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Research Article

Contents and Features of Private University Library Websites (PULWs) in Bangladesh: User Communication

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Abstract

A well-designed library website can be a powerful tool for promoting a library's services and resources and communicating its mission and values to its users. The study aims to investigate the current status, contents, and features of private university library websites (PULWs) in Bangladesh that are used for user communication. Selecting thirty (30) private university libraries with dedicated websites aims to ensure inclusivity and provide insights into best practices for designing and managing library websites in the private university context. To ensure the accuracy and dependability of the data, an interview method and checklist of sixty (60) items separated into eight (8) categories were used. The study reveals some important areas where still a need for improvements like liquid layout, mobile friendliness, Web-OPAC, online tutorials, newsletter, website update, project consultancy, vendor links, advertising, website appearance, library general information, jobs-related issues, etc., and certain challenges for library website maintenance and removing professional gap. The study recommends valuable suggestions for effective content, features, and maintenance issues of PULWs. In addition, the findings suggest that while most PULWs provide basic communication features such as email, phone, and chat support, there is significant room for enhancement in terms of user engagement and interaction. This study will be beneficial for academic librarians and information specialists who work on building and maintaining library websites.

Keywords: Contents and Features, Library Website, Academic Library Website, User Communication. Website Content Library Resources, User Engagement, User Experience

1. Introduction

As information centers, University Library Websites (ULWs) play a crucial role in meeting the needs of academics, researchers, students, and others. By creating a link between the library and its users, it becomes a

vital component in the overall functioning of the library. If a website is poorly designed, users may have difficulty finding the information they need, which can lead to frustration and a negative user experience. A well-designed website is essential to facilitate users' discovery and retrieval of information. Farkas, M.G., & Hirsch, B. (2013) A "Library Website" is a website that is owned, controlled, and utilized by the library to provide information to its visitors regarding the library's different content offerings, policies, goals, initiatives, and processes. It serves as an important platform for the library to communicate with its users and facilitate access to the library's resources and services. However, user communication on PULWs is frequently overlooked, leading to a subpar user experience. Neglecting user communication can result in user frustration and discourage them from utilizing the library's resources and services. At the time of our independence, there were only six (06) public universities in Bangladesh. However, the number has expanded dramatically throughout the last three decades, and now it is 159 (UGC, 2021). In the current digital era, where scholars heavily rely on electronic books, databases, OPACs, e-newsletters, electronic theses, and dissertations, institutional repositories, and libraries have adjusted their services to accommodate these needs. This research aims to analyze the current status, contents, features, and maintenance issues of PULWs in Bangladesh to identify areas where user communication can be enhanced. The study will examine the information architecture and resources through checklists. The findings of this research will provide valuable insights into how PULWs in Bangladesh can improve their user communication, resulting in better user experiences for students, faculty, and researchers.

2. Statement of the problem

The substantial job of investigation work is to recognize the research problem properly. The libraries of Bangladesh are in a competitive position due to the rapidly growing information, diversified and dynamic nature of the user's need and their satisfactions. It is seen that the university libraries of Bangladesh have a common goal to satisfy their users by providing different services available in the library. For competitive advantage, university libraries offer content and content information through library websites to attract users. Service through the websites of university libraries might not be at a satisfactory level. However, no standard will be followed, to sum up, a complete picture of the university library website of Bangladesh in terms of content, features, service, maintenance, etc. As a result, the paper's primary objective is to examine the present state, features, and contents of Private University Library Websites (PULWs) in Bangladesh. Additionally, how these websites facilitate communication among library users. Other developing nations can use the same considerations while constructing a library website like Bangladesh.

3. Literature Review

In the dynamic landscape of academic libraries, the role of digital platforms, specifically library websites, has undergone significant transformations. Scholars and researchers have engaged in extensive exploration of various facets related to the design, usability, and effectiveness of these online spaces. Researchers reviewed existing literature to understand the context, identify gaps, and avoid redundancy.

Farkas, M.G., & Hirsch, B. (2013) in their book "The Academic Library Website" focuses on the importance of academic library websites in today's digital age. The book provides an overview of the evolving role of academic library websites, the various features and functionality that they should offer, and best practices for

designing and maintaining them. The authors highlight the importance of usability and user-centered design in creating effective library websites. These include intuitive navigation, easy access to resources, mobile compatibility, and personalized services.

Maheswari and Aravind, (2021) users will be able to use a variety of learning and communication tools more effectively when the technology develops. The development of library services has been hastened by the internet even in recent years. Several studies have been conducted on various aspects of academic library Websites, such as Mirghafoori, Sayyadi, and Saghafi (2020) & Latifian, (2021) electronic services, Feras Al-Hawari, Al-Zu'bi, Barham, and Sararhah, (2021) best practices, and Karani, Thanki, and Achuthan, (2021) user satisfaction.

Yoon, K., Dols, R., Hulscher, L., & Newberry, T. (2016) investigated the web-browsing needs of visually impaired individuals to inform accessible library website design. The study involved six screen reader users who evaluated the usability and accessibility of library websites. Findings emphasized the importance of information architecture and accessible web design over code faults for ensuring usability for blind or visually impaired users. Shevchenko, L. (2020) to enhance virtual information and library services in Novosibirsk, Russia, investigates user behavior on library websites.

Azadbakht, E. S., Blair, J., & Jones, L. (2017) conducted a usability study where participants were undergraduate students, graduate students, faculty, and library employees of the University of Southern Mississippi Libraries website. The findings revealed several unfavorable characteristics that had an impact on all user groups, including library staff. These outcomes enhanced internal support for later usability-related website redesigns at the library.

Li, T., Tang, J., Xiao, & Cai, M. (2021) used Link Analysis and Grey Relational Analysis to examine and assess the smart library portal models of two significant Chinese third-party organizations. Seven influencing factors were considered, and the models were assessed based on these factors. To create an effective and efficient library portal, the report advises working with outside companies, investing in financing and human resources, and working together.

Mierzecka and A. Suminas (2016) investigate the capabilities of academic library websites from the information seeker's perspective to identify the parts of the websites that students value the most. The study determined that the Academic Library Website has five functions: (1) increasing library use; (2) promoting culture; (3) acting as a gateway for discovering information online; (4) serving as a teaching tool; and (5) creating the library's online reputation.

Blakiston, R. (2013) discussed the creation of a content plan for an academic library website focusing on aligning website content with user needs and goals. The author suggests conducting user research, establishing content guidelines, and creating a governance structure for website content. The article provides a detailed case study of the content strategy development process, highlighting the importance of collaboration, communication, and ongoing evaluation.

Devi, K.K., and Verma, M.K. (2018) assessed the 19 Indian Institutes of Technology (IITs) library websites for their content and design trends. The researchers found that only four IITs had a library homepage, one of which had a separate Library website.

Verma, M.K., and Singha, S.C. (2020) The goals of the study were to gather basic knowledge about libraries.

Fang, W. (2007) presents a case study of using Google Analytics to improve the content & design of a website. The study highlights the use of Google Analytics to analyze user behavior, identify popular content, and optimize website design for a better user experience. The study concludes that Google Analytics can provide valuable insights for improving library website content and design.

Liao, K., and Feng, L. (2019) research the user-centered design of a contemporary library website of a university. The study looked at three user needs: essential functionality, safety, security, and a humanistic element.

M.A. Ganaee and M. Rafiq (2016) researched the characteristics, content, and maintenance of websites for Pakistani university libraries. The findings demonstrate that libraries offer excellent staff information, OPACs, and navigational aids. Web 2.0 technology, tools for supporting websites, details on library facilities, etc. There aren't many research initiatives in Bangladesh that are connected to university library websites.

Tijjani, D. (2019) conducted a study intending to determine and quantify how satisfied students are with the library services provided by Malaysian universities. To do this, a self-administered survey was given out to private university pupils. The study suggests that empathic personnel are more responsive, which leads to students being satisfied with library services. To enhance library utilization and maintain students' satisfaction, all management should place the highest priority on the structure, the ability to print and scan documents, the seating layout, and the e-library resources.

Islam, and Keita, (2011) in Bangladesh, a survey was conducted to determine how often university websites are used. According to the survey, the university websites' usability components are inadequate and fall short of meeting user expectations.

Another study was carried out by Rekha and Kumar (2019). The webometric analysis of national library websites in SAARC countries is the main topic of the study. The goal of this study was to look into these websites' online visibility and presence. The WISER ranking system was used to order the websites based on the study's findings.

Rahman, A., & Batcha, M. S. (2020). evaluates ten chosen college libraries' websites that are linked with the University of Delhi for their accessibility, accuracy, currency, and user-friendliness. It also talks about the amenities and services that websites provide. Data were gathered from the chosen colleges for the study using a well-structured checklist. The study recommends that to conduct such evaluation studies, which are urgently needed, institutions should be able to regularly update their websites and surpass the expectations of the user with flying colors.

Rashida, M., *et al.* (2021) researched building a framework for evaluating university website quality in the context of Bangladesh. As a result, it was crucial to identify the advantages and disadvantages of university websites.

However, no specific study based on reviewed literature was found to look into the content, features, and maintenance issues of Bangladeshi university libraries' websites. Through library websites, numerous electronic services are also made available to both nearby and distant people. It is intended to look into best practices for building and maintaining library websites to guide those who are interested in developing library websites.

4. Research Questions

Here, three (03) questions have been posed in light of the gaps in the literature:

Q1: What is the current status of PULWs in Bangladesh, and what are their key features?

Q2: What types of content are currently being used on PULWs in Bangladesh for user communication, and what maintenance issues need to be addressed?

Q3: Based on the findings of the analysis, what recommendations can be made to improve the content, features, and maintenance issues of PULWs in Bangladesh to enhance user communication and experience?

5. Objectives

The study's objectives are as follows:

➢ To analyze the current status and features of PULWs in Bangladesh;

➢ To explore the contents and identify the maintenance issues of PULWs used for user communication;

➢ To recommend suggestions for effective content, features, and maintenance issues of PULWs in Bangladesh

6. Research Methodology

For this study, mixed methods (qualitative and quantitative) have been applied. The following methodologies are;

6.1 Research Area: The University Grants Commission recognizes private universities in Bangladesh and is financed by non-governmental organizations. For this study, thirty (30) private university libraries having dedicated library websites have been selected from Bangladesh.

6.2 Population and Sample: The population of the study includes the library websites of the private university in Bangladesh. Private university libraries have dedicated library websites based on their contents and features offered.

6.3 Data Collection Tools and Methods: The study was conducted in two distinct phases. To start, an online survey was done to generate a list of Bangladeshi university websites. Thirty (30) private university library websites were formed as a result of this process. In phase two, a checklist was created after reviewing related material. The checklist had eight (08) categories and sixty (60) items in total. To learn more about the management of the library website and its future development plans, the authors lastly performed a brief interview.

6.4 Data Analysis Methods: The demographic data were measured by using the SPSS 22 and the aspects of each website were examined using a checklist. Google Search Console's *Mobile-Friendly Test* (https://search.google.com/test/mobile-friendly), was used to check and assess a website's mobile-friendliness. The methodology for content analysis has been based on content analysis of websites conducted by Ganaee and Rafiq (2016) & Qutab and Mahmood (2009).

7. Data Presentation and Interpretation

7.1 PULWs Status: Maximum private universities in Bangladesh are situated in Dhaka and as a result of this, the highest number (22) of Private University Library websites from Dhaka has been taken from Dhaka Region. Here is the demographic distribution of the 30 samples Division (Figure 1)
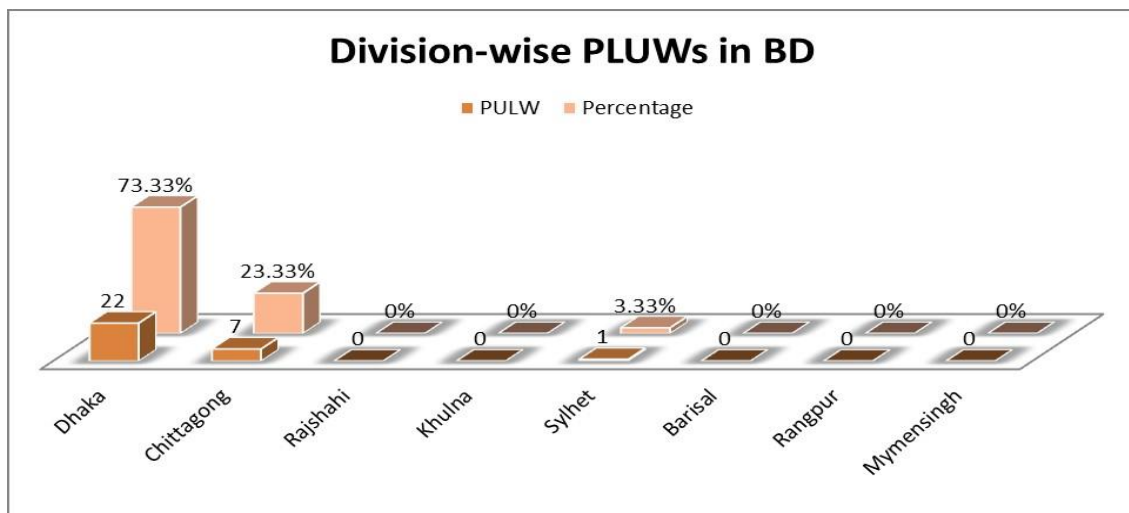
Figure 1: Division-wise PLUWs in BD

7.2 Accessibility of the library website:

library's website could be found under Academic, Campus, Resources, or other sites in the second or third level of the navigation bar which is about 90%. The university Websites' home pages allowed for direct access to more than 86.67.72% of the university library's websites (See Figure 2).13.33% percent of library Websites were inaccessible via a direct link. Several websites are used to link to a text-only version for people is none in this study. The Mobile-Friendly Test - Google Search Console Checker was used to examine the mobile-friendliness of library website homepages. The results indicate that 16 (53.33%) websites are mobile-friendly.
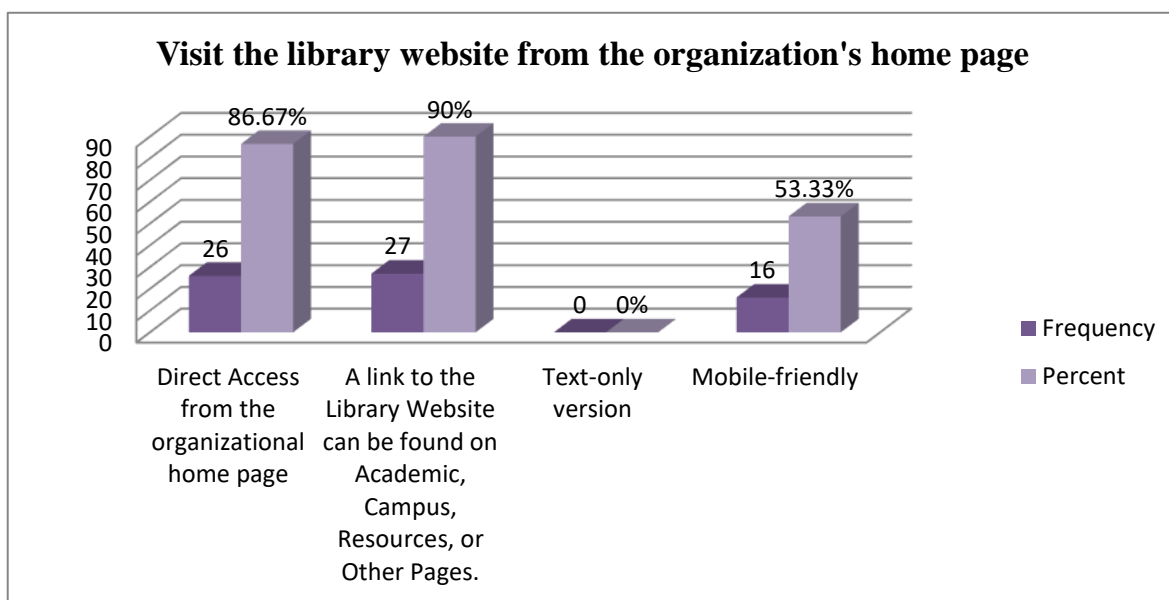

Figure 2: **Visit the library website from the organization's home page**

7.3 Value-added services: The most frequently found feature was the "Image Gallery" page (26 Websites, 86.67%). Twenty-six (26) websites maintain library archives which is about 63.33%. On the other hand, Project and Consultancy, Vendors Link, Advertising, Newsletters, and Jobs are not found on any website (Figure -3).
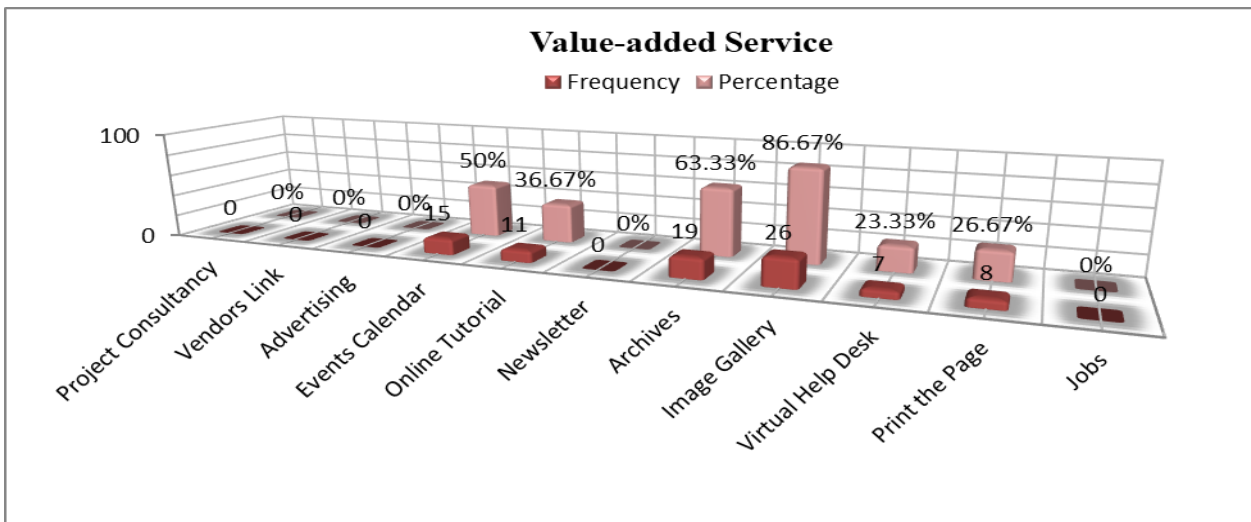
Figure 3: Value-added Services

7.4 Appearance:

It is undesirable to have to scroll left and right to see all of a Web page's content because it necessitates more interaction. Scrolling left to right to find a website was absent during the investigation. 27 (90%) websites use liquid layout, also known as responsive design, which enables web page content to resize to meet a variety of screen widths and zoom levels and the result was the same for Websites that employed noticeable color schemes that contrasted nicely on their websites. 26 (86.67%) websites use Graphics, pictures, or Charts and University logos were present on 25 (83.33%) percent of library websites. The result also shows that only 1(3.33%) website uses a library logo (Figure 4).
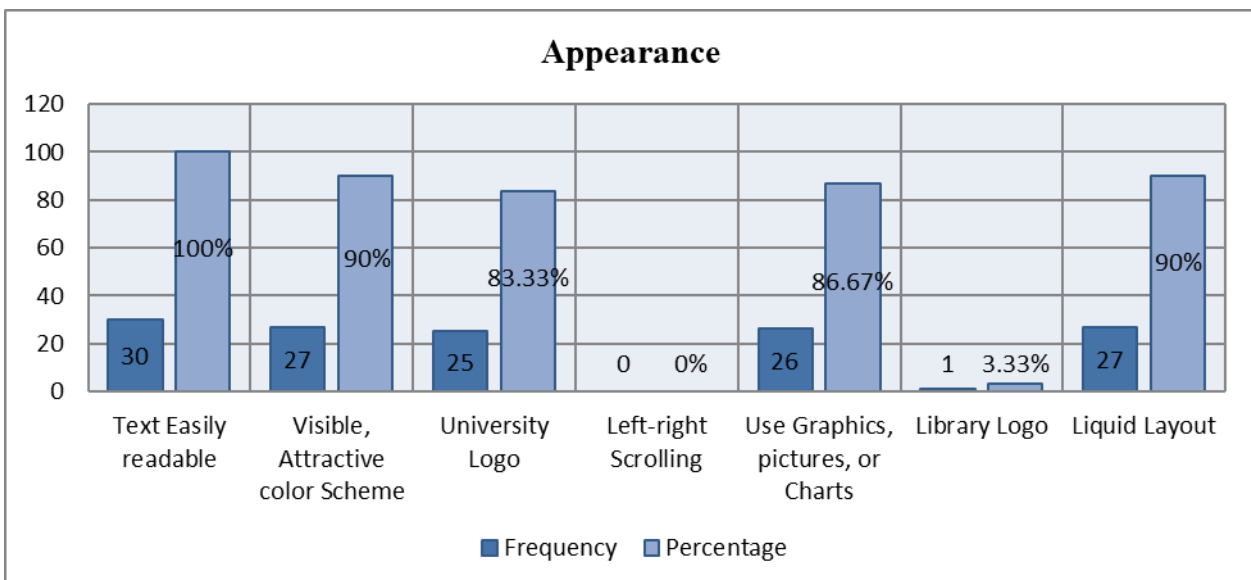

Figure 4: Appearance

7.5 Authority and Currency:

The table indicates 26 library Websites (86.67%) with information regarding website copyright. (Table 5). The study also indicates that 5 websites (16.67%) provide the last update date.
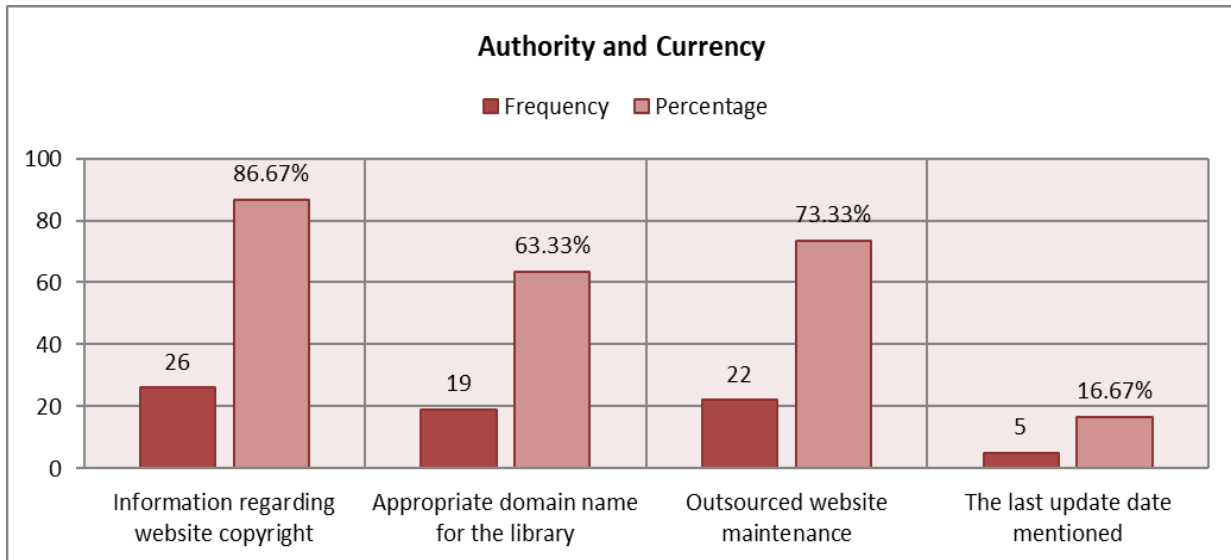
Figure 5: Authority and Currency

7.6 Navigation Features:

The library users may quickly access the desired information with the use of simple navigation. To meet the needs of users, numerous navigational tools were deployed. Users can quickly access the institution's main website by clicking on a home page link. This study discovered that links to the institution's main website were present on 27 out of 30 (90%) library websites (see Figure 6). A breadcrumb trail is a navigational aid typically used in the website or application design to help users keep track of their location within the site or application hierarchy. The investigation discovered the feature is available in 19 PULWs (66.33%) website.
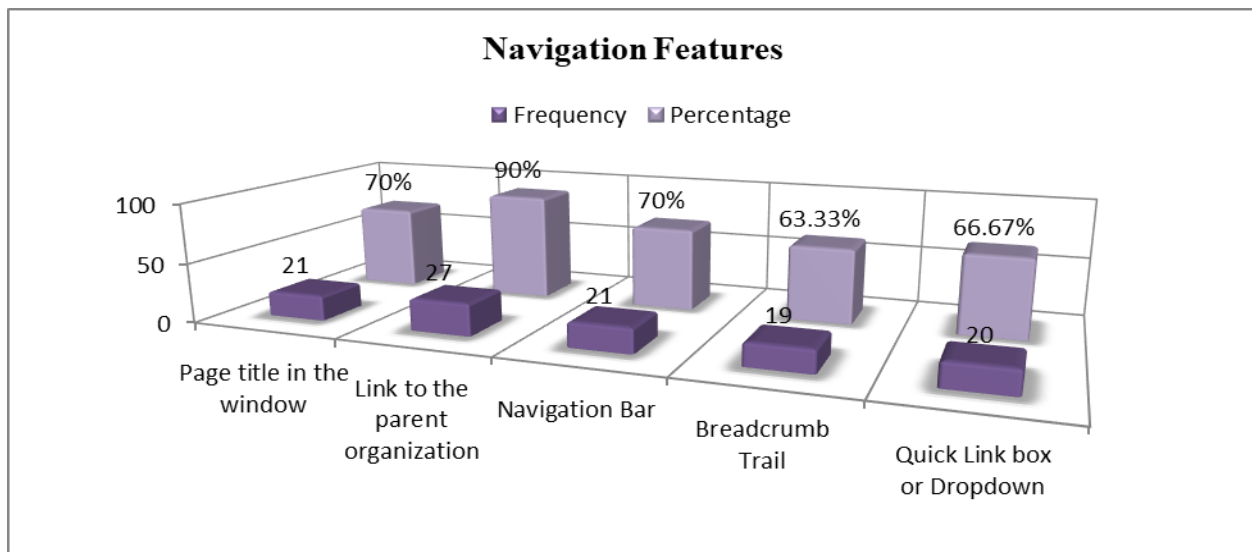

Figure 6: Navigation Features

7.7 Website Aid and Tools:

The result shows that 13 PULWs (43.33%) provide guidelines on their website and only 5 PULWs (16.67%) websites provide site maps.
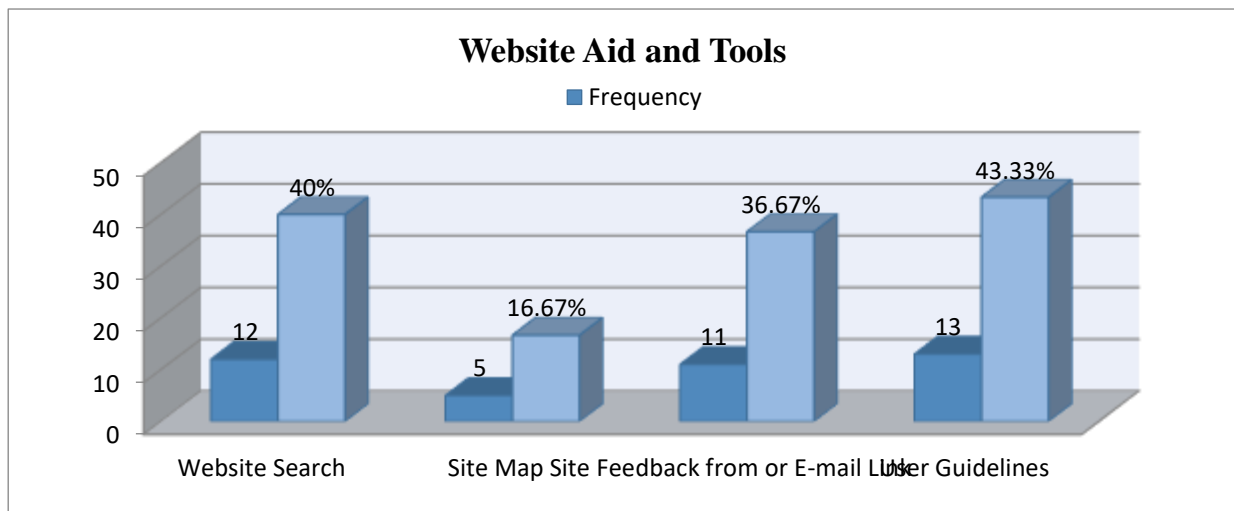
Figure 7: Website Aid and Tools

7.8 Library Staff:

The websites of 15 libraries which is about 50% provided a personnel directory (see Figure 8). Information about Staff Professional qualifications is available on 13 Library websites (43.33%). Staff contact number provided 13 Websites (46.67%).

7.9 Library General Information:

The majority of universities in Bangladesh use English as their primary language of instruction. University libraries are creating their websites in English in the age of globalization. Despite Bengali being Bangladesh's official language. According to the report, all university libraries' websites use English

Includes details regarding membership, such as the number of members, different membership levels, and how to become a member of the library, history & goals, working hours, and so on. The study depicts that 23 (76.67%) PULWs out of 30 provide working hours. Instructions about Library use and the Mission & Vision of the library were provided by 22 library websites which are about 73.33%. The study found no PUL that deals with ongoing projects in the library (Figure 8).
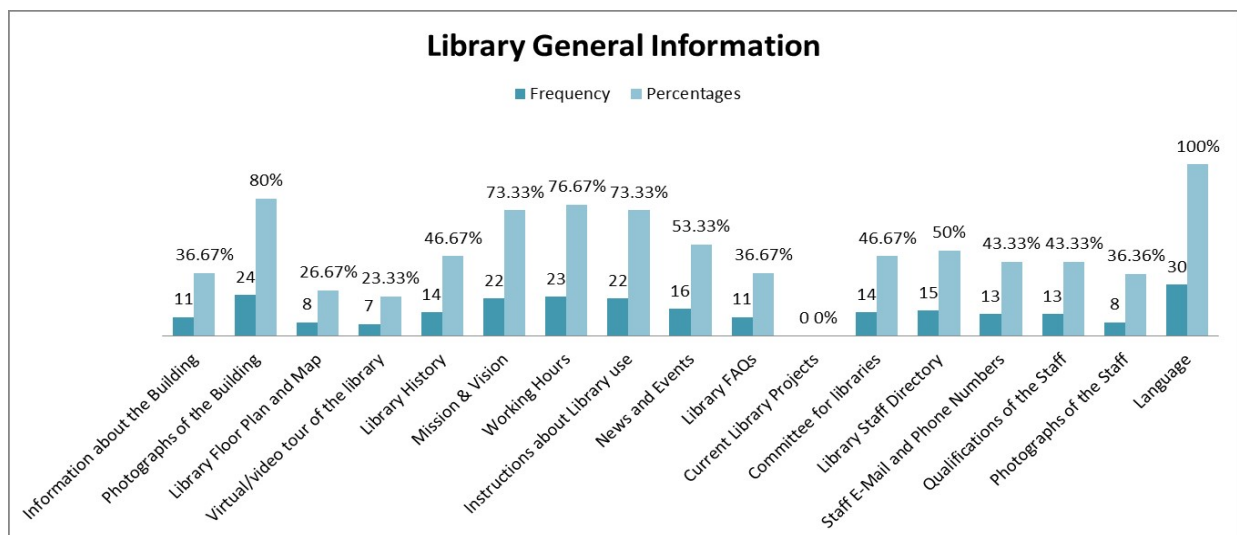

Figure 8: Library General Information

8. Discussion

The authors consider that just 25 Websites fit the standard for a good online representation of a university library that takes into account the variety of services it offers and that three or more pages are necessary. Many private university websites are still under construction**.** Users of Bangladeshi libraries regularly access websites on their mobile devices due to the rise of internet usage. The status of mobile-friendly websites is 16 out of 30 (53.33%). In the study 30 private university library websites were compared to the specified checklist. Most items in the category like the library logo, library newsletters, tutorials, events calendars, and and many more, did not get an adequate notch for including value-added services. Improvement of these services will add value while facilitating users' remote internet access to library materials. The majority of the websites examined for the study had acceptable visuals, including understandable text, contrasting color schemes, no horizontal scrolling, and the usage of the right kinds of graphics. Only 15 websites (68.18%) have the appropriate domains for a library website, indicating that university management places little importance on having a separate library web presence.

A significant issue related to the enhancement and upkeep of library websites was the lack of cooperation between the library team and the IT or web personnel. In this scenario, the IT staff was responsible for managing the website. This problem should be addressed by requiring teams to update web information and scheduling frequent meetings to encourage collaboration. The fact that the librarians in charge of website maintenance lacked the necessary skills was another problem. Professional library training, such as learning HTML to create and update webpages, could be arranged. Electricity load-shedding was noted as a technical concern during the study, causing issues with giving 24/7 access to the websites. Websites should provide a comprehensive view of library resources and services because they are the first point of access for distance users to the library. They also give on-site users vital information. Current and potential library users will find information regarding working hours, public holidays, obtaining a membership, library rules and policies, different library sections, and facilities available useful. Library experts should form a content management team and assign library pages to each member, with each person accountable for supplying information and ensuring correctness.

9. Recommendations for effective content, features, and Website maintenance issues:

9.1 User Experience: Library websites should be user-friendly, easy to navigate, and provide a seamless experience to users. The website's design and layout should be visually appealing and easy to understand, ensuring that users can find the information they need quickly and efficiently. The users of digital content of the present generation are greatly dependent on smartphones. From this perspective, this investigation, the Mobile-Friendly Test - Google Search Console Checker yielded very poor results. 53.33% (16) of 30 private university library websites are mobile-friendly, according to the results. Making library websites mobile-friendly is therefore necessary.

9.2 Outdated Content and Service: One of the main issues that library websites face is outdated content. Library websites need to be regularly updated to ensure that they are providing the latest information to users. Only 16.67% of the libraries provide the last updating date of their content and service.

9.3 Professional gap between library staff and IT staff: Another significant issue is the lack of communication between the IT team and library staff. Sometimes, IT staff members struggle to grasp the significance and urgency of particular requirements on library websites which leads to creating problems in collaboration, workflow, and difficulty in decision-making, The IT staff do not have professional knowledge of Library Management, in the same way, the library personnel do not have adequate knowledge and proficiency in IT use. As a result, there is a substantial knowledge gap in the field of maintaining websites. Consequently, it is a serious but relatively frequent issue that needs to be resolved. To bridge the professional gap between library staff and IT staff, it is essential to encourage communication, collaboration, and understanding between the two groups. This can be achieved through cross-training, joint projects, and regular meetings to discuss library technology and services.

9.4 Broken Links and Inaccessibility: Another common problem faced by library websites is broken links. Over time, links can become outdated or broken, leading to frustrating experiences for users. Which sometimes leads to inaccessible websites.

9.5 Uninterrupted power supply: Bangladesh is experiencing a power crisis because of supply and demand for electricity. However, it is closing daily. "Up to 18 hours a day of continuous electrical shortages have hampered industry and fueled popular resentment" Walsh (2013). Regarding website maintenance, two experts identified the load-shedding of energy as a challenge. Bangladesh now has respectable power production and demand rates of 25235 MW and 13992 MW (bpdb, 2021). The study emphasizes that maintaining a website requires a reliable power supply.

9.6 Internet Bandwidth: Bangladesh has generally good internet bandwidth. According to Habiba, (2020), 31% of universities have great internet connectivity, 19% have good connectivity, and 4% have bad connectivity. However, the team had technical difficulties when maintaining and upgrading the websites they experienced sluggish connections, Web servers very slow, and non-availability of websites for twenty-four hours a day. Currently, 4G internet access is available throughout Bangladesh. Utilizing 4G internet in the library is a positive sign. Website maintenance will be incredibly simple if we can continue to rely on high internet bandwidth.

9.7 Technical and skilled library staff are insufficient: Most frequently, librarians start their careers after completing their academic degrees without getting further ICT training or expertise. Making the library staff technically sound is therefore a significant challenge. This situation can be changed by offering professionals on-site ICT and computer training. Technical and competent library workers are needed for appropriate website upkeep.

9.8 Lack of training for Web development: In Bangladesh, there aren't enough resources or opportunities to set up a course or program on web development for librarians. Bhatti (2012) noted that the professional training provided to employees of libraries was insufficient and recommended the creation of a national committee made up of stakeholders to address the issue. It is impossible to operate the site without

solid website building and maintenance knowledge. The majority of respondents believed that library staff receives web development training as part of an agreement.

9.9 24/7 Non-availability: Since potential users can browse the website whenever and wherever they like it must be accessible constantly. The majority of PULW are not always accessible, according to the report, which is a result of organizational policy and a dearth of technological support. Every day, they always keep a specific window for opening and closing the site.

9.10 Slow Web Servers: People in the information technology age demand speedy online access. It's common to need a website to load in between 6 and 10 seconds. Users have negative experiences due to slow web server performance. In Bangladesh, the library website is frequently set up as a regular desktop and used as a server; as a result, when several people access the website at once, it becomes slow. On the other hand, a slow server results from a web upload of large data files. These and other problems might slow down a web server. It can only be boiled down to competently managing the library website.

10. Conclusion

Overall, the study indicates significant room for improvement, with the most concerning issue being that only 30 PULWs have dedicated websites. It is essential to build and maintain a well-designed library website for marketing and offering library services. The study reveals that PULWs in Bangladesh face challenges in mobile-friendliness (53.33% mobile-friendly), content timeliness, and the professional gap between ICT staff and Library professionals. Key findings also include insufficient staff directories (50%). Additionally, attention to continuous website accessibility, optimized server performance, and effective marketing strategies is crucial for further development. Future research should focus on enhancing user experience, addressing technical challenges, and improving training initiatives for library staff. The authors recommend regularly checking for broken links and scripts. Web 2.0 apps could be used to promote and advertise the library to its users.

13. Conflict of Interest

The authors stated that they have no conflicts of interest.

14. Authors' Contributions

Research Concept- Abdur Razzak, Research Design- Abdur Razzak, Md. Abdul Hakim Shah and Bilkis Begum, Supervision- Abdur Razzak, Literature review- Abdur Razzak and Bilkis Begum, Data analysis and Interpretation- Abdur Razzak and Md. Abdul Hakim Shah, Writing article- Md. Abdul Hakim Shah and

Abdur Razzak, Critical review- Abdur Razzak and Bilkis Begum, Article editing- Abdur Razzak, Final Proof and approval-all authors.

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