

# **Evaluation of Public University Libraries Websites in Bangladesh: Feature: Contents,**

### and Maintenance Issues

#### Md. Abdul Hakim Shah

Deputy Librarian

Bangladesh University of Business and Technology (BUBT)

Rupnagar, Mirpur-2, Dhaka-1216, Bangladesh

E-mail: shunto43@gmail.com

#### Md. Sharif Hossain

Assistant Librarian

Bangladesh University of Health Sciences

E-mail: sharif.du.ac@gmail.com

#### Abstract

The research paves a way to look into the content, features, and upkeep of Bangladeshi public university library websites. To ensure representativeness, we selected twelve (12) public university libraries that have dedicated websites. For authenticity and reliability of data, a checklist of sixty-one (61) items divided into ten (10) categories was used, along with interview procedures. The findings of this research have been presented in both tabular and figurative forms. According to the research, the website trend, which began a few years ago, will become a driving force for library services, although there is still potential for development, such as liquid layout, mobile-friendliness, Web-OPAC, online tutorials, etc., and may indicate some maintenance issues for the library's website. This research is useful for information scientists and academic librarians involved in the establishment and management of library websites, particularly in underdeveloped nations like Bangladesh, where resources are restricted and studies are sparse.



**Keywords:** Academic libraries, website, public university, website content, evaluation

#### Introduction

University Library Websites (ULW) serve as information centers for academics, researchers, students, and others. It has become a vital part of higher education and serves as a conduit between patrons and the library. If the website isn't well-designed, users will always have trouble discovering and obtaining information. The term "library website" refers to a website that is owned, managed, and utilized by or for the library to inform users and the general public about the library's varied content offerings, policies, goals, initiatives, and processes. Bangladesh (People's Republic of Bangladesh) gained independence from Pakistan in 1971 after a fight for independence. At that time, Bangladesh had only six public universities. However, the number of public universities and public universities has increased significantly over the past three years and is now 159 (UGC, 2021). In the digital age, libraries meet the needs of online information and research when academia relies heavily on ebooks, digital resources, databases, OPACs, enewsletters, epapers and dissertations, and institutional repositories.

To accomplish their goals and ambitions, libraries rely on web-based services. (Mandrekar, 2021). The recommendation site of the university library is the portal site of university students and the teachings. The site is the portal search function of the university students and the subject. It can be a tutorial, portal service information. (Condic, 2021). This study looks at the current quality and content of Bangladesh's public university library websites, as well as how they help library users communicate. The factors that go into building a library website in Bangladesh can also be applied to other poor countries. The study will be especially valuable for librarians who want to build a new site or improve an existing one, as well as researchers who want to do additional research in a related field.



#### **Literature Review**

As technology advances, users will be able to better utilize the possibilities of a variety of learning and communication tools. Even in recent years, the internet has accelerated the evolution of library services (Maheswari, 2021) and computers have created a host of new possibilities. Several studies have been conducted on various areas of academic library websites, such as electronic services (Mirghafoori, 2020 & Latifian, 2021) best practices (Feras Al-Hawari, 2021) and user satisfaction (Karani, 2021). They can be found in scientific journals. Many studies have been undertaken, among other places, in the Indian Subcontinent, Europe, North America, and the Middle East. (Williamson, 2021) did a study at the University of Idaho, Moscow on how I created and maintained a library website with non-technical employees using static web technology and a git-based workflow.

This study shows both the methodological justification for using Jekll instead of a content management system (CMS) and the practical strategies utilized to construct a long-term and agile development strategy. (Nagaiah, 2021) a study was undertaken using ZOHO.COM sites and AWESOMETABLE.COM to construct the library website and the OPAC online public access list, as well as to improve their design. It gave a high-level overview of how to create a library website and OPAC (Desmarais, 2020).

The Northeastern State University library website was researched to see how users felt about it and what they wanted. Oklahama, USA, the study investigated how to improve the current website's navigational features and content in order to provide a better user experience in the future, as well as how to use the website's resources and services. (Shevchenko, 2020) studies user behavior on library websites in order to improve virtual information and library services in Novosibirsk, Russia. Its goal was to evaluate library website users' actions by recording their activities, determining popular content, recognizing browsing tendencies, and



boosting access to popular information as a result. The study of behavioral models and the use of web analytics have aided in the development of solutions to improve the usability and functioning of the website of the State Public Scientific-Technological Library. (Mierzecka, 2016) conduct research on the functions of an academic library website in the context of information seekers.

This study was conducted at the Universities of Warsow and Vilnius in Poland. The purpose of the study was to determine which components of the academic library website are most important to students. From a user-centric standpoint, the study identified five purposes of the academic library website: (1) promotion of culture; (2) promotion of the collection (both online and traditional); (3) gateway for obtaining information on the Web; (4) education; and (5) building of the library's online image. (Devi, 2018) investigate and analyze the content and design trends of the library websites of nineteen (19) Indian Institutes of Technology (IITs). They discovered only four IITs have a library homepage, with one having a dedicated library page.

Only a few IIT Library websites/webpages have featured collection services, value-added services, and connectivity to Web 2.0 technologies. Another study was conducted by (Verma, 2020) on eighteen (18) state public university libraries' websites in North East India. The study's objectives were to learn fundamental information about the library, such as its collections, facilities, online library services, and links to e-resources, as well as provide some crucial recommendations. M.A. Ganaee and M. Rafiq (2016) conducted research on the features, contents, and upkeep of Pakistani university library websites. The websites and web pages of university libraries were investigated in this study, 38. The goal of this research was to assess the current state and characteristics of Pakistani university library websites, as well as to look into the issues that come with creating and managing library websites. The findings



show that Pakistani academic library websites have helpful qualities, including contrasting color schemes, easily legible text, minimum horizontal scrolling, and English content. The websites also include staff information, OPACs, and navigation tools. Web 2.0 technology, Website support tools, information on library buildings, and general library information are among the less frequently encountered elements.

In Bangladesh, there are only a few research projects linked to university library websites (Islam, 2011). A study was undertaken in Bangladesh to assess the utilization of university websites. This investigation involved a total of 200 students from 20 different universities. The HTML toolkit and the webpage analyzer were used to evaluate the usability of the website. The goal of this study was to look into the usability of several university websites in Bangladesh, identify any flaws, and then make recommendations for how to improve the usability. The study found that the university websites' usability elements are lacking, failing to satisfy user requests and expectations. The internal quality of these websites was also determined to be lacking in the study. Rekha, R., and Kumar, R. conducted another study (2019).

The study focuses on a webometric analysis of SAARC countries' national library websites. The purpose of this study was to look into such websites' web presence and visibility, as well as their ranking utilizing webometric metrics. The results of the study were utilized to rank the websites using the WISER ranking method. The National Library of India has a significant online presence, according to the findings. The National Library of Bangladesh outscored all other libraries in a webometric ranking, taking top place. According to the study, webmasters should upload more material in the form of rich files and make more scholarly content available to improve their web presence and exposure. In the context of Bangladesh, (Rashida, 2021) conducted a study on the design of a framework for assessing university



website quality evaluation. The goal of this study was to compile a list of university websites that were ranked according to their quality. This research looked at the content, loading time, and overall performance of university websites. As a result, determining the strengths and weaknesses of university websites was critical.

However, no study based on existing literature has been identified to investigate the current state, features, and upkeep difficulties of university library websites in Bangladesh. Users can learn about the library's materials and services, as well as how to contact the right employees for assistance, by visiting the academic library's website. Many electronic services are also offered for both local and distant users through library websites. As a result, it is planned to assess best practices for constructing and managing library websites in order to assist people who are interested in, and may be new to, developing library websites.

# **Objectives**

The following are the study's objectives:

- a. To examine the existing state, content, and features of public university library websites in Bangladesh.
- b. To ascertain the PULW's maintenance issues.

## **Research Question**

Based on the research gaps, here are two questions raised:

Q1: What is the content and features of public university library websites in Bangladesh?

Q2: What are the maintenance issues with the PULW?

# Research Methodology

**Research Area:** Public universities are self-governing and funded by the government. 159 universities in Bangladesh (49 public, 107 privates, and 3 international) (UGC, 2021). The following 12 public university libraries were selected for this study; each includes a dedicated



website with information on library services, online catalogs, library tutorials, and a variety of content options. For this study, the universities listed below were chosen on the basis of whether they have dedicated websites. Table 1 contains a list of these, as well as the related webpage.

**Table-1: List of the University Libraries Website** 

Name	Web Address	
Bangladesh Agricultural University Library	https://library.bau.edu.bd/	
Bangabandhu Sheikh Mujibur Rahman	https://bsmrau.edu.bd/library/	
Agricultural University Library		
BUET Central Library	http://lib.buet.ac.bd/home/	
Central Library Patuakhali Science and	https://lib.gom.gots.co.hd/lib.gom.	
Technology University	https://library.pstu.ac.bd/library	
Central Library Khulna University of Engineering	https://library.ly.ot.ochd/	
and Technology	https://library.kuet.ac.bd/	
Central Library, SUST	http://library.sust.edu/	
Chittagong University Library	https://library.cu.ac.bd/	
CUET Central Library	http://103.99.128.14/	
Dhaka University Central Library	http://www.library.du.ac.bd/	
DIJET Control I Shrow	https://www.duet.ac.bd/central-	
DOET Central Library	library/	
Rajshahi University Central Library	http://library.ru.ac.bd/	
Chan a Danala A aniquitymal University Library	http://www.saulibrary.edu.bd/new/index.php	
Shel-e-dangia Agricultural University Library		
	Bangladesh Agricultural University Library Bangabandhu Sheikh Mujibur Rahman Agricultural University Library BUET Central Library Central Library Patuakhali Science and Technology University Central Library Khulna University of Engineering and Technology Central Library, SUST Chittagong University Library CUET Central Library Dhaka University Central Library DUET Central Library	



## Population, Sample, and Data collection

The research was carried out in several stages. First, a web-based survey was carried out to compile a list of university websites in Bangladesh on the basis of who has a dedicated library website, not a webpage. During this procedure, 12 public university library websites emerged. Phase two involved reviewing related material in order to create a checklist. There were 61 items on the checklist, divided into ten (10) categories. Finally, I did a quick interview to get more information about library website management and future plans for improvement.

### **Data Assessment Methods**

I did a quick interview to get more information about Library Website Management and future plans for improvement. The SPSS 22 program was used to analyze the demographic data. A checklist was used to analyze the various components of each website. Mobile-Friendly Test - Google Search Console, a free online tool provided by Google to verify the mobile-friendliness of a webpage (https://search.google.com/test/mobile-friendly), was used to determine the mobile-friendliness of websites. The methodology used for content analysis is based on content analysis of websites by Quatab (2009) and Ganaee (2016).

# **Findings**

There was no library website that provided all of the checklist elements. However, a few websites, including those at Dhaka University Central Library, Rajshahi University Central Library, BUET Library, and Sher-e-Bangla Agricultural University Library, contained a considerable number of items on the checklist. The checklist had eight items that were not available on any library website.

## **Existing Status of University Library Website in Bangladesh**

Out of 159 university libraries in Bangladesh, 43 (Public, 12 & Public, 31) have websites. This means that only 27.004% of university libraries have a website. In contrast, 46



(public, 19 & private 27) out of 159 university libraries have a webpage, accounting for 28.93 %, while 70 (public, 18 & private 52) out of 159 university libraries have no website or webpage for the library, accounting for 70.93 % (44.025 %).

Table – 2: Existing Status of University Library Website in Bangladesh

Sl. No	Types	Website	Webpage	No	Total
SI. NO	Types	Website	webpage	Website/Page	Number
1.	Public University	12	19	18	49
2.	Private University	31	27	52	110
	Total=	43	46	70	159

# Access Library Website from Organizational Home Page

Over 66.66 % of university library websites (8 out of 12) may be accessed directly from the homepages of the institution websites (Table-3). However, 33.33 % (04 out of 12) of library websites were not found by a direct link on the parent institution's homepage. Links to library websites were discovered in such circumstances in the second or third level navigation of the navigation bar, under Academic, Campus, Resources, or other pages. The majority of the time, library sites were three clicks away from the institutional homepage. Many websites used to give a link to a text-only version for clients with slow Internet connections. This feature was not available on any of the study's webpages.

Homepages of library Websites were checked for mobile-friendliness using the Mobile-Friendly Test - Google Search Console Checker. Total 12 library websites were tasted the result shows that 05 Library websites (41.66%) are mobile-friendly and 7 Library websites (58.33%) are not mobile-friendly.



Table-3: Access Library Website from Organizational Home Page

Sr. No	Reason	Frequency	Percent
	The Library Website link can be found on the second		
1	or third level of the navigation bar, under Academic,	09	75%
	Campus, Resources, or other sites.		
2	Direct Access from the organizational home page	08	66.66%
3	Mobile-friendly	5	41.66%
4	Text-only version	0	0%

# Value-added services

Value-added services are those that are not provided by the core library but provide value to a website. A "Search" feature, for example, allows the user to search for specified words. The "Image Gallery" page was the most commonly used feature (04 Websites, 33.33 %). Project and Consultancy, Vendors Links, Advertising, Newsletters, and Jobs, on the other

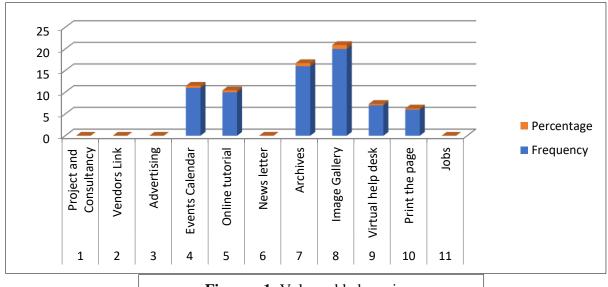


Figure - 1: Value-added services



hand, are not located on any website. The prevalence of requested value-added services is detailed in Figure-1.

## **Appearance**

The general appearance of the Web pages, including the color scheme utilized, text visibility, left-to-right scrolling of the Web page to examine its content, library and university logos, and the usage of liquid layout, is evaluated in this area of the study (see Table-4). Scrolling left and right to access the complete contents of a Web page is undesirable since it necessitates additional user engagement. By scrolling left to right, no website was discovered. The contents of a Web page can be adjusted to accommodate several screen sizes at varying zoom levels using liquid layout (also known as responsive design). It may be found on 12 (100%) websites. Most of the Websites 12 (100%) used visible and well-contrasted color schemes on their pages. No libraries had library logos on their Web pages. on the other hand, the appropriate domain name was 10 (83.33%) universities, and the last update shows only 2 (16.66%) universities (See Table-4).

**Table - 4: Appearance** 

Sr. No	Description	Frequency	Percentage
1	Text Easily readable	12	100
2	Visible, Contrasting color Scheme	12	100
3	University Logo	12	100
4	Liquid Layout	12	100
5	Use Graphics, pictures or Charts	11	91.66



6	Left-right Scrolling	0	0
7	Library Logo	0	0

# **Authority and Currency**

To market the library website, an appropriate domain name and URL can be used in signatures, letterheads, and other places. University URLs like www.universityname.edu.pk/libraryor www.library.universityname.edu are more user-friendly and easier to remember than more complex URLs like www.universityname.edu.pk/administration/library.php or www.university.org.pk/index.php/professional-dept/library .The investigation discovered ten library websites (83.33 %) with appropriate domain names (Table 5). Copyright is described as "the unique legal rights provided by a government to an author, editor, compiler, composer, dramatist, publisher, or distributor to publish, produce, sell, or distribute copies of a literary, musical, or dramatic work" (Tiwari, 2011).

**Table -5:** Authority and Currency

Sl. No	Description	Frequency	Percentage
1	Website Copyright information	11	91.66 %
2	Proper Domain name for the library	10	83.33%
3	Site maintenance is outsourced	2	16.16%

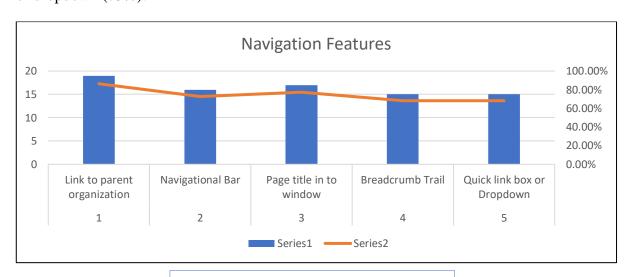
## Languages

In Bangladesh, most of the universities are practicing the medium of English as their study language. In the age of Globalization University libraries are making their website using the English language. Though the official language of Bangladesh is Bengali, all the websites are

made by using the English language. The study shows that 100% of university library websites are used the English language.

## **Navigation Features**

Easy navigation allows the user to find the information they need in less time. Many navigational tools were utilized to meet the needs of users. A link to the parent organization's homepage directs viewers to the institution's main website. According to this study, 9 out of 12 (75 %) library websites had a connection to the institution's main website (see Figure 3). If the HTML code is properly defined, the page title of the website appears in the browser's title bar. When more than one website is open in the browser, this functionality allows users to navigate to the desired browser window by clicking the tab. According to the survey, the page title in the top bar appeared on 11 university library websites (91.66 %). 9 university library websites have a navigation bar (75%), 8 have a breadcrumb trail (66.66%), and 9 have a quick link box or dropdown (75%).

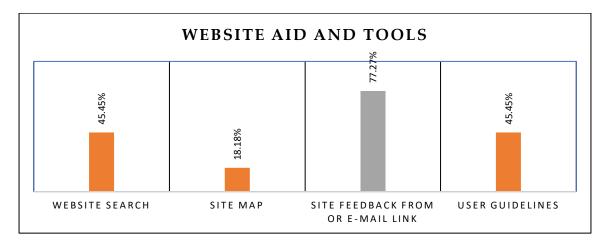


**Figure – 2**: Navigation Features

### **Website Aid and Tools**

Website aids and tools are elements that allow a user to quickly browse the website and make better use of it. Website search, site maps, user comments, and user recommendations

for utilizing the website were all included in the study. Figure 3 shows examples of similar features present on library websites. A website search option was found on 6 (50 %), a site map presenting links to the website's major Web pages was found on only 2 (16.16 %), site feedback from or an e-mail link was found on 5 (41.66 %), and user guidelines were found on 4 public university library websites (33.33 %).



**Figure – 3**: Website Aid and Tools

# **Library Staff**

The twelve (11) libraries about 91.66% provided a library staff directory on their websites (see Table-6). The most commonly provided information was about professional staff on only 11 Websites (91.66%), followed by staff contact numbers 10 websites (83.33%) Websites. In addition, qualifications of the staff were 2 Websites (16.16%) while photographs of the staff were 9 Websites (75%).

## **Library General Information**

General information about the library on the list includes information about the library's introduction, library history, mission statement, library goals and objectives, library hours, library usage, news and events, and the catalog, there. Information about classifications, library



policies, procedures, rules, loan deadlines, material reservations, library FAQs, current library programs, and the library's ongoing programs.

**Table-6: Library General Information** 

Sr. No	Reason	Frequency	Percentages
51.110	Reason	rrequency	rereentages
1	Language	12	100
2	Library Staff Directory	11	91.66
3	Mission & Visio	11	91.66
4	Working Hours	11	91.66
5	Instructions about Library use	10	83.33
6	Library History	10	83.33
7	Staff E-Mail and Phone Number	10	83.33
8	Photographs of the Staff	9	75
9	Photographs of the Building	8	66.66
10	News and Events	7	58.33
11	Library FAQs	4	33.33
12	Library Committees	4	33.33
13	Ongoing Projects in the Library	2	16.16
14	Qualifications of the Staff	2	16.16



11/11 7 01:2 1 10:1		Diffull, C	711055am (2022)
15	Video/Virtual tour of Library	2	16.16
16	Information about the Building	1	8.33
17	Map/Floor Plan of the Library	0	0

### **Website Maintenance Issues**

## **Internet Use on Mobile Devices**

Mobile internet usage has surged in recent years, and Bangladeshi library patrons commonly use their smartphones to access websites. The results obtained using the Mobile-Friendly Test-Google Search Console Checker in this study were very low. The result shows that of 12 public university library websites, 5 (41.66%) are mobile-friendly. So it is needed to make the library website mobile-friendly.

## Professional gap between library and IT staff

Lack of communication between library and IT workers is a serious problem as well. This is because there are certain psychological variations. The urgency and significance of certain requirements listed on library websites are occasionally beyond the comprehension of library workers. The IT staff lacks professional knowledge of library management, just as the library personnel lack sufficient knowledge and practices on information technology usage in the library. Due to this, a big gap in professional knowledge is visible in the context of website maintenance. So, it is a very common but significant problem.

# **Uninterrupted power supply**

Although the gap between supply and demand for energy in Bangladesh is closing daily, there is still a severe shortage of electricity in the country. "Up to 18 hours a day of



continuous electrical shortages have hampered industry and fueled popular resentment" (Walsh 2013). Two experts identified a challenge they encountered with website maintenance as the load-shedding of energy. At present, the electricity production and demand rates in Bangladesh are respectably 25235 MW and 13992 MW (bpdb, 2021). From this observation, it is clear that an uninterrupted power supply is a big issue for website maintenance.

# Internet Bandwidth: Internet bandwidth in Bangladesh is generally adequate

Habiba, (2019) shows in her study that internet connectivity at 31% of universities was rated excellent, 19% adequate, and 4% reported poor internet connectivity. But in the case of slow connections, slow Web servers, and unavailability of the websites 24/7, these were technical issues faced by the staff in maintaining and updating the websites. At the moment, 4G internet is available throughout Bangladesh. It is a good sign that 4G internet is being used in a library. If we can hold out the use of good internet bandwidth, website maintenance will be very easy.

# A lack of technical and skilled library staff

Most library professionals begin their careers after completing academic careers without acquiring advanced ICT skills or training. So, it is a big challenge to make the library staff technically sound. This scenario can be changed by organizing in-house computer and ICT-based training for the professionals. For proper maintenance of the library website, technical and skilled library staff are required.

## **Inadequate Web Development Training**

There are insufficient opportunities and resources in Bangladesh to organize a web development training program for library personnel. Bhatti (2012) identified inadequate inservice training for library staff and suggested a national committee consisting of stakeholders for the improvement of the situation. Without sound knowledge of website development and



maintenance, it is impossible to manage the site. The majority of interviewees believed that library staff who receive web development training on their own initiative.

## Lack of 24/7 availability

Because potential users can access the website at any time and from any location, the website should be available 24 hours a day, seven days a week. The study observes that most of the PULW are not available 24/7 because of the policy of the organization and a lack of technical support. They always maintain a certain period for opening and closing the website every day.

#### **Slow Web servers**

In the age of information technology, people expect to be able to access websites quickly. The page loading time of 6-10 seconds is often required. Slow web servers kill time and users face a bad experience. In Bangladesh perspective, most library websites are setup on normal desktops and used as servers. That's why when multiple users access the site, it becomes slow. On the other hand, web upload of long data files makes the server slow. Like that, various issues can make a web server slow. It can be reduced only by proper and expertized management of the library website.

### Discussion

Overall, the study's evaluation of Dhaka, Bangladesh's public university libraries' Web sites shows that there is need for development. There are still many unfinished websites for public universities. The websites of 12 public university libraries in Dhaka were analyzed for this study. Based on the range of library services to be provided, the authors believe that three or more pages are necessary for a sufficient online representation of an academic library; however, only one website satisfied this requirement. In recent years, mobile internet usage has



increased, and Bangladeshi library users routinely visit websites on their cellphones.5 out of 12 websites (44.66 %) are mobile-friendly.

The 12 public university library websites included in the study were examined for features, content, and services using the established checklist. Most products that included value-added services, such as library logos, bulletins, online tutorials, event calendars, and so on, did not receive a significant score in this category. These services improve the websites' value and make it easier for users to access the library's content from a distance using the Internet. The majority of the websites looked at in the study had acceptable visuals, with text that was readable, color schemes that contrasted effectively, no horizontal scrolling, and the right kinds of graphics being used. Only 10 sites (88.33 %) have the correct domain for a library website, indicating a low amount of importance placed on a distinct library web presence by university management. For marketing and offering library services, a well-designed library website must be properly created and maintained. The authors advise routine inspection to find faulty scripts or broken links.

Where website upkeep was handled by IT workers, the biggest issue with updating and maintaining library Web sites was the lack of cooperation between the library and those individuals. Making teams accountable for updating Web information and holding regular meetings to better collaboration could also help the situation. Another problem was that the librarians in charge of website upkeep lacked the essential abilities. Training for library staff members could be arranged, for instance, by teaching them HTML for creating and updating websites. Electricity load-shedding was one technological issue identified during the investigation that was preventing websites from being accessible round-the-clock. Websites should give a comprehensive overview of the library's materials and services because they are the first point of contact for remote users with the library. They also give site visitors helpful



information. Both present and potential users can benefit from knowing the library's operating hours, holidays, membership requirements, rules and policies, various library sections, and amenities. The task of creating material for pages and ensuring accuracy should be divided among a team of content managers that library professionals should assemble. Through the use of Web 2.0 tools like Facebook, Twitter, and instant messaging, the library, its resources, and services might be made known to and promoted to a larger audience.

#### Conclusion

There are 49 public universities in Bangladesh but only 12 university libraries have their own websites. There are a number of hurdles in creating, managing, and managing websites, but librarians have embraced these challenges. Most of the 61 checklists were observed on different websites but 8 points were not observed on any website. As a result, further research on website deployment, standards, and management is required.

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