

Awareness, use and attitude of library professionals towards Web 2.0 applications in Central University Libraries in India

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The present study aims to explore the use of Web 2.0 tools and technologies among the library professionals in academic libraries in India. Data was collected through a structured questionnaire mailed to respondents from 46 central university libraries in India. The findings suggest that there exists a fair level of awareness and familiarity with the Web 2.0 tools and technologies among the library professionals. The study provides useful insights to promote the use of Web 2.0 tools among the library professionals in Indian libraries.

Keywords: Web 2.0; Indian libraries; Use; Attitude; Awareness; Library professionals

Introduction

In the library and information scenario, there has been a paradigm shift in the way the information technology is being applied to disseminate information to a new generation of technologically savvy users. As noted by Thomas and McDonald¹, "they approach the traditional library with certain expectations that may conflict with the existing services, policies, and values of the library as information broker". The Web has transformed into Web 2.0 which is more social, dynamic, participatory, user-oriented, and interactive. Web 2.0 related technologies facilitate interactivity and provide easy means of communication, thus making it easier to collaborate and share information. Libraries around the world are making efforts to integrate various Web 2.0 tools and technologies – such as social networking services, blogs, wikis, multimedia sharing services, content syndication, podcasting and content tagging services into their library websites. Moreover, significant "technological advances in Web 2.0 now enable librarians to create personalized new services that were previously impossible or at best hard to implement."² The present paper is an attempt towards analysing the use of Web 2.0 tools and technologies among the library professionals in university libraries in India. The study also investigates the attitude of the

library professionals towards use of Web 2.0 tools and technologies.

Literature review

The term 'Web 2.0' was coined by Tim O'Reilly in 2004. According to him, Web 2.0 represents "a business revolution in the computer industry caused by the move to the internet as platform" and its essence is to "build applications that harness network effects to get better the more people use them"³. It involves changes "within internet technology, as well as in the way we think about and use the web"⁴. Web 2.0 encompasses a wide range of applications and tools such as blogs, wikis, social networking sites, social tagging, instant messaging, RSS, file sharing sites, social bookmarking, and virtual worlds. Web 2.0 tools and technologies allow users to "generate, describe, post, harvest, search, annotate and exchange online content" in various forms ranging from music, bookmarks to photographs and documents⁵. According to Stephens⁶, Web 2.0 affords connections among people leading to the creation and redistribution of content in numerous ways. Liu⁷ mentions that "in the Web 2.0 era, the relationship between users and information is transformed from stand-alone, separate silos to mutually inclusive, mutually reliant, and reciprocal action-and-reaction

entities". Web 2.0 developments have led to a web environment that's more focused on the user, and "not only delivers content to users but also seeks content from them, and above all fosters engagement, participation, and collaboration"⁸.

Academic libraries cannot remain unaffected by the changes, such as rapid advancements in technology, globalization, resource crunch, and changing educational needs, influencing education system and educational institutions in today's digital age. As the web becomes more engaging, interactive and participatory, the libraries are also embracing the change to serve the changing information requirements of the users. The focus is "less on development of secured inventory systems and more on implementation of collaborative discovery systems"⁹. The capabilities of Web 2.0 enable users to engage the library in two - way communication and knowledge exchanges¹⁰. According to Maness⁹, "as communities change, libraries must not only change with them, they must allow users to change the library". University libraries around the world are quickly becoming the major players in adopting and incorporating Web 2.0 applications into the design and delivery of their services¹¹. Researchers have emphasized the use of Web 2.0 tools for improved library services^{4,12,13}. Most of the Web 2.0 technologies enable easy customization according to organizational needs and lead to increased participation by library users¹². According to Chua and Goh¹⁴ when implemented in libraries, Web 2.0 has "the potential to promote participatory networking where librarians and users can communicate, collaborate, and co-create content".

Research studies have investigated the overall application of Web 2.0 in university libraries. In a survey of Australasian university libraries, Linh¹⁵ found that though the Web 2.0 technologies were being used in the libraries, however, the general implementation was relatively low. Han and Liu¹⁶ studied the pattern of use of Web 2.0 technologies and their features in top Chinese university libraries and found the general status of the use of Web 2.0 applications in basic development stage with most of the libraries using one or two applications. Han and Liu¹⁶ stressed on the need for libraries to focus on methods of engaging users and emphasizing content while integrating its various Web 2.0 components. Harinarayana and Raju¹⁷ in a study of

the top 100 universities of the World found RSS and Instant Messaging (IM) as most applied features. Tripathi and Kumar¹⁸ examined the websites of university libraries located in Australia, Canada, UK and US for Web 2.0 tools adopted for enhancing library services. They found RSS, IM, and blogs most popular Web 2.0 tools in these academic libraries. In a survey of the websites of academic libraries in New York State by Xu, Ouyang and Chu¹¹, IM was found to be the most adopted tools followed by blogs and RSS. Research has indicated that Web 2.0 applications are used in academic libraries for sharing news and information, marketing and promotion of library services, imparting information literacy, providing reference services, and soliciting feedback from users.^{10,11,15,18-21}

With the changing educational and library scenario, the role of the librarian changes to that of facilitator to allow users to participate in the creation of content, which is also meant for them. The use of technology has come to be interwoven into a librarian's work. The academic libraries are knowledge centres catering to the information needs of a heterogeneous group of users, especially students who are digital natives with changing information needs and information searching behaviour. The librarian has to support users in both the highly networked digital and print-based environment, therefore it becomes essential to develop technology skills and engage in the exploration and implementation of new technologies. There are few studies on the awareness and perception of library and library professionals towards the use of Web 2.0 tools. Mahmood and Richardson²² in a study of academic libraries stressed on the need to study librarians' perceptions (whether positive or negative) of Web 2.0 technologies for academic libraries. They found that though libraries were using some form of Web 2.0 technology, librarians were not aware of the usefulness of most of the less used technologies in their work. Baro, Idiodi and Godfrey²³ in a study involving university libraries in Nigeria found that a majority (70.5%) of the librarians lacked skills to effectively use Web 2.0 tools. A study by Baro, Edewor and Sunday²⁴ revealed that librarians in Africa are mostly familiar with Web 2.0 tools such as social networking sites (Facebook, Twitter, etc.), blogs, instant messaging and wikis. Chawner²⁵ conducted a study on the usage and attitudes towards Web 2.0 of library professionals in New Zealand. The study revealed that librarians and information

managers of all ages are experimenting with these technologies to some extent. Esse²⁶ examined the perception, knowledge, and attitude of library professionals at the Covenant University Library towards Web 2.0 tools and found a high level of awareness. A study by Aharony²⁷ revealed that personality characteristics as well as computer expertise, motivation, importance, and capacity to integrate different applications of Web 2.0, influence librarians' use of Web 2.0.

Relatively few research studies have focused on the use of Web 2.0 applications in Indian libraries. Nevertheless, out of the few studies conducted, Majumdar²⁸ discusses how the IIT (Indian Institute of Technology) and IIM (Indian Institute of Management) libraries provide access to their collection and user support using Web 2.0 technologies. Thanuskodi²⁹ observed the awareness and use of Web 2.0 tools among library professionals of Annamalai University, India. It is extremely essential to understand the awareness and use of Web 2.0 tools by the library and library professionals in India. In the light of above review, it can be seen that there is a dearth of research based literature on the application of Web 2.0 technologies in the Indian academic libraries scenario. Therefore, to fill the gap in the literature the present study attempts to examine the extent of application of Web 2.0 tools and technologies in Indian academic libraries.

Objectives of the study

- To investigate the awareness and level of understanding of Web 2.0 tools among library professionals in central university libraries of India;
- To find out the status of the use of Web 2.0 tools among library professionals in central university libraries of India; and
- To identify the perception and attitude of the library professionals in central university libraries of India towards the use of Web 2.0 tools.

Methodology

Survey method was used to study the use of Web 2.0 tools and technologies among the library professionals in central university libraries in India. A structured questionnaire was used for the study. Data was collected from a purposive sample of 150 library

professionals (including librarians, assistant librarians, technical and professional assistants) drawn from a population of 46 central university libraries in India (Annexure A). The survey questionnaire had items on demographics, awareness, understanding, familiarity, use, perception, and attitude towards the use of Web 2.0 tools by library professionals in university libraries in India. The questionnaire consisted of dichotomous, multiple choice, ranking, and opinion questions. A draft of the questionnaire was sent to experts for content validity and their suggestions for improvement. Some modifications were made on the basis of their suggestions.

The questionnaire was administered online to the selected 150 library professionals. A hyperlink to the questionnaire along with the introductory information was sent to the library professionals through the personalized e-mail. A few reminders were also sent through email. The data were collected during the period from May 2015 to August 2015. Responses were received from 76 library professionals. The responses thus collected were coded and analysed. The findings of the study are discussed in the following sections.

Findings

Participant demographics

Of the 150 questionnaires administered, 76 filled-in questionnaires were returned with a response rate of 50.67% (females = 35.53%, n=27; males = 64.47%, n=49). Representation from all levels in libraries was obtained, including librarians (10.53%, n=8); deputy librarians (25%, n=19); assistant librarians=32.89%, n=25; and technical or professional assistants (31.58%, n=24). Moreover, the respondents had varied work experience with 36.85% (n =28) of the respondents having work experience of less than 10 years, 42.1% (n=32) having experience of 11 to 20 years and 21.05% (n=16) having experience of more than 21 years.

Awareness and understanding of Web 2.0 tools and technologies

Awareness of Web 2.0 tools and familiarity with the use is a prerequisite to their effective application in libraries and information centres for providing information services to the patrons or users. An attempt was made to gauge the level of awareness and understanding about Web 2.0 among the library professionals.

The respondents were first asked if they were aware of the Web 2.0 tools and technologies (Table 1). All the respondents (n=76) indicated that they are aware of the available Web 2.0 tools and technologies. The majority (56.58%, n=43) of respondents indicated that they knew it very well.

To gauge their understanding about Web 2.0 tools, the respondents were then asked what according to them were examples of Web 2.0 tools and technologies. As shown in Table 2, Web 2.0 tools include blogs and wikis (78.95%, n=60); Delicious, Twitter and RSS (77.63%, n=59); and social networking sites (71.05%, n=54). However, a small percentage (34.21%, n=26) of respondents thought that an online bookstore with facility to post comments was a Web 2.0 application. Moreover, a few respondents (18.42%, n=14) thought that any resource available on the web is a Web 2.0 tool, which is not true. Though the respondents have a fair level of understanding about the Web 2.0 tools and technologies, this minor variation highlights a lack of proper knowledge among a small number of respondents.

According to the respondents (Table 3), Web 2.0 is characterized by sharing and openness (75.00%, n=57), social and participatory nature (71.05%, n=54) and user generated content (59.21%, n=45). However, few respondents indicated static web page (11.84%, n=9) as a characteristic of Web 2.0. This further reveals that there exists a fair level of understanding among the library professionals about the Web 2.0 tools and technologies, though without much in-depth knowledge about its features.

Use of Web 2.0 tools and technologies

An attempt was also made to investigate the tools most used by the library professionals. As shown in Figure 1, it was found that Facebook was the most used Web 2.0 application (80.26%, n=61) followed by Wikipedia (67.11%, n=51), Blogs (59.21%, n=45) and YouTube (55.26%, n=42). On the other hand, tools such as Delicious (13.16%, n=10), Flickr (7.89%, n=6) and Mashups (6.58%, n=5) remain the least used Web 2.0 tools.

It was revealed (as shown in Table 4) that social networking is used by 64.47% (n=49) of the respondents daily followed by wikis (34.21%, n=26) and instant messaging (34.21%, n=26).

Table 1—Awareness of Web 2.0 tools

	No. of respondents	Percentage
I am aware	23	30.26
I am somewhat aware	10	13.16
I am very well aware	43	56.58

Table 2—Understanding of what Web 2.0 tools include

Items	No. of respondents	Percentage
Blogs and Wikis	60	78.95%
YouTube and iTunes	48	63.16%
Delicious, Twitter and RSS	59	77.63%
An online encyclopedia	15	19.74%
An online bookstore	26	34.21%
A social networking site	54	71.05%
Any resource on the web	14	18.42%

Table 3—Knowledge of Web 2.0 characteristics

Items	No. of respondents	Percentage
User generated content	45	59.21%
Sharing and openness	57	75.00%
Ease of use	38	50.00%
Static Web pages	9	11.84%
Social and participatory	54	71.05%
Hyperlinking and publishing	16	21.05%

Table 4—Frequency of use

Items	No. of respondents	Percentage
Blogs	12	15.79%
Instant messaging	26	34.21%
Photo sharing	3	3.95%
Video sharing	12	15.79%
Social networking	49	64.47%
Social bookmarking	10	13.16%
Wikis	26	34.21%

As far as the level of participation is concerned, 52.63% respondents indicated the use of Wikipedia for viewing content, followed by video sharing sites such as YouTube (46.05%), and blogs (40.79%), as shown in Table 5. Amongst the library professionals investigated, the overall level of participation was found to be highest for social networking sites with the majority of the respondents (92.11%) engaging in uploading content, viewing content and posting comments. This was followed by blogs (86.84%) and Wikis (84.21%).

Table 5—Level of participation in using Web 2.0 tools

Items	Never	View Content	Download Content	Upload Content	Post Comments
Blogs	13.16%	40.79%	18.42%	13.16%	14.47%
Photo sharing	31.58%	22.37%	17.11%	26.32%	2.63%
Video sharing	19.74%	46.05%	19.74%	11.84%	2.63%
Social Networking	7.89%	26.32%	5.26%	43.42%	17.11%
Social Bookmarking	36.84%	25.00%	25.00%	10.53%	2.63%
Wikis	15.79%	52.63%	22.37%	6.58%	2.63%

Table 6—Attitude towards use of Web 2.0 tools

Rank	Items	Mean	SD
1	Web 2.0 tools provide new opportunities for collaboration and information sharing between libraries and users.	4.43	0.499
2	Web 2.0 tools can be beneficial in library systems of today.	4.37	0.562
3	Web 2.0 tools enable librarians to share information/news/announcements with their users at any time.	4.36	0.559
4	Web 2.0 tools can be used for the enhancement of library services and resources through user feedback.	4.36	0.482
5	Web 2.0 tools will facilitate better interaction with the users.	4.34	0.555
6	Web 2.0 tools can be used to effectively market library services and resources.	4.33	0.575
7	Libraries should adopt Web 2.0 tools to connect with the users.	4.29	0.537
8	Web 2.0 tools help to provide better services to the library users.	4.28	0.506
9	Web 2.0 tools will help to enhance the image of the library among the users.	4.24	0.746
10	Web 2.0 tools will help the libraries in enhancing their level of outreach.	4.21	0.639

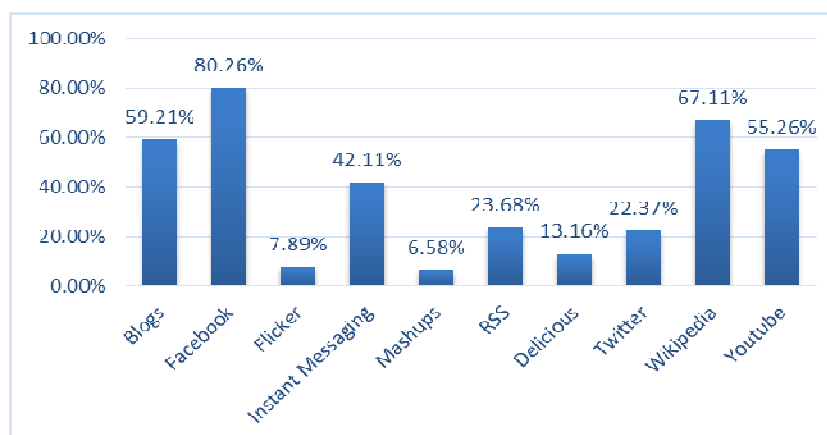


Fig. 1—Web 2.0 tools used most by the library professionals

Perception about the usefulness of Web 2.0 tools

The respondents were asked if they thought the Web 2.0 tools can be useful in libraries. Out of the total 76 respondents, all replied in affirmative.

An attempt was also made to investigate into the library professional's perception of which Web 2.0 can be most useful in libraries. It was revealed that the majority of respondents (81.58%, n=62) consider blogs to be most useful followed by RSS (68.42%, n=52). This is followed by Wikipedia (61.84%, n=47). Moreover, it was found that tools such as

Flickr (7.89%, n=6) and Mashups (7.89%, n=6) are considered least useful in libraries (Figure 2).

Attitude towards use of Web 2.0 Tools

An attempt was made to analyse the attitude of the library and library professionals towards the use of Web 2.0 tools in libraries. The respondents were presented with a list of 10 statements and were asked to identify and rate the statements on a five-point Likert-type scale of '1' (strongly disagree) to '5' (strongly agree).

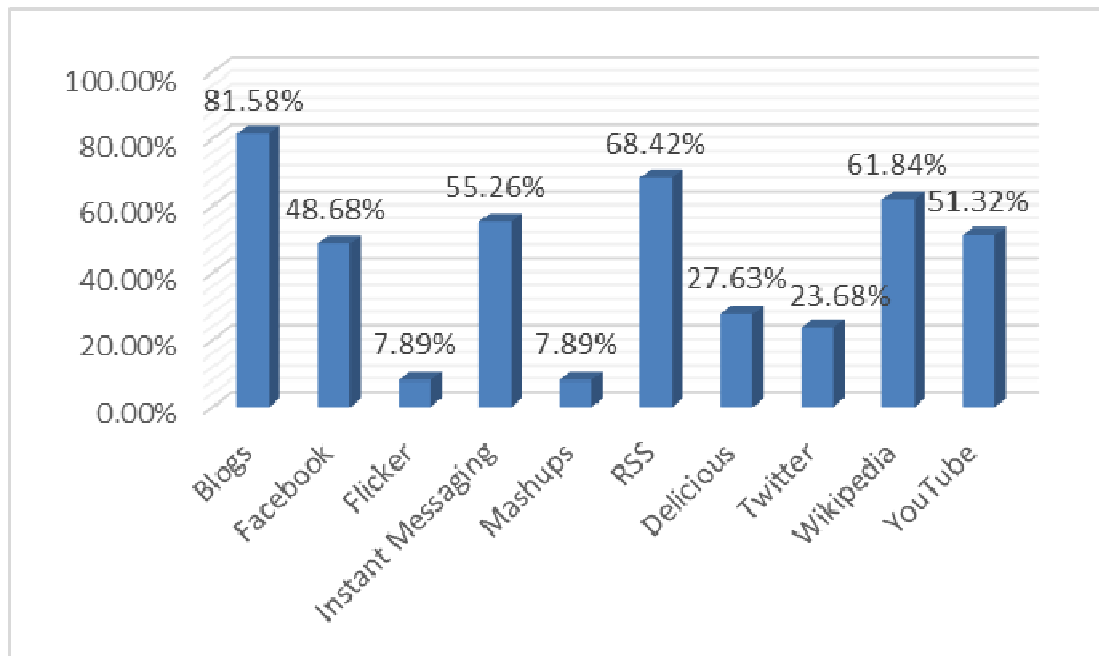


Fig. 2—Web 2.0 tools considered most useful for Libraries

The mean attitude score for the sample (n=76) was calculated as 4.32 indicating that the majority of the library professionals had a strong positive attitude towards the items tested. The statements are listed in descending order from highest to lowest score in Table 6. The standard deviations range from 0.506 to 0.746. The attitude measure demonstrated good internal consistency with the Cronbach alpha coefficient of 0.86. The results show that all the mean values fall above the midpoint of 3.00. This indicates that most of the respondents tend towards 'agree' to 'strongly agree'.

Conclusion

The results of the present study show that the respondents are aware of Web 2.0 tools and technologies. The study further revealed that there exists a fair level of understanding among the library professionals, however, they lack proper in-depth knowledge about the Web 2.0 tools and technologies. The results of the study indicate that Facebook, Wikipedia, Blogs, and YouTube are the tools most used by the respondents. Moreover, social networking followed by Wikipedia and Instant Messaging are used by the respondents everyday. The level of participation was found to be highest for Facebook, Blogs, and Wikipedia. All the respondents believed that the Web 2.0 tools can be useful in libraries.

Blogs, RSS and Wikipedia were perceived to be most useful in library scenario by the surveyed library professionals.

Miranda *et al*² highlight certain pros of Web 2.0 including collaboration, customization, communication, knowledge generation, sharing, updating, flexible tools, speed, reduction of costs, training, and facilitates experimentation. Similarly, Bejune and Ronan³⁰ and Cao³¹, also refer to enhanced visibility, increased communication, marketing, and better collaboration as some of the benefits of using social software. This is supported by the study as the positive features stating that Web 2.0 promotes better collaboration and information sharing; sharing of information/news/announcements at any time; enhancement of library services and resources; and better interaction with the users, are rated highest by the respondents on the attitude score. In addition to this Harnesk³² also mentions that the use of Web 2.0 helps in improving library image and reaching new potential users. The respondents in the present study have shown a positive inclination towards these aspects of Web 2.0 in the attitude score with a Mean attitude score of 4.24 and 4.21 respectively (Table 6). The mean attitude score for the sample (n=76) was calculated as 4.32 indicating that the majority of the library professionals had a strong positive attitude towards the items tested.

The attitude score reflected that the respondents were positively inclined towards the use of Web 2.0 applications in libraries. The results can also be reflected upon in view of the findings of Mahmood and Richardson²² that librarians who had experienced more forms of Web 2.0 technologies showed a stronger opinion in favour of their advantages and benefits for libraries. The study marks a fair level of awareness of and familiarity with the Web 2.0 tools and technologies among the library professionals. The perception and attitude of the professionals were found to be positive.

The present study highlights a strong need for more concentrated efforts in making use of these technologies which are freely and easily available. In the words of Chua and Goh¹⁴, “Web 2.0 applications can be used as a deliberate means to create cognitive and social connections between users and librarians, thereby generating greater levels of patronage and possibly boosting library membership”. Moreover, university libraries can best harness Web 2.0 applications to facilitate communication and information dissemination between librarians and their users.

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Annexure I

List of central universities in India			
University	Year of Establishment	Name of Library	Web Address
1. Aligarh Muslim University	1920	Maulana Azad Library	http://www.amu.ac.in/ulibrary.htm
2. Assam University	1994	Rabindra Library	http://www.aus.ac.in/library.html
3. Babasaheb Bhimrao Ambedkar University	1996	Gautam Buddha Central Library	http://www.bbau.ac.in/Central%20Library/Library.aspx
4. Banaras Hindu University	1916	Sayaji Rao Gaekwad Library	http://www.bhu.ac.in/bhulibrary/index.html
5. Central Agricultural University	1993	Central Library	Library Website not available
6. Central University of Gujarat	2009	Central Library	http://library.cug.ac.in/
7. Central University of Haryana	2009	Central Library	http://www.cuh.ac.in/
8. Central University of Himachal Pradesh	2009	Central Library	Library Website not available
9. Central University of Jammu	2011	Central Library	http://www.jammuuniversity.in/library_main.asp
10. Central University of Jharkhand	2009	Central Library	http://cuja.ac.in/library.php
11. Central University of Karnataka	2009	Central Library	http://cuklibrary.ac.in/
12. Central University of Kashmir	2009	Library	http://cukashmir.ac.in/Facilities-Student/Library.aspx
13. Central University of Kerala	2009	University Library	http://cukerala.ac.in/index.php?option=com_content&view=article&id=125&Itemid=273&lang=en
14. Central University of Orissa	2009	Central Library	http://cuo.ac.in/Facilities_Library.asp?pgid=7
15. Central University of Punjab	2009	Library	http://www.centralunipunjab.com/library.asp
16. Central University of Rajasthan	2009	Central Library	http://www.curaj.ac.in/Default.aspx?PageId=90
17. Central University of South Bihar	2009	Central Library	http://www.cusb.ac.in/index.php/2016-07-01-04-53-58/2016-03-09-15-31-33/central-library
18. Central University of Tamil Nadu	2009	Central Library	http://cutm.ac.in/library/
19. Dr. Harisingh Gour University	1946 (2009)	Jawahar Lal Nehru Library	Library Website not available
20. English and Foreign Languages University	1958 (2007)	Ramesh Mohan Library	http://www.efluniversity.ac.in/Ramesh-Mohan-Library.html
21. Guru Ghasidas University	1983 (2009)	Central Library	http://www.ggu.ac.in/facility_central%20library.html
22. Hemwati Nandan Bahuguna Garhwal University	1973 (2009)	Central Library	http://www.hnbgua.ac.in/forms/contentpage.aspx?lid=226
23. Indian Maritime University	2008)	University Library	http://www.imuv.edu.in/library.html

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University	Year of Establishment	Name of Library	Web Address
24. Indira Gandhi National Open University	1985	Dr. G. Ram Reddy Library	http://www.ignou.ac.in/ignou/aboutignou/division/ldd/introduction
25. Indira Gandhi National Tribal University	2007	Central Library	http://igntu.nic.in/clib.htm
26. Jamia Millia Islamia	1920 (1988)	Dr. Zakir Hussain Library	http://jmi.ac.in/studyatjamia/library/zhl/introduction
27. Jawaharlal Nehru University	1969	Central Library/ University Library	http://www.jnu.ac.in/Library/default.htm
28. Mahatma Gandhi Antarrashtriya Hindi Vishwavidyalaya	1997	Mahapandit Rahul Sanskritayan Central Library	Library Website not available
29. Mahatma Gandhi Central University	2016	University Library	http://library.mgu.ac.in/
30. Manipur University	1980 (2005)	University Library	http://www.manipuruniv.ac.in/en/Library/Library.html
31. Maulana Azad National Urdu University	1998	Central Library	http://www.manuu.ac.in/Library.html
32. Mizoram University	2000	Central Library	http://www.mzu.edu.in/central%20library.html
33. Nagaland University	1994	Central Library	http://www.nagauniv.org.in/index.php/eresources-journals
34. Nalanda University	2010	Library	http://www.nalandauniv.edu.in/library/
35. North Eastern Hill University	1973	Central Library	http://www.nehu.ac.in/library/index.html
36. Pondicherry University	1985	Ananda Rangapillai Library	http://210.212.230.223
37. Rajiv Gandhi National Aviation University	2013	Library	Library Website not available
38. Rajiv Gandhi University	1985 (2007)	Teesta-Indus Library	http://www.rgu.ac.in/facilities/library.html
39. Sikkim University	2007	Central Library	http://www.cus.ac.in/central-library
40. South Asian University	2010	Prof. G. K. Chadha Library	http://library.sau.ac.in/
41. Tezpur University	1994	Central Library	http://www.tezu.ernet.in/Library
42. Tripura University	1987	Central Library	http://www.tripurauniv.in/index.php/library/generalinformaton.html
43. University of Allahabad	1887	Central Library/University Library	http://www.alluniv.ac.in/index.php?option=com_content&view=article&id=157&Itemid=476
44. University of Delhi	1922	Delhi University Library System	http://crf.du.ac.in/
45. University of Hyderabad	1974	Indira Gandhi Memorial Library	http://igmlnet.uohyd.ac.in:8000/
46. Visva-Bharati University	1921	Central Library	http://www.visva-bharati.ac.in/Library/Library.htm