

Accessibility of Internet Based Electronic Resources: A Content Analysis of Public and Private University Library Websites in Bangladesh

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Abstract -The purpose of this paper is to analyze the websites of university libraries to ascertain that libraries are effectively utilizing their respective websites to provide easy access to all electronic resources available in the library. The objective was also to represent a comparative analysis between public and private university library websites regarding the presence of electronic resources with their easy access via the internet. For the purpose of this study, a research instrument in the form of comprehensive checklist of eighteen e-resources was developed to evaluate their accessibility in the websites of public and private university libraries. Twenty university library websites, comprised of ten top-ranked public and ten top-ranked private universities in Bangladesh, were studied for data collection using content analysis method. The findings demonstrate that the presence of e-resources on selected university library websites is still in its early stage, but it has been growing rapidly. The private university library websites are ahead of public university libraries in terms of the integration of web-resources. It is hoped that the findings of this paper will serve to assist the University librarians and other similar institutions in choosing, selecting and acquiring the most appropriate format of information resources, and making these available to their websites, which will both satisfy the needs of their library users and fit within their library budget.

Keywords: Academic Libraries, Electronic Resources, E-Libraries, Library Usage

I. INTRODUCTION

The goal of the Bangladesh government is to build "digital Bangladesh" by 2021. This has paved the way for the exchange of digital information in terms of education, knowledge transfer and access to information, information on local and global aspects. A website is able to ensure easy access to knowledge, the preservation of knowledge systems, the dissemination of information and the improvement of information services, which are at the heart of Digital Bangladesh Vision 2021's concerns. Resources on library websites are a prerequisite, as library Web sites serve as windows through which libraries provide electronic services to remote users.

A. Academic Library

The role of the library in academic institutions is generally understood to meet the information and research needs of students, faculty and staff (Knight, 2013). At the heart of the

institution, university librarians have been playing this role for centuries. However, since the emergence of the distance education population associated with the latest generation of "tech-savvy" students, the role of the university librarian has taken a different turn (Lukasiewicz, 2007). To remain a dynamic and important part of the university, librarians must find creative ways to help these learners and teachers in an online environment. Librarians have to create digital libraries that offer innovative library services and other advanced electronic resources (Johnson and Magusin, 2009; Lukasiewicz, 2007)

B. E-Resources of Library

At early phase, the World Wide Web was mainly used for push-based applications to provide information and resources to users, the development of Web 2.0 and the familiarity of open sources and shared use concept have focused on user generated content. This led to the rapid development and popularity of electronic resources. An electronic resource is defined as a resource that requires access to a computer or any electronic product that provides a collection of data, including full-text databases, electronic journals, image collections, and other products like multimedia, digital, graphic or temporal (Kenchakkanavar, 2014). E-resources can be accessed through the library's website where users can get the information they want and when they need it. E-resources include full-text electronic journals, online databases, electronic books, company information, encyclopedias, digital images, industry profiles, market research and career information (Tella, 2015).

It is appealing that, utmost all the key e-resources like Institutional Repository (commonly using Dspace, Fedora and EPrint open source software), Theses and dissertations, e-Books and e-Journals (through INASP, PERII consortium and e-resource from UGC Digital Library), e-Catalogues/Classic Catalogue, User Guide etc. are available in the libraries of Bangladesh. The study attempts to investigate the websites of academic libraries (both public and private) in Bangladesh regarding the availability of e-resources. Tables I Shows the Demographic and Other Information of the Top-Ranked Ten Public and Private Universities in Bangladesh (In Alphabetical Order).

TABLE I DEMOGRAPHIC INFORMATION OF TOP PUBLIC AND PRIVATE UNIVERSITY

University	Year of establishment	Faculty	Department	Students	Faculty Member	Teacher : Students	Hall	Library holding
Public University (Funding source: Government)								
Bangabandhu Sheikh Mujib Medical University	1998	7	46	3409	488	1.7	1	26760
Bangladesh Agricultural University	1961	6	43	6760	593	1.11	13	192886
Bangladesh University of Engineering and Technology	1962	5	18	9780	686	1.14	8	135401
Jahangirnagar University	1970	6	34	16931	752	1.23	16	99072
Khulna University of Engineering & Technology	2003	3	18	4056	302	1.13	7	51398
Rajshahi University	1953	10	57	36606	1220	1:30	18	316385
Shahjalal University of Science and Technology	1986	7	28	10398	509	1.20	5	66739
Sher-e-Bangla Agricultural University	2001	3	30	3310	227	1.15	5	39722
University of Chittagong	1966	9	43	23836	1179	1.20	12	297422
University of Dhaka	1921	13	82	32251	2257	1:14	23	681035
Private Universities(Funding source: mainly students' tuition fees and endowments and donations from trustee board members)								
Ahsanullah University of Science and Technology	1995	4	9	6878	447	1:15	1	27521
American International University-Bangladesh	1995	4	18	10716	362	1.30	1	47619
BRAC University	2001	6	10	7403	674	1.11	6	266384
Daffodil International University	2002	5	22	20909	828	1.25	5	50538
Eastern University Bangladesh	2003	4	5	3449	212	1.16	0	18109
East-West University	1996	3	12	11265	362	1.31		28,098
Independent University Bangladesh	1993	6	19	6180	353	1.18	1	26778
North South University	1992	4	16	19081	1279	1:15	0	146247
United International University	2003	2	3	7859	349	1.23	0	20796
University of Liberal Arts Bangladesh	2003	4	6	4373	238	1.18	0	19622

Source: (University Grants Commission of Bangladesh, 2016)

II. PROBLEM STATEMENT

It is assumed that, at present many university libraries in Bangladesh lack of their own websites and some are in a very early stage of website development. Only a few libraries have developed their websites included with a variety of web 2.0 features. There is little research investigating the extent of the adoption of e-resources and no comparison between public and private universities in this regard. Driven by this need to compare, this paper investigates the extent to which the top-ranked universities of Bangladesh have made their e-resources available on their library websites to benchmark performance against other academic libraries in country level.

III. OBJECTIVES OF THE STUDY

The main objective of this study is to present the scenario of a variety of e-resources available in university (public and private) websites in Bangladesh.

To achieve the aforesaid objective, the following research questions were investigated:

RQ₁. What are the web contents and e-resources available on the selected library websites?

RQ₂. What are the differences between public and private university library websites in terms of adoption of e-resources?

IV. LITERATURE REVIEW

Libraries are shifting from traditional print resources to the use of information and communication technologies (ICTs) and other electronic services. However, the use of electronic resources is not a substitute for printed resources, but facilitates access to a large stock of library materials (Okazie, 2016). Tella and Oladapo (2016) had carried out a comparative analysis using content analysis method of available features and web 2.0 tools on top ranked Nigerian and South African university library websites. The findings show that the use of web 2.0 tools in the selected universities is encouraging. The South African university libraries are ahead in terms of the incorporating of web 2.0 tools, e-resources, and e-databases available in their websites as compared to the Nigerian university. Asogwa, Ugwu and Ugwuanyi (2015) conducted a survey in Nigerian university libraries. The sample consisted of 210 employees and students who used electronic resources during the 2012-2013 academic sessions. WebQual modified four

performance indicators were designed and used to measure: library equipment, the library website, the public online access catalog (OPAC) and e-user training in university libraries. The five-point service performance scale from very poor to excellent was used to measure respondents' perspectives. None of the indicators were rated excellent; six were judged good; nine were average; two and five indicators were rated poor and very poor, respectively.

Islam and Hossain (2014) examined a total of 57 university library websites in Bangladesh to evaluate the resources and marketing information services available on the Web. The study found that websites are not fully utilized for the promotional purpose of the library resources and services. The majority of libraries have made no effort to offer online literacy classes, live support, copyright materials, online user surveys, networking, and soon. Vasishta (2013) conducted a study to evaluate the accessibility of electronic journals from the websites of technical university libraries in northern India. Research shows that these types of libraries are trying to establish interactive websites, but majority of library websites appear to be at an early stage and have very simple and basic features. On the whole, they are not able to serve as a platform for the adequate dissemination of electronic journals.

Kehinde and Tella (2012) assessed university library websites in some selected university libraries in Nigeria. The study used content analysis as the research design. A total of 30 university library websites were selected from the three categories of universities in Nigeria to represent a purposive stratified sampling technique. A checklist was used as the research instrument. The criteria for the checklist were drawn on the basis of the assessment of library websites for web 2.0 tools, access to electronic materials and a link to the Nigerian University Commission virtual library. Four research questions were developed and answered, and the results revealed a low level of integration of web 2.0 tools on most of the websites. Following the above literature, it can be assumed that many universities are either at an early stage of integrating e-resources or may be planning to do so. It is also observed that there were no previous studies that considered a comparison of e-resources available in selected university library websites of two types, specifically public and private in Bangladesh, therefore, is an attempt to bridge this gap. Hence, it examines a comparative analysis of e-resources in selected public and private university websites in Bangladesh.

V. METHODOLOGY

The study used content analysis of library Web sites to collect data on the availability of electronic resources. Since a library website is considered to be the window of all services and features, the use of the content analysis technique seems better to obtain accurate information than others. Initially, the author searched at least 50 randomly selected university libraries and found that the majority of libraries did not have a website, but only contained basic information about the university's central website, and many

were in a very early stage of development. This led the author to choose the reasoned sampling technique to select the university based on a specific objective to enrich the study. The content analysis was conducted from March 2018 to August 2018. Library Web sites were scanned to explore the presence of electronic resources. At present, there are 40 public universities and 101 private universities in Bangladesh (Bangladesh University Grant Commission, 2018), the top 10 public universities and 10 private universities in Bangladesh have been counted towards the collection of data. As a result, universities were selected from a list of the top ranked universities in Bangladesh (top 10 universities out of 15, such as general universities, engineering, medical, agriculture, etc.) published in studybarta magazine, 2017. For each of the universities, their library website was visited and data on their electronic resources and electronic databases were collected and analyzed. Google has been used in some cases.

A. Data Collection Procedure: A checklist has been developed for the collection of various electronic resource options with "Present" or "Absent". Checklists of 18 electronic resources were explored to determine whether or not they are available on the websites of the libraries mentioned. The data was recorded in a Microsoft Excel sheet. The presence of electronic resources was represented by the number 1, and absent by 0. After inserting all elements of the checklists, the numbers were added to calculate the total number of cases with the presence of instance in the public university environment. The percentage of each electronic resource was calculated based on the total presence of electronic resources in both types of universities (public and private). A comparison was then made between the public and private university libraries. The analysis of the data collected was interpreted using tables, figures.

VI. RESULTS

Table II and III show that a total 145 occurrences of 18 web contents/e-resources were identified and assessed. The table reveals that, e-journals and e-books are the most common e-resources found on the university websites of both types. A total 19 University (13.10 percent) both public and private has of e-journals and e-books on their library websites. This is followed by e-catalogue, which is found on the websites of 16 library websites (11.03 percent), the link to Institutional Repository, publicizing libraries news, events, and resources are found on the 14 library websites (9.66 percent) each, Theses and dissertations are found on the library websites of 12 (8.28 percent), whereas e- achieve/newspaper achieve is found on the library websites of 9 (6.21 percent), User Guide is found on the library websites of 8 (5.52 percent), e-Referencing and e-newspaper are found in 5 library websites (3.45 per cent)each, Dictionaries are found on the library websites of 3 (2.07 percent), WorldCat links and Encyclopedias are found on the library websites of 2 (1.38 per cent)each, Manuscripts, Past exams and Google scholar links are found on the library websites of only one (0.69 percent) each.

TABLE II COMMON E-RESOURCES DISPLAYED ON THE SELECTED PUBLIC UNIVERSITY LIBRARY WEBSITES

S. No.	Checkpoints	BSMMU	BAU	BUET	JU	KUET	RU	SUST	SAU	CU	DU	Total
1.	Theses and dissertations	0	0	1	0	1	1	0	1	0	1	5
2.	e-Books	1	1	1	1	1	1	1	1	1	1	10
3.	e-Catalogues/Classic Catalogue	0	1	1	0	1	1	1	1	1	1	8
4.	e-Journals	1	1	1	1	1	1	1	1	1	1	10
5.	e-newspaper	0	0	0	0	0	0	0	0	0	1	1
6.	Bibliographies	0	0	0	0	0	0	0	0	0	0	0
7.	Institutional Repository	0	1	1	0	1	1	0	1	0	1	6
8.	e- achieve/ newspaper achieve/Newspaper Clippings	0	1	0	0	0	1	0	1	0	1	4
9.	e-Referencing	0	0	0	0	0	0	0	0	0	0	0
10.	Encyclopedias	0	0	0	0	0	0	0	0	0	1	1
11.	User Guide	0	0	0	0	0	0	0	1	0	0	1
12.	Manuscripts	0	0	0	0	0	0	0	0	0	1	1
13.	News	0	0	1	0	1	1	0	1	1	1	6
14.	Past exams	0	0	1	0	0	0	0	0	0	0	1
15.	WorldCat	0	0	0	0	0	0	0	0	0	1	1
16.	Google scholar	0	0	0	0	0	0	0	0	0	0	0
17.	Dictionaries	0	0	0	0	0	0	0	0	0	1	1
18.	Publicizing the libraries events and resources	0	0	1	0	1	1	0	1	1	1	6
	Total	2	5	8	2	7	8	3	9	5	13	62

TABLE III COMMON E-RESOURCES DISPLAYED ON THE SELECTED PRIVATE UNIVERSITY LIBRARY WEBSITES

S. No.	Checkpoints	AUST	AIUB	BRACU	DIU	EU	EWU	IUB	NSU	UIU	ULAB	Total
1.	Theses and dissertations	0	0	1	1	1	1	1	1	0	1	7
2.	e-Books	0	1	1	1	1	1	1	1	1	1	9
3.	e-Catalogues/Classic Catalogue	0	0	1	1	1	1	1	1	1	1	8
4.	e-Journals	0	1	1	1	1	1	1	1	1	1	9
5.	e-newspaper	0	1	0	0	1	1	1	0	0	0	4
6.	Bibliographies	0	0	0	0	0	0	0	0	0	0	0
7.	Institutional Repository	0	0	1	1	1	1	1	1	1	1	8
8.	e- achieve/ newspaper achieve/Newspaper Clippings	0	1	1	1	1	1	0	0	0	0	5
9.	e-Referencing	0	1	1	0	1	1	0	1	0	0	5
10.	Encyclopedias	0	0	0	0	0	1	0	0	0	0	1
11.	User Guide	0	1	1	1	1	1	0	1	1	0	7
12.	Manuscripts	0	0	0	0	0	0	0	0	0	0	0
13.	News	0	1	1	1	1	1	0	1	1	1	8
14.	Past exams	0	0	0	0	0	0	0	0	0	0	0
15.	WorldCat	0	0	0	0	0	1	0	0	0	0	1
16.	Google scholar	0	0	0	0	0	0	1	0	0	0	1
17.	17. Dictionaries	0	1	0	0	0	1	0	0	0	0	2
18.	Publicizing the libraries events and resources	0	1	1	1	1	1	0	1	1	1	8
	Total	0	9	10	9	11	14	7	9	7	7	83

Table IV provides a summary of comparison of the common e-resources available on the selected University library websites in Bangladesh. The results show that, out of the 145 web contents available on the selected University library websites, public University library websites has 62, representing 42.76 percent, whereas private University library websites have 83, representing 57.24 percent.

TABLE IV COMPARISON OF COMMON E-RESOURCES DISPLAYED ON THE BOTH SELECTED PUBLIC AND PRIVATE UNIVERSITY LIBRARY WEBSITES

S. No.	Checkpoints	Public	Private	Total
1.	Theses and dissertations	5	7	12
2.	e-Books	10	9	19
3.	e-Catalogues/Classic Catalogue	8	8	16
4.	e-Journals	10	9	19
5.	e-newspaper	1	4	5
6.	Bibliographies	0	0	0
7.	Institutional Repository	6	8	14
8.	e-achieve/ newspaper achieve/Newspaper Clippings	4	5	9
9.	e-Referencing	0	5	5
10.	Encyclopedias	1	1	2
11.	User Guide	1	7	8
12.	Manuscripts	1	0	1
13.	News	6	8	14
14.	Past exams	1	0	1
15.	WorldCat	1	1	2
16.	Google scholar	0	1	1
17.	Dictionaries	1	2	3
18.	Publicizing the libraries events and resources	6	8	14
Total		62	83	145
Percent		42.76%	57.24%	

The web content/e-resources commonly available on the both types of library websites are Theses and dissertations, e-Books, e-Catalogues/Classic Catalogue, e-Journals, e-newspaper, Institutional Repository, e-achieve/ newspaper achieve, Dictionaries, Encyclopedias, User Guide, publicizing the libraries news, events and resources, and Google scholar links.

Manuscripts and Past exams documents are available in few public University library websites but not in private University. Otherwise, Google scholar and e-Referencing tools are available in private university library websites but not in public University. The tool Bibliographies are not present in both types of library websites.

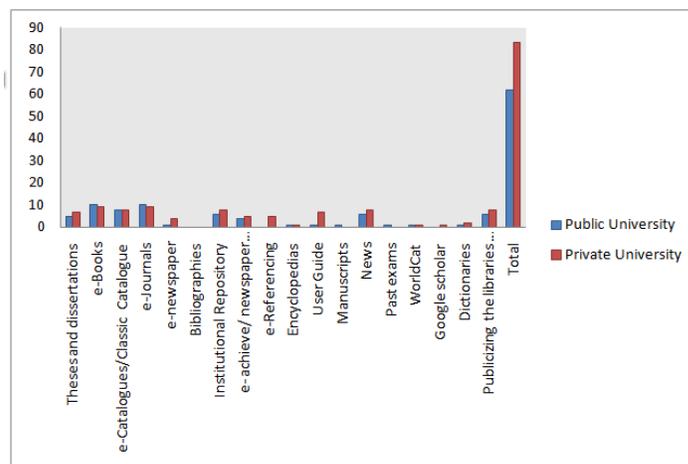


Fig. 1 Graphical representation of the comparison between Public and Private University library websites based on the availability of e-resources displayed

VII. DISCUSSION

The objective of the study was to create a comparative analysis of e-resources available on selected public and private university library websites of Bangladesh. A thorough assessment of the web pages shows that the selected private university libraries are ahead in making available the electronic resources on their university library websites, whereas only a few resources have been integrated on the public university library web pages.

The results show that e-journals and e-books are prominent on the web pages in both types of websites. Both are attracting particular interest in e-Catalogues/Classic Catalogue. Institutional Repository is another prominent e-resources noted in this study. These e-resources, however, are comparatively less available on the public library web pages. This is reflected in the total of 145 available e-resources of which private university library websites have 83, whereas the public university library websites share the remaining 62. It is observed that the addition of any e-resource by a selected university library website depends on the growth of the library web page and the demand by the users. Hence, it may be that private university libraries have patrons desiring more electronic resources be available from their websites. The advancement in adopting new technologies in private universities may be possible due to the following reasons: in private job environment staffs are more proactive because of their job insecurity; students always get priority because of their self-funding educational activity and less bureaucratic problems involved in their administrative procedure.

VIII. STUDY LIMITATIONS

This study has several limitations. Firstly, the sample size, the study only covered ten private universities and ten public universities. Secondly, the research is completely based on content analysis, and there are some limitations especially for internal applications that are not publicly

accessible and that may not be collected through content analysis. The passwords protected web resources are not covered in this study. Content development is a continuous process; therefore, repeated checks to the websites were made because of the contents change over the limited period of times.

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