

Web Content Analysis of National Libraries' Websites in Asia: An Evaluation

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Abstract

The present study is carried out for analyzing the contents of national libraries' websites in Asia. A checklist was designed, and library webpages were evaluated, such as the site description, TLDs, language used, design factor, statement of responsibility, general information, availability of aids and tools, authority details, currency, number of visitors, file format supported, use of web 2.0 tools, webpage size and download speed and ranking of Asian national library websites globally. It is observed that 39 national libraries have dedicated library websites. Further observed that all the national libraries have used graphics in their website, while few have used animations also. Most library websites have provided statements of responsibilities like postal address, email address, and phone numbers, and few have given fax numbers. Only a few have given the currency of their national library websites like date of update, which is an essential part of the website's visibility. The National Library of Japan secured the top position based on global ranks with 8,662, Azerbaijan with 13,507 ranks, and Taiwan with 17,673 ranks.

Keywords: Web Content Analysis, National Library Website/Webpage.

Introduction

In the present era, the web has become an important source of information. With the help of the Internet, it is effortless to communicate and share tremendous information. World Wide Web (WWW) acts as a communication tool in every organization, institution, business, etc. The rapid development of information and communication technology (ICT) has increased library professionals' labor because maintaining the website at its best has become more challenging for them in the digital world. They have to play a dynamic role to provide information according to user's demands. Readers are more likely to access digital resources directly from the institution's website instead of visiting the library physically. From WWW, the concept of Web 2.0 came out and has provided more facilities for people to access information in new ways. On the web, information can be provided in various formats like multimedia. It allows viewing pictures, listening to the audio, watching videos and animations, etc., on the web.

Since national libraries' websites are globally available to the public, library professionals need to be more conscious, meticulous, effective, and dynamic in every way. One of the critical

objectives of a national library is to collect, preserve, cultivate the culture of reading among its citizens. It also seeks to endow the treasures of knowledge, heritage, and culture in general, emphasizing the rules and laws of the land in that particular country. Culture and heritage can be preserved depending on the people's beliefs of that nation

National libraries are not like other general libraries, and it is a prestigious legal deposit and particular copyright library. It has a collection of rare, valuable significant literary works, musical, dramatic works, etc. Unlike other libraries, it rarely allows citizens to borrow books. The librarians/library professionals must make the library a full-fledged institution of information resources. The website builder needs to be skilled enough to maintain the website with the latest technology to give the readers a tremendous amount of information. Therefore, the present study was brought out to analyze national libraries' websites in Asia.

Content Analysis

Content analysis is a part of webometrics study. The *Encyclopaedia Dictionary of Library and Information Science* defines "content" as the essential matter or substance of a written work or discourse instead of its form or style. All the ideas, topics, facts, or statements are contained in a book or other written work in a more general sense. In simple terms, content analysis is a study of the message itself. The content analysis is a method to emphasize aspects like system, objectivity, quantification, context, and validity concerning the inferences drawn from the communication content about the sender, the message, or the receiver of the message. It is related to making valid, replicable, and objective inferences about the message based on explicit rules (Prasad, 2008).

Significance & scope of the study

In the present digital era, library websites have become the primary source of information for an institution/organization. A webometric analysis is an emerging area of research in library and information science to analyze and evaluate library websites. Previous studies like content analysis of Asian national libraries have been conducted by Haneefa and Venugopal (2010), but there were only 28 national library websites during their time of analysis. Walia and Gupta (2013) also conducted on usability analysis of homepage of 23 national library websites in Asia. Till now, no detailed study has been conducted on Asian countries' national libraries as a whole so far. So, the present study attempts to fill up the research gap. The study will help understand the present status of national libraries' websites in Asia. The study's findings will be helpful to librarians and web admins redesigning their library websites in a more interactive and informative way. The global ranking of national libraries' websites will help know the average of unique daily visitors of the specific website and the number of page views on the selected sites over the past three months globally.

The scope of the present study is limited to the National libraries' websites in Asia. Being the biggest continent globally, Asia includes 50 independent countries (Listed in Table-1), but only 41 countries have National Library with their website. It is also noted that seven countries (Cambodia, Oman, Tajikistan, East Timor, Turkmenistan, United Arab Emirates, and Yemen) have National Library. Still, these national libraries don't have a website, and the rest two countries (North Korea and Palestine) have no National Library. Thus, the present study is further limited to the National Libraries' websites of 41 countries in Asia.

Table 1

List of Asian Countries' National Libraries having Websites

Sl. No.	Asian Countries	National Library	Website	Year of Establishment	Location/ Place
1	Afghanistan	National Library of Afghanistan (Kabul University)	www.ku.edu.af	1932	Kabul, Afghanistan
2	Armenia	National Library of Armenia	www.nla.am	1832	Yerevan, Armenia
3	Azerbaijan	National Library of Azerbaijan	www.anl.az	1923	Baku
4	Bahrain	Shaikh Isa bin Salman Al Khalifa National Library	www.icc.gov.bh		Juffair
5	Bangladesh	National Archives and Libraries of Bangladesh	www.nanl.gov.bd	1972	Dhaka
6	Bhutan	National Library of Bhutan	www.library.gov.bt	1967	Thimphu,
7	Brunei	Dewan Bahasa dan Pustaka Library	https://www.librarybrunei.gov.bn/	1963	Brunei
8	China	National Library of China	www.nlc.gov.cn	1909	Beijing, China
9	Cyprus	Cyprus National Library	www.cypruslibrary.gov.cy	1927	Nicosia
10	Georgia	National Parliamentary Library of Georgia	www.nplg.gov.ge	1846	Tbilisi, Georgia
11	India	National Library of India	www.nationallibrary.gov.in	1953	Alipore
12	Indonesia	National Library of Indonesia	www.perpusnas.go.id	1980	Jakarta, Indonesia
13	Iran	National Library of Iran	www.nlai.ir	1937	Tehran
14	Iraq	Iraq National Library and Archives	www.iraqnla-iq.com	1920	Baghdad
15	Israel	National Library of Israel	web.nli.org.il	1892	Jerusalem, Israel
16	Japan	National Diet Library	http://www.ndl.go.jp	1948	Tokyo
17	Jordan	National Library of Jordan	http://www.nl.gov.jo	1977	Amman, Jordan
18	Kazakhstan	National Library of the Republic of Kazakhstan	www.nlrk.kz	1931	Almaty, Kazakhstan
19	Kuwait	National Library of Kuwait	www.nlk.gov.kw	1923	Kuwait city
20	Kyrgyzstan	National Library of Kyrgyzstan	http://nlkr.gov.kg	1934	Bishkek, Kyrgyzstan
21	Laos	National Library of Laos	www.nationallibraryoflaos.net	1956	Vientiane, Laos
22	Lebanon	Lebanese National Library	www.bnl.gov.lb	1921	Beirut
23	Malaysia	National Library of Malaysia	www.pnm.gov.my	1966	Kuala Lumpur, Malaysia
24	Maldives	Gaume Kuthubuhaanaa	www.nlm.gov.mv	1945	Male
25	Mongolia	National Library of Mongolia	www.nationallibrary.mn	1921	Ulaanbaatar, Mongolia
26	Myanmar	National Library of Myanmar	http://www.nlm-npt.gov.mm	1952	Yankin, Yangon

Sl. No.	Asian Countries	National Library	Website	Year of Establishment	Location/ Place
27	Nepal	Nepal National Library	www.nnl.gov.np	1957	Nepal
28	South Korea	National Library of Korea	www.nl.go.kr	1945	Seoul, South Korea
29	Pakistan	National Library of Pakistan	www.nlp.gov.pk	1951	Islamabad , Pakistan
30	Philippines	National Library of Philippines	www.nlp.gov.ph	1901	Ermita, Manila
31	Qatar	Qatar National Library	www.qnl.qa	2012	Doha, Qatar
32	Russia	National Library of Russia	www.nlr.ru/	1795	Sankt-Peterburg, Russia
33	Saudi Arabia	King Fahad National Library	www.kfnl.gov.sa	1990	Riyadh, Saudi Arabia
34	Singapore	National Library of Singapore	www.nlb.gov.sg	1923	Victoria street, Singapore
35	Sri Lanka	National Library of Sri Lanka	www.natlib.lk	1990	Colombo, Sri Lanka
36	Syria	Al-Assad National Library	www.lassad-library.gov.sy	1984	Damascus, Syria
37	Taiwan	National Library of Taiwan	www.ncl.edu.tw	1933	Taipei, Taiwan
38	Thailand	National Library of Thailand	www.nlt.go.th	1905	Krung Thep Maha Nakhon, Thailand
39	Turkey	National Library of Turkey	www.mkutup.gov.tr	1946	Ankara, Turkey
40	Uzbekistan	National Library of Uzbekistan	www.natlib.uz	2002	Tashkent, Uzbekistan
41	Vietnam	National Library of Vietnam	www.nlv.gov.vn	1917	Hanoi, Vietnam
42	Cambodia*	National library of Cambodia	www.khmerica.com	1924	Phnom Penh, Cambodia
43	North Korea**	—	—	—	—
44	Oman*	National Library of Oman	—	—	Oman
45	Palestine**	—	—	—	—
46	Tajikistan*	National library of Tajikistan	—	1934	Dushanbe, Tajikistan
47	Timor-Leste*	National library of East Timor	—	2009	Dili
48	Turkmenistan*	National library of Turkmenistan	—	1895	Ashgabat
49	United Arab Emirates*	National library of United Arab Emirates	—	1981	Abu Dhabi
50	Yemen*	National library of Yemen	—	—	Sana'a, Yemen

(Source: <https://www.countries-ofthe-world.com/countries-of-asia.html>)

Note: * indicates- No library website (7), ** indicates-No national library (2)

Literature Review

Brahma and Verma (2018) evaluated the websites of National libraries' of BRICS countries. The study observed that the National Library of China leads with the highest domain and page authority. National library of Russia secured the first position with the highest Internal, External and Simple Web Impact Factor. Verma and Brahma (2017) conducted a study on webometric analysis of eight National Libraries' websites in South Asia. It found that the National Library of India occupies the top position with the highest domain authority, page Authority, highest External Equity-Passing Links, and Total Equity-Passing Links. The Web Impact Factor of the National Library of India gained the top profile with the highest SWIF and EWIF. Devi and Verma (2016) compared the design and content features of North-Eastern University (NEHU) and Mizoram University (MZU) websites. They found that NEHU got more features in comparison to MZU. Both the university website used simple text versions. All the general information about the university is available on both websites. Both MZU and NEHU websites satisfy the customer's interest in knowing about their university facilities. Khan and Shehzad (2015) investigated National libraries' websites of Bangladesh, India, Iran, Pakistan, and Sri Lanka. They found that National Library Board Singapore secured first place, while the National Archives and National Library of Bangladesh attained at last. Walia and Gupta (2013) evaluated the usability features of selected national libraries' websites of Asia. They observed that 44 Asian countries do have a national library. Only 35 countries have a website, out of which only 33 are functional and 23 national libraries of Asia have a comprehensive English version website. The National Library of Japan recorded to be on top. The majority of websites provide only physical addresses and email addresses. National Library of Maldives was at bottom rank. Haneefa and Venugopal (2010) evaluated the contents of 28 national library websites in Asia. The study discovered that most of the national library websites in Asia provide informative links to contacts, copyright, news, and events, provide links to OPAC, and have search facilities and links to other libraries. Most of the library websites were not well-structured, and some have dead links; the majority of the libraries provide location and sitemap on their homepage. Kumar, Raj, Naik & Reddy (2009) analyzed six Indian Institute of Management (IIMs) library websites: Kolkatta, Bangalore, Indore, Kozhikode, Lucknow, and Ahmedabad. They explored that all the library websites of IIMs have information regarding Web OPAC, database access, digital library, ILL, reference service, etc. Information on non-book materials and e-resources is also provided. It also indicated that all library websites have facilities on contact addresses, FAQ's, feedback about library, and site map.

Objectives

The present study examines the web content of the National Libraries' websites of Asia. The specific objectives of the present study are:

1. Evaluate the structure, content, and currency of respective National Libraries websites
2. Analyze the URLs, size, and download speed of respective National Libraries websites
3. Find out the patterns of information gathering, graphics, and multimedia in the respective National Libraries website
4. Find out the global rank of National Libraries websites.

Methodology

The present study is about National Libraries' websites content analysis in Asia. A survey and observation research methods were used to collect the primary data from the library website/webpage. (i) A checklist (Appendix) was designed and developed to collect the primary data from 41 national library websites using the observation method. (ii) To analyze the web page size and the download speed, a Website Optimization tool, i.e., Web Page Analyser,¹ was used. (iii) For the world ranking of the selected national libraries' websites globally, an online tool- Alexa Traffic Rank² was used. The data were collected during February 2019.

Result

Availability of national libraries' website/ webpage

Under the heading of the libraries' website/webpage, two parameters have been undertaken viz., Library has a dedicated website and Library has a webpage. The majority (95%) of the national libraries' websites in Asia have dedicated library websites, whereas only Afghanistan and Brunei have separate library web pages for their national library.

Site description of national libraries' website/webpage

Table 2 brings out the site description of the national libraries' website/webpage in Asia. It is observed from the study that all 41 (100%) library websites use graphics in their website. They are Afghanistan, Armenia, Azerbaijan, Bahrain, Bangladesh, Bhutan, Brunei, China, Cyprus, Georgia, India, Indonesia, Iran, Iraq, Israel, Japan, Jordan, Kazakhstan, Kuwait, Kyrgyzstan, Laos, Lebanon, Malaysia, Maldives, Mongolia, Myanmar, Nepal, South Korea, Pakistan, Philippines, Qatar, Russia, Saudi Arabia, Singapore, Sri Lanka, Syria, Taiwan, Thailand, Turkey, Uzbekistan, and Vietnam, while none of the websites are using only text version. It is also observed that 17 (43%) countries have used animation in their respective national library websites to highlight important information and attract users while accessing the website, i.e., Armenia, Azerbaijan, Bahrain, Bangladesh, Bhutan, Georgia, Indonesia, Israel, Japan, Laos, Malaysia, Mongolia, Qatar, Russia, Singapore, Taiwan, and Thailand.

Table 2

Site Description of National Libraries' Website/Webpage

Sl. No.	Criteria	Number of countries
1	Use of graphics	41 (100%)
2	Text only version	0
3	Animation available	17 (43%)

The language used in national libraries' websites/ webpage

Language is an essential factor while developing a website. It plays a vital role in accessing the information in users' preferred language. It is observed from the study that several national libraries' website provides information in more than one language. It is further observed that the Lebanese National Library offers information in five languages (i.e., Arabic, French, English, Portuguese, and Spanish). Seven countries are offering information in three languages (Afghanistan: English, Persian & Pashto; Azerbaijan: Azerbaijan, English & Russian; Israel:

¹ Web Page Analyser- <http://www.websiteoptimization.com/services/analyze/>

² Alexa Traffic Rank- www.alexa.com/siteinfo/

Hebrew, Arabic & English; Japan: English, Chinese & Korean; Kazakstan: Kazak, Russian & English; Uzbekistan: Russian, Uzbek & English; and Vietnam: Vietnamese, French & English).

While 28 countries are offering information in English and their national languages, the countries are Armenia, Bahrain, Bangladesh, Bhutan, Brunei, China, Cyprus, Georgia, India, Indonesia, Iran, Iraq, Jordan, Kuwait, Kyrgyzstan, Laos, Malaysia, Maldives, Mongolia, Myanmar, Korea, Qatar, Russia, Saudi Arabia, Syria, Taiwan, Turkey, and Thailand.

The study observed that the global language 'English' is offered by all the national libraries' websites of 41 countries. It is further observed that 36 countries offered their site in the national language, English, and other languages. Five countries viz., Nepal, Pakistan, the Philippines, Singapore, and Sri Lanka have offered their site in only one language, i.e., English. The most common language used in selected national library websites is Arabic, used by nine countries viz., Bahrain, Iraq, Israel, Jordan, Kuwait, Lebanon, Qatar, Saudi Arabia & Syria in their site, followed by the Russian language by 5 countries viz., Azerbaijan, Kazakhstan, Kyrgyzstan, Russia, and Uzbekistan.

Classification of national libraries' website/ webpage by design factor

Table 3 shows the classification of national libraries websites/webpage by design factor. The first parameter is the view resolution of the site is suggested, and the second parameter is the suggestion of the browser compatibility in the site. Suppose the web designer mentions the resolution (for example- 1366 x 768 or 1024 x 768px) for viewing the website and the browser compatibility. In that case, it will be best for the viewers to use the website considerably.

In the first parameter, the study found that only three (7%) countries have provided the suggestion on viewing resolution, and they are Malaysia, Taiwan, and Vietnam, while most of the countries (38) did not provide the suggestion on viewing resolution. On the other hand, the second parameter is the suggestion on browser compatibility. Only two (5%) countries, i.e., Malaysia and Vietnam, have provided browser compatibility on the website, and the rest have not provided.

Table 3

Classification of National Libraries' Websites/Webpage by Design Factor

Sl. No.	Country	View resolution is suggested	Browser compatibility is suggested
1	Malaysia	1	1
2	Taiwan	1	0
3	Vietnam	1	1
Total		3 (7%)	2 (5%)

Statement of responsibility of national libraries website/webpage

Table 4 depicts the responsibility of national libraries' websites/webpages. It is observed from the study that among the 41 websites, 40 (98%) websites have provided the postal address in their respective website, and Qatar is the only national library that has not provided the postal address. The phone numbers are useful identities for the respective website, and the information about phone numbers has been given by 38 (93%) countries, while only three (Indonesia, Iran, and Laos) library websites have not provided the phone number on their site. The information about fax numbers has been provided by 29 (71%) countries, while Afghanistan, Bahrain, China, Indonesia, Iran, Japan, Kazakhstan, Laos, Myanmar, Nepal, Philippines, and Qatar have

not provided the fax numbers in their respective site. As we know, Email is an important and effective means of communication. It is the cheapest and fastest tool for communication with the help of the Internet. It is observed from the study that almost 39 (95%) countries have provided the information regarding Email addresses in their site, and only two countries, i.e., Georgia and Japan, have not provided the Email address on their respective site.

So, it is found that under the heading responsibility of national libraries' website/webpage, out of the four parameters, the majority (98%) of the library websites have provided a postal address in their site, followed by the email address (95%), phone number (93%) and fax (71%).

Table 4

Statement of Responsibility of National Libraries' Website/Webpage

Sl. No.	Criteria	Number of countries
1	Postal Address	40 (98%)
2	Phone No.	38 (93%)
3	Fax	29 (71%)
4	Email	39 (95%)

General information about the national libraries' website/webpage

Table 5 shows general information about the availability of the national library website/web page. Under this heading, the researcher has brought out 14 parameters for evaluating the website. The study shows that 93% of the countries have provided information about the library/history in their respective websites/webpages. It is clear from the study that the majority of the national libraries are aware that providing general knowledge about the respective libraries, like their history, establishment, and location, is a must. In contrast, only three countries have not provided the information. It is followed by general information like library news/updates/events where 90% of the national libraries have provided this information. Visitors get information about the current/latest happenings displayed on the respective library website/webpage. The third highest parameter 'Library Opening hours', where 80% of national libraries have provided information in their respective library website/webpage.

Library Brochure provides information about the library (collection, services, etc.) in pdf format in the respective library website/webpage. The study found that only 7% of the national libraries have provided library brochures on their site, and the majority, 93%, did not provide them. Likewise, the Union Catalogue is also provided by only 7% of the national libraries' respective websites. It is further observed that only 17% of the national libraries have provided the 'Ask a Librarian' facility. The library website/webpage should provide 'Ask a Librarian' facility so that users can ask their doubts, share opinions and stay in touch with the librarian/library professional directly. Accordingly, the librarian will reply based on the users' queries. The table has clearly shown each parameter.

Table 5

General Information about National Libraries' Website/Webpage

Sl. No.	Criteria	Number of countries
1	About the library/History	38 (93%)
2	Mission/Statement/Objectives/ Aim	26 (63%)
3	Library Opening hours	33 (80%)
4	Library member/staffs	19 (46%)
5	Library Brochure	3 (7%)
6	Library Rules	9 (22%)
7	Library news/updates/ events	37 (90%)
8	Links to OPAC	31 (78%)
9	Union Catalogue	3 (7%)
10	Location map/guide	28 (68%)
11	Library Registration/Membership details	23 (56%)
12	Library infrastructure	11 (27%)
13	Photo gallery	20 (49%)
14	Ask a Librarian	7 (17%)

Availability of aids and tools on national libraries' website/ webpage

Table 6 shows the aids and tools of national libraries' websites/webpages. Under this heading, the researcher has made four criteria, i.e., whether the library website has provided feedback facility or not, a search box is provided or not, whether the web designer has provided the site map for finding the list of pages of websites in one place. The last criteria are FAQ, which lists frequently asked questions and answers on a particular topic.

The study observed that 12 (30%) countries provided feedback facilities on their respective websites in the first criterion. The feedback option in the website allows users to give comments or opinions about the website, which will help the website developer improve the condition of the website. Knowing how users are rating the website is very important. The 12 countries which have provided feedback options are Afghanistan, Bangladesh, Brunei, India, Mongolia, Pakistan, Qatar, Saudi Arabia, Singapore, Taiwan, Uzbekistan, and Vietnam. It found out that most countries have not provided feedback facilities on their respective site. This indicates a not user-friendly website and a significant disadvantage for the developer.

The second criteria found that 29 (71%) countries have provided a search box on their library website/webpage. The search option helps the users find content by typing specific words or phrases instead of navigating through the website's structure. The 29 countries which have provided search facilities are Afghanistan, Bahrain, Bangladesh, Brunei, China, Cyprus, Georgia, Indonesia, Iran, Israel, Japan, Jordan, Kazakhstan, Kuwait, Kyrgyzstan, Laos, Lebanon, Malaysia, Mongolia, Myanmar, Nepal, South Korea, Pakistan, Qatar, Russia, Saudi Arabia, Singapore, Sri Lanka, and Uzbekistan.

The study observed that only 19 (46%) countries had provided a site map in their respective website/webpage in the third criteria. They included Afghanistan, Bahrain, China, Indonesia, Iran, Japan, Jordan, Lebanon, Malaysia, Maldives, Myanmar, South Korea, Qatar, Russia, Saudi Arabia, Singapore, Taiwan, Thailand, and Uzbekistan. Most of them have not provided a site map on their site. A site map helps both the users and search engines navigate the site.

The last criterion is FAQs, i.e., Frequently Asked Questions (FAQ). The study observed that only 12 (29%) countries had provided FAQs in their respective websites/web pages, i.e.,

Afghanistan, Brunei, Georgia, Japan, Kyrgyzstan, Maldives, Myanmar, Saudi Arabia, Singapore, Sri Lanka, Taiwan, and Turkey. Most of the countries have not provided FAQs on their site.

It is further observed that out of the four criteria developed under the heading aids and tools, the majority of the countries, i.e., 71%, have provided search box in their respective site, followed by site map with 46% and feedback facility with 30%.

Table 6

Availability of Aids and Tools on National Libraries' Website/Webpage

Sl. No.	Criteria	Number of countries
1	Library website feedback facility	12 (30%)
2	Search box	29 (71%)
3	Site map	19 (46%)
4	FAQs	12 (29%)

Authority details of national libraries' website/ webpage

Table 7 depicts the authority details of the national libraries website/webpage. If the developer built a website, it is mandatory to provide copyright details at the bottom of the respective website/webpage. Copyright is all about protecting your work, and the existence of copyright notice will help from infringement. Though websites are available to the public and anybody can visit, there is a possibility of stealing or copying the content of the respective website. From the study, it is observed that 35 (85%) countries have provided copyright statements. They are Afghanistan, Armenia, Azerbaijan, Bhutan, Brunei, China, Cyprus, Georgia, India, Indonesia, Iraq, Japan, Jordan, Kazakhstan, Kuwait, Kyrgyzstan, Laos, Lebanon, Malaysia, Maldives, Mongolia, Myanmar, Nepal, South Korea, Pakistan, Philippines, Qatar, Russia, Saudi Arabia, Singapore, Sri Lanka, Syria, Taiwan, Thailand, and Vietnam. It is suggested that the rest of the library websites should also provide copyright statements.

The second criterion is the maintenance details of the website. Maintaining the website at its best which includes checking for mistakes and updates regularly for the smooth run of the website, will enhance the authenticity of the website. The study observed that none of the countries provided maintenance details on their respective websites. It is suggested to further work on this area.

Table 7

Authority Details of National Libraries' Website/Webpage

Sl. No.	Criteria	Number of countries
1	Copyright statement	35 (85%)
2	Maintenance details	0

Currency of national libraries' website/ webpage

Table 8 shows the currency of the national libraries' website/webpage. The currency of information is an essential feature in the digital world. It is observed from the table that among 41 countries, only seven (17%) have provided the website's date of updates. The countries which have provided this criterion are Bangladesh, India, Lebanon, Malaysia, Maldives, Singapore, and Taiwan. The majority have not provided the date of website updates on their

sites, which indicates poor concern about the website. The users will not know the currency of the information available on their sites. It is also important that the website's page be updated constantly at least within three months (Devi, 2017). It is observed from the study that among the seven countries that have provided the date of updates, six (15%) countries have updated the website in the past three months: Bangladesh, India, Malaysia, Maldives, Singapore, and Taiwan.

It is further observed that only three (7%) countries have given the current date in their library website/web page: India, Malaysia, and Taiwan.

Table 8

Currency of National Libraries' Website/Webpage

Sl. No.	Criteria	Number of countries
1	Date of updation is given	7 (17%)
2	Page has been updated for past 3 months	6 (15%)
3	Present date is given	3 (7%)

Number of visitors in the national libraries' website/ webpage

The website which provides the total number of visitor's records will enable the library professionals/developers to track whether the clientele are interested in browsing the respective website or not. It will help the web designer set a goal and other necessary improvements for the website's effectiveness. The analysis found that only nine (22%) National libraries have given the number of visitors in their library website/webpage. They are Armenia, Indonesia, Japan, Jordan, Kazakhstan, Kyrgyzstan, Laos, Malaysia, and Uzbekistan. The 32 National libraries' websites/web pages did not provide information under this criterion.

File format supported by websites of national libraries

Table 9 shows the file format supported by Asia's national libraries' websites. A file format is a standard way to encode information storage in a computer file. It describes the way how data is stored in a file. It defines how the data is organized in the file and the type of data it contains. The file format is based on the end of its name, i.e., the last letters of the file name. For example, file extension for images are .jpg, .png, gif, tif ; for video file type- .wmv, mp4; for text document- .doc, docx, .txt etc.

The study found that file formats like HTML and JPEG are used by all the 41 websites of national libraries in Asia, which is followed by PNG & PDF (87.80%), GIF (53.65%), WMV (43.90%), and MS-Word (21.95%). The least file format is MS-PowerPoint used by only one country (Kazakhstan). It is further observed that the National Library of Kazakhstan has used a maximum number of file formats (seven) to represent the information contents of the website. Most national libraries have used five or six file formats in their website. A total of 13 countries (Bhutan, Georgia, India, Indonesia, Israel, Jordan, Malaysia, South Korea, Qatar, Russia, Taiwan, Thailand, and Uzbekistan) have used six file formats. Likewise, another 13 countries (Afghanistan, Armenia, Brunei, Iran, Iraq, Japan, Kuwait, Kyrgyzstan, Maldives, Nepal, Singapore, Turkey, and Vietnam) have used five file formats in their site. In comparison, four types of file formats are used by nine countries (Azerbaijan, Bangladesh, China, Cyprus, Laos, Pakistan, Philippines, Sri Lanka, and Syria). Five countries have used the least file format

(three) (Bahrain, Lebanon, Mongolia, Myanmar, and Saudi Arabia).

Table 9

File Format Supported by Websites of National Libraries of Asia

Sl. No.	File Format	Number of countries
1	HTML	41 (100%)
2	PDF	36 (87.80%)
3	MS-Word	9 (21.95%)
4	MS-PowerPoint	1 (2.43%)
5	JPG/JPEG	41 (100%)
6	PNG	36 (87.80%)
7	GIF	22 (53.65%)
8	WMV (Windows Media Video)	18 (43.90%)

Availability of web 2.0 tools in national libraries' website/ webpage

Table 10 depicts information about web 2.0 services in National Libraries. After analyzing, it is observed that Facebook (78.04%) is a common tool used by most of the national libraries of Asia. They are 32 countries, viz., Afghanistan, Armenia, Azerbaijan, Bangladesh, Bhutan, Brunei, Georgia, India, Indonesia, Iraq, Israel, Japan, Jordan, Kazakhstan, Kuwait, Kyrgyzstan, Laos, Lebanon, Malaysia, Maldives, Mongolia, Myanmar, South Korea, Philippines, Qatar, Russia, Saudi Arabia, Singapore, Sri Lanka, Syria, Taiwan, and Thailand). The second highest tool is Twitter (53.65%) provided by 22 countries (Afghanistan, Armenia, Bahrain, Bangladesh, Brunei, Georgia, India, Indonesia, Israel, Japan, Kazakhstan, Kuwait, Lebanon, Maldives, Mongolia, South Korea, Qatar, Russia, Saudi Arabia, Singapore, Sri Lanka, and Thailand). This is followed by RSS and YouTube provided by 14 countries, constituting 34.14%. It also recorded that the least tool, i.e., Blog, is provided by only one country.

It is further observed that Israel has provided links to maximum tools (6), i.e., Facebook, YouTube, Twitter, Instagram, Pinterest, and Flickr. Whereas South Korea, Qatar, and Russia have linked five web 2.0 tools. The study also investigated that the National Library of Afghanistan, Kazakhstan, Lebanon, Malaysia, Russia, and Saudi Arabia has provided links to multiple uncommon tools in their site, which is not so familiar for other countries. So the countries providing those uncommon tools or local tools used only in specific countries are considered under the heading 'others'. It is to be noted that the National Library of Cyprus, Nepal, Pakistan, and Vietnam has not provided links to any single web 2.0 tool.

Table 10

Availability of Web 2.0 Tools in National Libraries' Website/Webpage

Sl. No.	Web 2.0	Number of countries
1	RSS	14 (34.14%)
2	Facebook	32 (78.04%)
3	YouTube	14 (34.14%)
4	Twitter	22 (53.65%)
5	Blog	1 (2.43%)
6	LinkedIn	2 (4.87%)
7	Insta-gram	12 (29.26%)
8	Pinterest	2 (4.87%)
9	Flickr	2 (4.87%)
10	Others	6 (14.63%)

Classification of national libraries' website by webpage size and downloads speed

Table 11 shows the classification of selected National Libraries' websites based on website size and downloads speed. The web page size and download speed are important features of a website. The larger the size of the page, the longer it takes to download the page, and the smaller the size of the page, the least time it takes to download. The data has been collected using a Web Page Analyzer Tool, i.e., Website Optimization, to collect the data for the web page size and the download speed of the national libraries' website/web page. For the present study, the 56K connection rate (download speed) has been taken to represent the other connection rates. The study observed that the National Library of Bahrain (3422383 bytes), Brunei (3018182 bytes), China (3006894 bytes), India (6126689 bytes), Japan (3001448 bytes), Kazakhstan (5387049 bytes), Malaysia (3009616 bytes), Mongolia (3198679 bytes), Myanmar (3032726 bytes), Korea (3015710 bytes), Sri Lanka (3204858 bytes), Thailand (3048407 bytes) and Uzbekistan (3539440 bytes) had exceeded the maximum size 3000000 bytes of the bytes so the data cannot be retrieved from the Web Page Analyzer Tool whereas the data of National Library of Maldives, Singapore, and Taiwan cannot be retrieved from Web Page Analyzer Tool due to an Error. It also found that the data of National Library Lebanon and Qatar cannot be retrieved due to 404 Not Found and 403 Forbidden, respectively.

It also visualized the size of selected libraries' websites. It found that the National Library of Kyrgyzstan (2941796 bytes) occupied the first position in having the maximum size of the website in bytes. The total size of the image is 2632501 bytes having 89.48% of images in total size. This is the reason why it takes a longer time (595.90 seconds) for downloading the page at the 56K connection in seconds, which is followed by the National Library of Vietnam (2805764 bytes), which takes 595.18 seconds for downloading the page at the 56K connection in seconds having 91.15% of images in total size.

It is observed that the National Library of Armenia (85 bytes) has the smallest size of the website, which took significantly less time to download the page (0.22 seconds) at 56K connection in seconds, followed by the National Library of Cyprus (469 bytes) having the second-lowest size of the website taking 0.29 seconds to download the page at 56K connection in seconds

Table 11

Classification of National Libraries' Website by Webpage Size and Download Speed

Sl. No.	Country	Total Size of the Websites in bytes	Total Size of the Images in bytes	Percentage of Images in total size (%)	Download time at 56K connection/ seconds
1	Afghanistan	1252941	1205977	96.25%	273.51 seconds
2	Armenia	85	0	0	0.22 seconds
3	Azerbaijan	612	0	0	0.52 seconds
4	Bahrain	3422383	—	—	—
5	Bangladesh	1949358	1809050	92.80%	400.10 seconds
6	Bhutan	2452861	2421889	98.73%	492.25 seconds
7	Brunei	3018182	—	—	—
8	China	3006894	—	—	—
9	Cyprus	469	0	0	0.29 seconds
10	Georgia	2477719	1877340	75.76%	515.01 seconds
11	India	6126689	—	—	—
12	Indonesia	81703	999	1.22%	24.68 seconds
13	Iran	1893499	1664206	87.89%	397.37 seconds
14	Iraq	2224007	2181823	98.10%	449.64 seconds
15	Israel	603959	66322	10.98%	134.97 seconds
16	Japan	3001448	—	—	—
17	Jordan	1339087	214352	16%	273.08 seconds
18	Kazakhstan	5387049	—	—	—
19	Kuwait	2468423	2186106	88.56%	504.55 seconds
20	Kyrgyzstan	2941796	2632501	89.48%	595.90 seconds
21	Laos	1166044	979469	83.99%	239.59 seconds
22	Lebanon	—	—	—	—
23	Malaysia	3009616	—	—	—
24	Maldives	—	—	—	—
25	Mongolia	3198679	—	—	—
26	Myanmar	3032726	—	—	—
27	Nepal	1662739	840778	50.56%	346.18 seconds
28	South Korea	3015710	—	—	—
29	Pakistan	2445706	2374286	50.56%	494.43 seconds
30	Philippines	1210024	976838	80.72%	257.36 seconds
31	Qatar	—	—	—	—
32	Russia	889473	765496	86.06%	186.67 seconds
33	Saudi Arabia	1091816	971316	88.96%	229.20 seconds
34	Singapore	—	—	—	—
35	Sri Lanka	3204858	—	—	—
36	Syria	328647	42160	12.82%	73.70 seconds
37	Taiwan	—	—	—	—
38	Thailand	3048407	—	—	—
39	Turkey	625	0	0	0.32 seconds
40	Uzbekistan	3539440	—	—	—
41	Vietnam	2805764	2557516	91.15%	595.18 seconds

Global rank of national libraries' websites

Table 12 depicts the ranking of national libraries' websites globally by using an online tool- **Alexa Traffic Rank**³, which is a ranking system and is calculated by using a combination of an average of unique daily visitors to the selected websites and the number of page views on the selected sites over the past three months globally.

Table 12 shows the global ranking of selected national libraries' websites. It is clear from the study that the National library of Japan secured the top position with 8,662 ranks, followed by Azerbaijan with 13,507 ranks at second and Taiwan with 17,673 ranks occupied third places globally. In comparison, the National Library of Iran, Singapore, South Korea, Indonesia, Russia, Qatar, and Georgia obtained 4th, 5th, 6th, 7th, 8th, 9th, and 10th rank, respectively. The study further observed that the National Library of Cyprus secured the last rank among the 41 national libraries' websites, followed by Laos at 40th rank, the Maldives at 39th rank, Myanmar at 38th rank, Nepal at 37th rank, Lebanon at 36th rank, and Bahrain at 35th rank, etc. It is to be noted that the National Library of India occupied 22nd rank among the 41 countries.

Table 12

Global Rank of National Libraries' Websites

Country	Global Rank	Ranking of Asian National Libraries' Websites
Japan	8,662	1
Azerbaijan	13,507	2
Taiwan	17,673	3
Iran	26,618	4
Singapore	39,049	5
South Korea	45,922	6
Indonesia	54,743	7
Russia	63,892	8
Qatar	67,489	9
Georgia	70,386	10
Israel	90,471	11
Saudi Arabia	1,12,466	12
Afghanistan	1,69,462	13
Uzbekistan	2,03,781	14
Malaysia	2,68,957	15
Vietnam	2,98,117	16
Turkey	3,11,442	17
Armenia	3,54,788	18
Iraq	4,04,574	19
Philippines	4,95,450	20
Kazakhstan	5,34,650	21
India	6,55,954	22
Thailand	8,08,958	23

³ Alexa Traffic Rank - www.alexa.com/siteinfo/

Country	Global Rank	Ranking of Asian National Libraries' Websites
China	9,92,208	24
Sri Lanka	15,25,073	25
Kuwait	17,09,854	26
Jordan	17,24,957	27
Pakistan	17,27,129	28
Kyrgyzstan	22,37,027	29
Bangladesh	22,39,769	30
Syria	22,62,540	32
Brunei	24,39,512	31
Bhutan	24,50,602	33
Mongolia	25,39,096	34
Bahrain	50,70,331	35
Lebanon	80,84,059	36
Nepal	1,12,35,278	37
Myanmar	1,53,39,142	38
Maldives	1,66,92,918	39
Laos	1,67,65,944	40
Cyprus	1,72,82,820	41

Discussion

In the present era, libraries have transformed into digital and virtual libraries, and websites have become the important source of information. Library websites are the gateway to institution's resources as it gives the potential for reaching wider users. Libraries need to stay updated with the latest technologies for better services and satisfying diverse users' needs. The origin of web content analysis is extracted from webometrics, bibliometrics, scientometrics, and informetrics, which are interrelated. Devi and Verma, 2016 elaborated that web content analysis is "the study of content analysis of the web documents is known as the web content analysis which is predominant in the area of the web for checking the authenticity and quality of information available over the internet". The evaluation of national libraries' websites should be done from time to time to keep the website's contents updated. This will encourage more visitors to the website resulting in significant exposure to the library and its contents. The better presentation of the website attracts the users by giving an eye-appealing view.

The study results reveal that about 95% of the undertaken national libraries have dedicated library websites while the rest two countries (i.e., Afghanistan and Brunei) have only separate webpage for their national library. It is always better to have your dedicated library website, which gives a better impression and exposure for the library and the country. The national libraries eventually used interpretative graphics, animations, and obviously text on their websites, giving a better representation of website contents to attract the users by the eye-catching view. English is the most preferred language to provide information on the website while Arabic is the second common language for the national library website by Asian countries. Meanwhile, the Lebanese national library offers information in multiple languages (i.e., Arabic, English, French, Portuguese, and Spanish). Another study (Devi and Verma, 2016;

Walia and Gupta, 2013; Haneefa and Venugopal, 2010) also found that English is the most preferred language to exhibit information on the website. To view the content of library website, perfect resolution, and compatibility of web browser is very important. Still, only two Asian national libraries (Malaysia and Vietnam) have provided a suggestion regarding viewing resolution and the compatibility on the website for the best view of the website. A similar trend was reported by Devi (2017) in Indian IITs and NITs libraries website. It is a good sign that most Asian national libraries have provided the statement of responsibility information on their website like postal address, email, phone numbers, etc. Further, it was also found Asian national libraries also give basic information about library including Ask a librarian and FAQ options, which are very important for the users'. The national library websites (93%) have provided information about their respective library as well as about the mission/aim/objectives/statement (63%), library timing (80%) and news/updates/events (90%). Most of the library websites have also provided the links for various services such as OPAC (78%), Union Catalogue (7%), Ask a Librarian (17%) and Feedback or Comment facility (30%) and also FAQs (29%). The copyright information about the library is described in 85% of library website but without any maintenance details.

To know the usability of the national libraries website, it needed to know the numbers of visitors of that particular library website but only 22% of the national libraries have given the number of visitor's options in their library website/webpage. In the digital world, the currency of information is very much essential. The website's pages must be updated constantly from time to time. The updated date should be displayed on the website so that website users are informed about the recency information they have been using, but the present study found that only 17% Asian national libraries have provided the information about the date of the recent update of the website/webpage. Each national library website has popularly used HTML to create and link the contents of websites such as text, images or graphics in JPEG, PNG, and GIF formats. Nowadays, web 2.0 tools (RSS, social networking sites, blogging sites, wikis, etc.) act as a medium to connect many people. Many libraries have successfully implemented these tools to disseminate information to their users through their library websites. Facebook and Twitter (53.65%) are the most preferred web 2.0 tools used by 32 and 22 Asian national libraries, respectively, followed by RSS, YouTube (14 national libraries each), and Instagram (12 national libraries) that is linked with the websites for further recognition and easier information dissemination of the national library.

The website's download speed depends on the size of the website, which means that the smaller the size of the website will take less time to download. The National Library of Kyrgyzstan website has the maximum size in bytes (2941796 bytes), consuming 595.90 seconds for downloading the page. In contrast, the National Library of Armenia website has the least size in bytes (85 bytes), which consumes significantly less time to download the page (0.22 seconds). The National Library of Japan website has conceived the first position with 8,662 ranks while analyzing at a global level using the online tool Alexa Traffic Rank. The National Library of India website has been in the 22nd rank among the undertaken national library websites.

Conclusion

The website's content analysis determines the themes and exposure of much-needed information to a user in a limited interface with the usages of words, graphics, and animations

associated with various links. Content analysis is the process of webometrics that exhibits and evaluates the web content and concepts of the websites/webpage, including their size, speed, and usage of multimedia. This study has revealed the contents, concepts, and usage of different graphics and quick links to provide better information about the specific websites of the national libraries in Asia.

It is always better to have your dedicated website to exhibit a better impression and exposure of the organization. And with the usage of graphics, images, animations in the website, forming a better representation of information about the respective libraries will always attract the end-user and motivate them to use the website/webpage frequently. The study result shows that the selected national libraries did not maintain basic information. Thus, it is better to provide all the basic information about the library on their website by all the Asian national libraries uniformly to their users in the libraries website. The websites should link with web 2.0 tools to connect many users. The Ask a Librarian and feedback service should be given by all libraries more effectively. Users can grab the opportunity to inquire about their requirements and get a scope for suggestions for further improvement of the website for better services in the future.

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Appendix

Webometric Analysis Evaluation Criteria of Library Website/Webpage of National Libraries in Asia

1. Does library have dedicated website for itself?
 - a) Yes ☐
 - b) No ☐

*If no then,
Does the library have a separate webpage?

 - a) Yes ☐
 - b) No ☐
2. Whether the view resolution is suggested in the respective library website/webpage?
 - a) Yes ☐
 - b) No ☐
3. Does the library website/webpage provide information about the browser compatibility respectively?
 - a) Yes ☐
 - b) No ☐
4. Whether the library website/webpage gives information about the number of visitors of the page?
 - a) Yes ☐
 - b) No ☐
5. Does the library website/webpage use any graphics along with the text for communication with the users?
 - a) Yes ☐
 - b) No ☐

*If yes then,
Whether the graphics used in the library website/webpage are animated?

 - a) Yes ☐
 - b) No ☐

*If no then,
Does the library website/webpage use only text and not graphics for communicating with the users?

 - a) Yes ☐
 - b) No ☐
6. Does the library website/webpage offer information only in their national language?
 - a) Yes ☐
 - b) No ☐

*If no then,
Whether the library website/webpage offers information in English and other local languages?

 - a) Yes ☐
 - b) No ☐

*If no then,

Whether the library website/webpage offers information only in English language?

- a) Yes ☐
- b) No ☐

7. Does the library website/webpage provide web translator for changing the language into multilingual option?

- a) Yes ☐
- b) No ☐

If yes then please mention the country.....

8. Does the library website/webpage provide postal address of the library?

- a) Yes ☐
- b) No ☐

9. Does the library website/webpage provide phone number of the library or a library staff?

- a) Yes ☐
- b) No ☐

10. Does the library website/webpage provide fax number of the library?

- a) Yes ☐
- b) No ☐

11. Whether the library website/webpage provides the email address of the library/librarian?

- a) Yes ☐
- b) No ☐

12. Does the library website/webpage provide feedback form or email link?

- a) Yes ☐
- b) No ☐

13. Does the library website/webpage provide search option in the website/webpage?

- a) Yes ☐
- b) No ☐

14. Whether the library website/webpage provides the sitemap of the library?

- a) Yes ☐
- b) No ☐

15. Does the library website/webpage provide FAQs in the website/webpage?

- a) Yes ☐
- b) No ☐

16. Whether the library website/webpage provides copyright details on the site?

- a) Yes ☐
- b) No ☐

*If yes then,

17. Whether the library website/webpage provides any information about the maintenance details of the site?

- a) Yes ☐
- b) No ☐

18. Does the library website/webpage provide date of updation?

- a) Yes ☐
- b) No ☐

*If yes then,

Whether the website/webpage has been updated in the past three months?

- a) Yes ☐

- b) No ☐
19. Does the library website/webpage have given the present date on the site?
a) Yes ☐
b) No ☐
20. Does the library website/web page provide information on introduction/history about the library?
a) Yes ☐
b) No ☐
21. Does the library website/web page provide information regarding the aims/objective/ mission/statement of the library?
a) Yes ☐
b) No ☐
22. Does the library web page/website provide information on opening/closing time of the library?
a) Yes ☐
b) No ☐
23. Does the library web page/website provide information about staffs/members of the library?
a) Yes ☐
b) No ☐
24. Whether the website/webpage has provided the library brochure?
a) Yes ☐
b) No ☐
25. Does the library web page/website provide information regarding library use?
a) Yes ☐
b) No ☐
26. Does the library web page/website provide any information on library news/updates and events in their respective site?
a) Yes ☐
b) No ☐
27. Whether the website/webpage has provided links to OPAC on the site?
a) Yes ☐
b) No ☐
28. Whether the website/webpage has provided links to Union catalogue?
a) Yes ☐
b) No ☐
29. Whether the website/webpage has provided the location map/guide on the site?
a) Yes ☐
b) No ☐
30. Does the library website/web page provide information regarding user membership details?
a) Yes ☐
b) No ☐
31. Does the library website/web page provide information about the infrastructure facilities of the library?
a) Yes ☐
b) No ☐
32. Does the library website/web page provide photo gallery in their respective site?
a) Yes ☐
b) No ☐

33. Does the library website/web page provide any information regarding 'Ask a librarian' respectively?
- a) Yes ☐
 - b) No ☐
34. Does the library website/web page provide link for the web 2.0 tools?
- a) Yes ☐
 - b) No ☐

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