available for end users. Both the library staff and users must be physically present in the library in order to exchange the information, available in any format. That's why the library was called the trinity of staff, user and document collections. Now present scenario has changed with the emergence of ICT based products & services in libraries. The physical walls of libraries are fusion like ice melt in open environment. Development is a continuous process. Every development brings new opportunities in the respective fields [8].

In this modern era, libraries are totally dependent on ICT based products & services to fulfill the hi-tech users' need [7]. In brief, this article reviews a few studies conducted abroad as well as in Bangladesh on Status of using ICT based technologies and services in university libraries. In light of this topic, a survey of available literature is made here to make the study more strengthen and widen. The present study is an attempt to clearly establish the present status of using ICT based services in the university libraries of Bangladesh.

Anup (2015) conducted a case study on satisfaction level of users reading library services, online database services and infrastructure facilities. He also finds the study that most of the respondents are aware and use ICT application in computer, Internet surfing, laptop etc.

A study by Islam [2] was conducted in the Department of Information Science and Library Management, University of Dhaka. This study shows the need of information services of the students. He finds out the result that most of the students in this department 31(68.89%) use Internet every day and a vast number of students use Internet for their courses and assignments.

Hussain, Khan and Zaidi [1], focused about the faculty and students where they use the ICT product.In that case, students as well as faculties give same kind of feedback. 25% student and 18% faculties said it is maximum use in their laptop, after that they said it can be also used in Internet (22% students, 18% faculties), computer (17% students, 16% faculties), MS word (11% students, 12% faculties), PowerPoint (12% students, 11% faculties), Printer (5% students, 10% faculties) and so on. They also find out that application of ICT helps to increase the library performance. One of the implications of use of ICT is that Libraries can reach out globally to provide their services 24-hours a day in very cost effective manner. ICT has enabled users to avail many services without any human intervention. IT largely used in operations, like acquisition, cataloguing, circulation control, serials control etc.

The survey provided by Yapa[6]revealed the overall scenario of the use of ICT in Sri Lanka and particularly in libraries. Author argues that National Information Policy and National Information Infrastructure are essential, if a country would like to exploit the IT to its advantage. The major finding of the study is that the progress of library automation in Sri Lanka is a result of the effort of few professionals who worked collectively. One good feature in the Sri Lankan scenario is the commitment and obligation of library professional for library cooperation. Library consortia in Sri Lanka function with the initiative of the library professionals with minimal administrative and financial support from the authorities.

3. Objective of the study:

The main objectives of the study are to observe the existing condition of ICT based technologies and services used in university libraries in Bangladesh. This study has also been designed with a view to achieving the following specific objectives:

- To find out the current status of ICT based technologies and services provided by the University libraries in Bangladesh;
- To identify the ICT based software implemented in the university libraries;

- To find out the constraints that are faced by Informational professionals when implementing ICT based technology and services in their libraries;

- To provide suitable suggestions and recommendations for overcoming problems in implementing ICT based services in their libraries.

4. Research Methodology

The study sampled library professionals working in the universities approved by the University Grants Commission of Bangladesh. The total numbers of library professionals (21) were considered as the research population. An online version of the questionnaire was distributed in the respective libraries. Moreover, data were also collected from other sources such as visiting the websites of the universities, over phone, etc.

The survey questionnaire consisted of the following elements:
1. Demographic information, such as gender, designation, and type of library of the library professional;
2. ICT Based Software, ICT-based Technologies and ICT-based library services and facilities; and
3. Library professionals' perception on problems of implementing ICT based technology and services in their libraries.

For the category (2) above, questionnaire has been made about ICT based software,technology and services by using nominal scale such as "Yes" or "No".

For the category (3) above, library professionals were asked to evaluate each questions item from 1 – ''lowest'' to 5 – ''highest'', corresponding to a 5-point Likert scale.

5. Results of the Study:

5.1 Respondent's demographic information

The demographic and background variables used in this study are types of library, gender and designation. The respondents' demographic information is shown in Table 1. A total of 21 libraries and their staffs took part in this study. Based on the demographics and other personal background information obtained, a majority of the respondents were male (76.2%) and only (23.8%) were female. Out of 21 library professionals, the majority were tenured either as a library officer (9, 42.9 percent) or assistant librarian (5, 23.8 percent) or deputy librarian (4, 19.0 percent). Most of the library professionals were working in private university libraries (14, 66.7percent) and other library professionals were working in public university libraries (7, 33.0 percent).

Table 1. Respondent's demographic information

Variable	Classification	Frequency	Percentage
Type of library	Public university library	**7**	33.3
	Private university library	14	66.7
Gender	Male	16	76.2
	Female	5	23.8
Designation	Librarian	3	14.3
	Deputy librarian	4	19.0
	Assistant librarian	5	23.8
	Library officer	9	42.9

5.2 ICT Based Software used in university libraries:

Open source software is software that provides access to the source code, meaning that users are free to see how the product is made. In the present time ,libraries are intensely involved in digital projects and are likely to remain so for the foreseeable future.Currently most of the libraries used open source software for managing their content, libraries in Bangladesh are also not away from this technology, to find out the current status of using ICT based software in libraries authors have done this study.From the table2 it has been observed that, out of the 21 university libraries (both public and private) majority of the libraries 11(52.4%) in Bangladesh used open source software and 10(47.6%) were not using open source software. Moreover, only 8(38.1%) university libraries used digital library software and 13(61.9%) libraries were not, followed by 9(42.9%) libraries have customized software for managing their content and rest of the libraries 12(57.1%) used other software.

Table2. ICT Based Software used in university libraries

S.N	Description	ICT Based Software		Total
		Yes (%)	No (%)	
1.	**Open Source Software**	11(52.4)	10(47.6)	21(100.0)
2.	**Digital Library Software**	8(38.1)	13(61.9)	21(100.0)
3.	**Customized Software**	9(42.9)	12(57.1)	21(100.0)

(Yes=Available, No=Not Available)

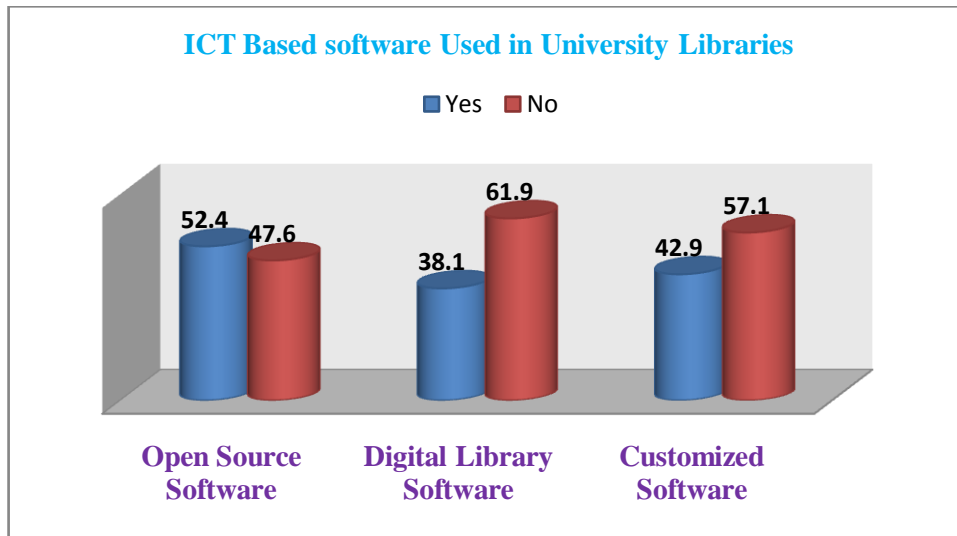The above tabulated data are shown below by the following figure:

Fig.2. ICT Based Software used in university libraries

5.3 Technologies used in the university libraries in Bangladesh

The aim of this study is to find out the present situation of ICT-based Technologies used in the university libraries in Bangladesh. Four technologies were selected under study and analyzed on nominal scale such as "Yes" or "No" .From the survey, it was found that all of the libraries 21(100.0%) under study used Internet technology and this is very positive outcome for Bangladeshi libraries. But it is further observed that only 3(14.3%) university libraries adopted RFID technology in their library,

though the extent is less but many libraries have under processed to implement RFID technology. Moreover, it was also found that 14(66.7%) university libraries used Barcode technology followed by 7(33.3%) used Video Conference technology, and 14(66.7%) libraries have no Video Conference technologies, also see fig. 3.

Table 3: Technologies used in the university libraries

S.N	Description	ICT Based Technologies		Total
		Yes (%)	No (%)	
1.	**RFID Technology**	3(14.3)	18(85.7)	21(100.0)
2.	**Barcode Technology**	14(66.7)	7(33.3)	21(100.0)
3.	**Internet Technology**	21(100.0)	-	21(100.0)
4.	**Video Conference Technology**	7(33.3)	14(66.7)	21(100.0)

(Yes=Available, No=Not Available)

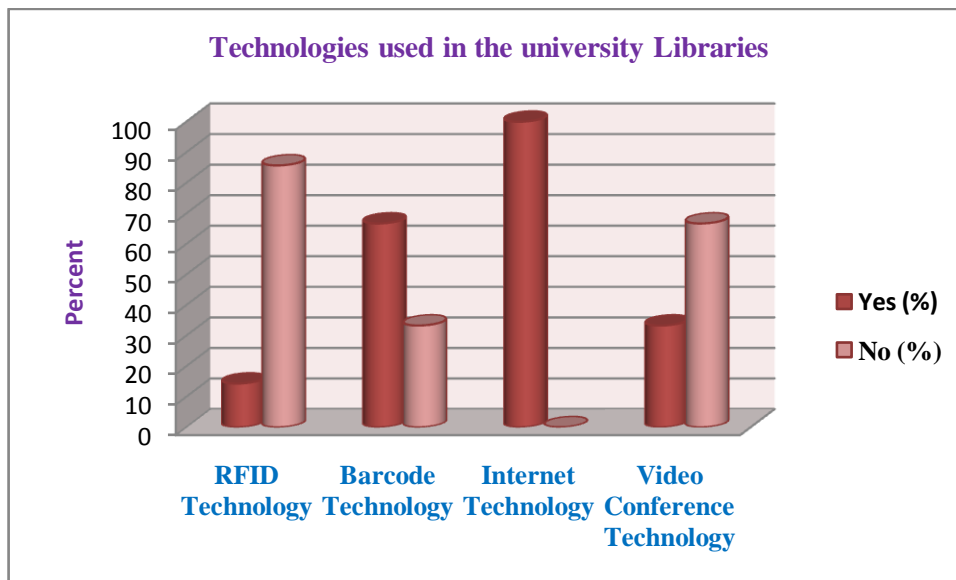The above tabulated data are shown below by the following figure:

Fig.3. Technologies used in the university libraries

5.4 ICT-based library services and facilities:

Respondents were asked about ICT-based library services and facilities they are providing to their user. From the findings, it has been observed that most of the libraries 18(85.7%) used Online Database service, CD-ROM Database service 17(81.0%) followed by E-mail Service 15(71.4%) ,social media services 13(61.9%) and Full-text database service respectively. This study also investigated that about 11(52.4%) university libraries (both public and private) do not have Digital Library service and also they do not have Institutional Repository Service 10(47.6%). This study also found correlation with the study of Sivakumaren, K. S.[6]. In their study they found that all the libraries surveyed provide Internet facilities, while 90% have implementedbarcode technology. Three libraries have implemented smart card and RFIDtechnologies. None of the libraries has implemented videoconferencing.

Table4. ICT-based library services and facilities

S.N	Description	ICT Based Technologies		Total
		Yes (%)	No (%)	
1.	Online Database service	18(85.7)	3(14.3)	21(100.0)
2.	CD-ROM Database service	17(81.0)	4(19.0)	21(100.0)
3.	Ask Librarian	12(57.1)	9(42.9)	21(100.0)
4.	Use of Social media	13(61.9)	8(38.1)	21(100.0)
5.	Web OPAC	14(66.7)	7(33.3)	21(100.0)
6.	Digital Library service	10(47.6)	11(52.4)	21(100.0)
7.	Institutional Repository Service	11(52.4)	10(47.6)	21(100.0)
8.	E-mail Service	15(71.4)	6(28.6)	21(100.0)
9.	Full-text database service	13(61.9)	8(38.1)	21(100.0)
10.	Electronic Document delivery	5(23.8)	16(76.2)	21(100.0)

(Yes=Available, No=Not Available)

5.5 Problem of implementing ICT based services in Library:

There are many challenges and problems faced by library professionals in Bangladesh for upgrading their traditional library system into digitalized. From the table 5 it has been shown that most the respondents agreed with the statements of "lack of support from the higher authorities" and "Un-availability of back up services i.e. electricity/generator" (mean- 4.14). Actually libraries in Bangladesh are facing such problems badly. Moreover, this study further observed that respondents did not agree with lack of e-resources selection policy (mean-2.95).

Table5. Problem of using ICT in Library

S.N	Statements	Mean	Std. Deviation
1.	Lack of support from the higher authorities	4.14	1.062
2.	Lack of trained library personnel on ICT	3.67	1.065
3.	Lack of co-operation within libraries	3.00	1.265
4.	Lack of ICT related knowledge	3.29	1.271
5.	Lack of infrastructure	3.38	1.071
6.	Lack of ICT training programs	3.14	1.108
7.	Poor attitude of staff towards library automation	3.43	1.287
8.	Lack of long-term planning	3.14	.964
9.	Lack of E-Resources Selection Policy	2.95	1.071
10.	Un-availability of back up services i.e.	4.14	.727

electricity/generator		

6. Discussions:

The major findings and discussions are shown below:

- The present paper revealed that most of the library professionals were from private university libraries (14, 66.7percent) and other library professionals were working in public university libraries (7, 33.0 percent).
- From the findings of the study it has been observed that, out of the 21 university libraries (both public and private) majority of the libraries 11(52.4%) in Bangladesh used open source software and 10(47.6%). Moreover, only 8(38.1%) university libraries that used digital library software followed by 9(42.9%) libraries, have customized software for managing their content and rest of the libraries 12(57.1%) used other software.
- In the present times, almost all libraries in Bangladesh use Internet technologies and the current study also found the positive result such as 21 university libraries (where N-21) used internet technology in their library. But it is further observed that only 3(14.3%) university libraries adopted RFID technology in their library, though the extent is less but many libraries are under process to implement RFID technology. Moreover, it was also found that 14(66.7%) university libraries used Barcode technology followed by 7(33.3%) used Video Conference technology.
- Respondents were asked about what types of ICT-based library services and facilities they were providing to their user. From the findings it has been observed that most of the libraries 18(85.7%) used Online Database service, CD-ROM Database service 17(81.0%) followed by E-mail Service 15(71.4%),social media services 13(61.9%) and Full-text database service respectively. This study also investigated that about 11(52.4%) university libraries (both public and private) do not have Digital Library service and Institutional Repository Service 10(47.6%).
- Respondents were also asked about what types of problem they were faced while implementing ICT based services in their library, most of the respondents agreed with the statements of "lack of support from the higher authorities" and "Un-availability of back up services i.e. electricity/generator" (mean- 4.14). Actually libraries in Bangladesh are facing such problems badly. Moreover, this study further observed that respondents did not agree with lack of e-resources selection policy (mean-2.95).

7. Conclusion:

In the age of Information and Communication Technology the libraries should be reshaped with new technologies and provide modern information services to meet the user needs facilitated by ICT. It's true that Information Communication Technologies are very much important for achieving significant development in the field of library and information sector. The nature of university libraries in a developing country like Bangladesh indicates that needs of ICTs are numerous and multidimensional. A number of public and private university libraries in Bangladesh provide ICT based services and try to minimize digital divide. The present study identified some problems that are faced by librarian while providing and implementing ICT based services. Based on the problems that the researchers identified hereprovides some recommendations:

- The concerned library authority should be aware of the changes in ICT in the world and always provide positive support for adopting ICT based library services;
- Library professionals' training needs should be assessed properly for relevant provision;

- More computers and high speed Internet should be installed both in public and private university libraries for the benefit of library members as well as information staff;
- Appropriate planning is a must to improve ICT competence among the information professionals of the public and private university libraries in Bangladesh.
- There should be available back up services i.e. electricity / generator services in library.
- Moreover, the librarians in Bangladesh should develop their personal skills and knowledge regarding ICT and always keep themselves up to date with new technology.

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