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Researchers' perception and attitude towards Open Access (OA) resources: an alternative model and important for academic and research libraries

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Abstract

Open Access (OA) resources has become an alternative resource as the pandemic outbreak has forced all the educational institutions remain closed. It has become a great source for the research scholars as the libraries have stopped traditional functioning of the libraries and focussing more on online-based services. This study has been conducted based on the data collected from the research scholars of Bharathidasan University, India, one of the prestigious universities has got highest rank. The study results showed that research scholars were aware of OA resources such as e-journals, e-books, e-theses and dissertations, Open Access Coursewares, whereas they were not aware much about other sources such as e-contents, reports, directories, IRs, e-proceedings etc. They accessed the resources from library and low access found from other places. They aware of the resources through library professionals, supervisors and user awareness programme and research was the major purpose of using the resources. Easy to use and global resources at one place were the reasons for using the resources. Limited access to computers, delay in downloading and lack of search skills were the issues faced by them. The study suggested to organise user awareness programme periodically and allocate more funds for procuring computers and high internet bandwidth connection.

Keywords: Open Access; OA; User Perception; User attitudes; Bharathidasan University; e-Resources;

Introduction

Three decades back, publications were print-based which is being subscribed by any organisation. The emergence of Open Access (OA) resources due to development of World Wide Web and other advanced new technologies have created huge amount of information in which majority are peer-reviewed (Tina, 2015). These technologies have changed the manner in accessing and disseminating scientific knowledge (Zhu, 2017). In these days, most of the publishers, educational institutions, government institutions, public sector organisations,

Non-Government Organisations (NGO's) etc have developed OA resources which can be accessed freely for any lawful purposes, modified and redistributed. The major purposes of OA resources are to maximize the availability to the academic and research institutions for scientific development. It has become substitute for traditional resources which has limitations such as delay in processing the subscription, postal delay or missing, delayed publication, and so on. It is also common that most of the libraries have either stopped subscription of some journals due to cut in library budget. But, libraries have to fulfil the information needs of the user community (Abubeker & Ali, 2013). The revolution in publishing has given opportunity to developing countries to have access to the latest scientific literature. The 'traditional publishers' introduced journals in an online format, offered chance to access the information free-of-charge or at low cost. In 1997, the U.S. National Library of Medicine (NLM) brought a comprehensive literature to medicine i.e. MEDLINE freely available in the form of PubMed. Since the access to abstract level of information was not sufficient, an online open repository of full text articles was realised as PubMedCentral. Open Access concept gained momentum when the funding agencies of many countries insisted as mandate to be available through open access mode after the embargo period (Hommel, 2010). Increased availability of OA resources achieved by scientists who uploaded prepublication version of their articles into OA repositories such as PubMed Central (Solomon & Bjork, 2012). This helped the authors to 'self-archive' in a repository

Open Access has been widely accepted and emerged after proposed the principles of OA publishing. The Budapest Open Access Initiative (BOAI, 2002), the Bethesda Statement (Bethesda declaration, 2003) and Berlin declaration (Berlin declaration, 2003), proposed free to read, modify and redistribute with proper citation to the original document.

In India, most of the organisations such as central, state, public sectors have digitised print materials and made it available through institutional repositories. Million book universal digital library project initiated by Carnegie Mellon University have scanned the books at different places and made it available through open access mode. Digital Library of Education and Research Network (ERNET), a collaborative effort between Indian and US institution has arts and humanities literature which are searchable or free to read. Centre for Development of Advanced Computing (C-DAC) is working on various projects. Varanasi Digital Library Project for rare manuscripts and old magazines published during 19th Century to 1960 available with NPS. Majority of the centrally funded universities, institutions with national importance such as Indian Institute of Science (IISc), Indian Institute of Technologies (IITs), Indian Institute of Managements (IIMs), National Institute of Technologies (NITs) etc have developed IR to access full text theses, projects and other copyright free materials (Muqueen, 2006). Shodhganga – a reservoir of Indian Theses provides access to Ph.D full text theses to the entire scholarly community in open access (Shodhganga, 2010-2020). Apart from theses, some of the academies such as Indian Academy of Sciences, National Institute of Science Communication and Information Resources (NISCAIR) have made available their high impact factor journals through open access mode. Though India has contributed much in creating open access materials, utilisation of the resources seems very less. In this connection, the authors have decided to understand the use of OA in Bharathidasan University, Trichirappalli, Tamil Nadu, India.

Open Access: Definition

In a simple term Peter Suber (2012) defines OA “Open Access literature is digital, online, free of charge, and free of most copyright and licensing restrictions”. Open Access described by Harnad (2003) as “Information, which is free, immediate, permanent, full-text, on-line and accessible”. There are two routes through which open sources are published:

Bharathidasan University

Bharathidasan University was established in February 1982, is a state university recognized by the University Grants Commission (UGC). It has 138 affiliated colleges and 10 constituent colleges’ offers Diploma, Undergraduate, Postgraduate and Doctoral courses. The University offers courses in the streams of Arts and Science, Engineering, Humanities and Social Science, IT and Software, Business and Management studies and Physical Education.

Central Library

Library is the core of any university to gain knowledge and convert the knowledge to productive action. The Bharathidasan University Library has various sections such as Stack, Reference, Circulation, Periodicals, Technical Section, Digital Library, Audio Visual Centre and Reprography.

The Library has access to more than 10000 e-Resources under e-Shodhsindhu consortium and member of Shodhganga ETD. The Library also provides Open Access System by compiling most relevant and useful scholarly journal databases for the users. Apart from the Central Library, the departments have their own library.

Review of Literature

Studies related to OA resources both national and international level have been gathered. Based on the review of gathered literature, the authors have found that no such study conducted. Open Access is crucial as the world is facing emergency due to Corona pandemic and most of the academic institutions are closed as the cases are alarming. Open Access has been widely accepted and emerged after Budapest Open Access Initiative, the Bethesda Statement and Berlin declaration. Bala, Bansal and Sharma (2018) conducted a study on Punjab Agricultural University research scholars awareness on Open Access Resources revealed that 49.40 percent of the respondents used the resources for research work and 33 percent used for their coursework. The researchers agreed that ease of access and free of cost were the major reasons for accessing it and irrelevant information and slow downloading were the major impediments faced by the research scholars. Janet, Ronke and Onalapo (2017) conducted a study to know the awareness and usage of Open Access among University Lecturers in Nigeria found that 33.3 percent of the respondents had high awareness and 37 percent had moderate awareness. Majority preferred OA for research followed by (40.7%) used to update their knowledge. Wider availability and accessibility followed by prevents duplication of research work were the major reasons for using OA. They faced problems such as poor peer-review, lack of ICT facilities and poor internet connection. Musa (2016) in his study, indicated that the respondents were aware of open access concept but lack in open access initiative such as, Public Library of Science (PLoS), Biomed Central and Berlin Declaration. The respondents indicated that poor ICT facilities, unusual power supply, slow internet connection and inadequate funding were the barriers for

using OA. Bhatti (2014) conducted a study on internet based information usage pattern of Paediatricians' in Southern Punjab, Pakistan revealed that the medical information have been accessed by the respondents using home computers and with the help of medical librarians. Google and Yahoo were the major search engines used for accessing e-medicine. Inadequate computer terminals, formulation of search query, low internet speed, inadequate knowledge of using databases were the major barriers faced by the respondents. . A study on awareness and use of open access journals by LIS Students at University of Ibadan, Nigeria conducted by Ivwighreghweta & Onoriode (2012) revealed that majority of the respondents were not aware of the Library Philosophy and Practice open access journal. The study also revealed that use of open access journals is far from expected. Prasad and Chandrashekara (2015) conducted a study on awareness towards open access sources among students, researchers and faculty in management colleges in Karnataka found that the research scholars have higher awareness followed by faculty and least by the students. Regarding the awareness of Directory of Open Access Journals, 29.58 percent of the respondents had high awareness and 33.26 percent respondents had moderate awareness. Regarding Open Access Courseware, 21.56 percent indicated high awareness whereas 52.44 respondents indicated moderate awareness. A study conducted by Seethapathy, Santhosh Kumar & Hareesha (2016) revealed that all the respondents were aware of OA journals and published in them by paying Article Processing Charges (APC) and 90% have paid APC from their own pocket. A study conducted by Chakyarkandiyil (2020) to find out research scholars attitude towards OA resources revealed that the research scholars have positive approach towards OA resources and stated that OA resources were very much useful for their research. A study conducted by Nagaraj and Bhandi (2016) studied use and awareness of Open Access Resources among researchers revealed that the users aware of OA resources but have low awareness on the terminology of green and gold open access routes and majority satisfied with available OA resources.

As the OA resources are growing every day, librarians need to identify the best resources to the research community. In India, very few attempts have been made to know the researchers perception and use of OA resources. The authors identified the gap and to fill the gap, this study has been undertaken.

Objectives of the Study

- To find out awareness on various open access resources among the research scholars
- To find out the sources through which the users aware of Open Access Resources
- To find out the usage of open access resources among the research scholars
- To find out the reasons for using open access resources
- To find out the problems faced by the research scholars.

Methods

The study comes under descriptive one. To collect the data from the respondents, a self designed questionnaire was developed with the help of available literature and discussion with the subject experts. The structured questionnaires were distributed to the research scholars of Bharathidasan University, Tamil Nadu, India. The author has directly distributed the questionnaires to the respondents who were available at the time of data collection. There were 200 questionnaires collected from the respondents subjected to analysis. The analysed results are displayed under the respective table.

Limitations of the Study

The study strives with the following limitations:

- The study is delimited to only one university.
- Since the total population was large, it is being decided to collect the data from the research scholars who were available at the time of survey.
- Postgraduate students were not covered for this study as their use of Open Access resources is limited.
- The authors found little difficulty while collecting the data as the research scholars as they were busy with their research activities and some of them were out of station related to their research work.
- The information provided by the respondents is believed to be true and, on the basis, analysis is made.

Results

Basic variables

Gender, age and faculty were the independent variables used to find out their access level based on the gender, age group and faculty.

Table 1: Demographic details of the research scholars

	Number of Respondents	Percentage
Gender		
Male	109	54.5
Female	91	45.5
Age		
23-28	108	54.0
28-32	86	43.0
33-37	6	3.0
Faculty		
Arts	34	17.0
Science	101	50.5
Social Sciences	48	24.0
Humanities	17	8.5

Table 1 reveals that majority of the research scholars 109 (54.5%) were male and rest of them were female respondents. There is slight variation found between male and female respondents' numbers. Regarding age group, majority of the respondents 108 (54.0%) were in the age group of 23-27 followed by 86 (43.0%) were the second highest respondents belongs to 28-32 age group and only 6 (3.0%) respondents were in the age group of 33-37. Majority of the respondents 101 (50.5%) were from Science faculty. Social Science respondents constituted 48 (24.0%), followed by Arts with (17.0%). Humanities research scholars (8.5%) were the least among the different faculty.

Sources through which aware of Open Access Resources

The users learn to access OA resources through various sources. Some of the sources through which they were aware of OA resources are listed in the table 2.

Table 2: Sources through which aware of Open Access Resources

Sources	Number of Respondents	Percentage
Through Library Professionals	124	62.0
Through Research Supervisor	135	67.5
Trial and Error Method	85	42.5
Through Computer Professionals	33	16.5
Through Friends/Colleagues	57	28.5
Through Course Materials	25	12.5
Attending Conferences/ Seminars/ Workshops/ Training Programmes	135	67.5
User Awareness Programme	121	60.5

Majority of the respondents 135 (67.5%) each aware through research supervisor and through attending conferences, seminar, workshops. Again, majority i.e. 124 (62.0%), 121 (60.5%), 85 (42.5%) were aware of OA resources through library professionals, user awareness programmes, trial and error method. It is also learnt that sources such as friends/colleagues, computer professionals and course materials were not preferred much by the research scholars.

Awareness level on Open Access Resources

Open access resources are available in various forms. They include Open Access Journals, Books, E-Databases, Thesis and Dissertations, e-magazines, e-content pages, e-reports, e-proceedings, patents; subject gateways search engines, institutional repositories and e-directories. Awareness level on various OA resources are given in the table 3.

Table 5: Awareness level on Open Access Resources

OA Resources	Level	Number of Respondents	%
Open Access Journals	Large Extent	145	72.5
	Some Extent	54	27.0
	Less Extent	1	0.5
Open Access Books	Large Extent	119	59.5
	Some Extent	72	36
	Less Extent	9	4.5
E-Database	Large Extent	52	26.0
	Some Extent	128	64.0
	Less Extent	20	10.0
E- Thesis and Dissertations	Large Extent	150	75.0
	Some Extent	10	5.0

	Less Extent	40	20.0
E- Magazines/Newspapers	Large Extent	125	62.5
	Some Extent	65	32.5
	Less Extent	10	5.0
E-Content Pages	Large Extent	19	9.5
	Some Extent	70	35
	Less Extent	111	55.5
E- Reports	Large Extent	20	10
	Some Extent	67	33.5
	Less Extent	113	56.5
E-Proceedings	Large Extent	14	7.0
	Some Extent	144	72.0
	Less Extent	52	26.0
Open Access Courseware	Large Extent	80	40.0
	Some Extent	70	35.0
	Less Extent	50	25
Subject Gateways	Large Extent	9	4.5
	Some Extent	58	29.0
	Less Extent	133	66.5
Institutional Repository	Large Extent	89	44.5
	Some Extent	92	46.0
	Less Extent	19	9.5
E-Directories	Large Extent	37	18.5
	Some Extent	23	11.5
	Less Extent	140	70.5

Majority of the research scholars 145 (75.0%) were aware large extent of E-Theses and Dissertations followed by Open Access Journals (72.5%), E-Magazines (62.5%) and Open Access books (59.5%). Whereas, majority of the respondents (64.0%) some extent aware of e-Database followed by e-Proceedings (72.0%) and institutional repository (46.0%). It is also found that majority of the respondents were aware less extent of e-Content pages, e-Reports, subject gateways and e-Directories.

Access place of Open Access Resources

At present, electronic resources can be accessed from any part of the world simultaneously at any time by breaking the geographical barriers. The research scholars may access the resources wherever they feel comfortable. In order to know the place where they are accessing, the authors have collected the data from the respondents and the results of the same are displayed in table 4.

Table 4: Access place of Open Access Resources

Access Place	No of respondents	Percentage
From Central Library	118	59.0
From Department Library	55	27.5
Browsing Centres	43	21.5
Computer Centre	64	32.0
Home	32	16.0

It is evident from the table that majority of research scholar i.e. 118 (59.0%) accessed OA resources from central library. Second highest 64 (32.0%) accessed from computer centre followed by 27.5% have accessed from department library. Browsing centre and home were the least preferred centres by the research scholars.

Reasons for using Open Access Resources

OA resources were increasing at global level. When the information flows at free of cost the usage becomes more. There are many reasons for using open access resources than paid resources. To identify the reasons for using the open access resources, the respondents were asked to list the reasons behind using the open access resources. The given table represents various reasons for using the OA resources.

Table 5: Reasons for using Open Access Resources

Reasons	No. Of Respondents	Percentage
Easy to use	117	58.5
Less Expensive	60	30.0
More Informative	104	52.0
Global Research at one place	123	61.5
Time Saving	73	36.5
Easy to update	71	35.5
Effective Presentation	70	35.0

Majority of the research scholars 123 (61.5%) sated as global reach at one place was the major reason for using OA resources followed by 117 (58.5%) used because of easy to use and 104 (52.0%) have mentioned more informative. Time saving was the reason for using open access resources mentioned by 73 (36.5%) research scholars. Easy to update and effective presentation were preferred more or less by same number of respondents. Less expensive was the reason given by 60 (30.0) research scholars.

Purpose of using Open Access Resources

Open Access Resources are used for various purposes such as teaching, learning, research, extension, writing articles, project, and professional development. Table 8 gives details about purpose of using OA resources.

Table 6: Purpose of using Open Access Resources

Purpose	No. Of Respondents	Percentage
Teaching and Learning	75	37.5
Research	146	73.0
Project and Assignment	33	16.5
Professional development	26	13.0

Majority of the respondents 146 (73.0%) used OA resources for research purpose and next highest have used for teaching and learning with 37.5 %. Other purposes such as project and assignment and professional development were least used.

Problems faced while accessing Open Access Resources

There are many issues which hinders accessing OA resources. Solving the issues will enable the users to access the resources effectively and efficiently. Possible impediments normally faced by the research scholars were listed in the table 7.

Table 7: Problems faced while accessing Open Access Resources

Barriers	Number of Respondents	Percentage
Retrieval of too much of irrelevant information	37	18.5
Unavailability of Internet connection	69	34.5
Downloading is delay	76	38.0
Limited access to computer terminals	97	48.5
Power problems	57	28.5
Lack of search skills	76	38.0
Lack of adequate staff	23	11.5
The information is not constantly available on the same URL	41	20.5
Lack of uniform standard in open access journal publishing	25	12.5
Lack of online help	41	20.5
Access instructions are not clear	25	12.5

Highest number of respondents 97 (48.5%) have stated that limited access to computer terminals was the major problem followed by 76 (38.0%) each have stated downloading delay and lack of search skills and also 69 (34.5%) and 57 (28.5%) have stated unavailability of Internet connection and power failures were the problems faced by them while using resources. Other problems such as lack of adequate staff, information not available constantly in same URL, lack of uniform standard, online help and access instructions were the problems faced by respondents.

Table 8: Impact of Open Access Resources on research

Comparison made between the research scholars' gender with impact of OA resources on research. Two-tail t-test is being used to find out whether significant difference is existing between the research scholars' gender with impact of OA resources on their research.

Impact	Gender	No. of Cases	Mean	Variance	Df	t stat	P(T<=t) one tail	t Critical one tail	P(T<=t) two tail	t Critical two tail
Makes easy accessibility of the research work	Male	108	4.31	0.24	197	1.133913	0.129105	1.652625	0.258209	1.972079
	Female	91	4.23	0.31						
Possibility of self archiving	Male	108	4.194444	0.232866	197	0.998141	0.159718	1.652625	0.319435	1.972079
	Female	91	4.10989	0.498901						
Reduces publication delay	Male	108	3.296296	0.509519	197	-1.10766	0.134679	1.652625	0.269358	1.972079
	Female	91	3.417582	0.690354						
Provides increased citations to published scholarly works	Male	108	3.388889	0.65109	197	-3.87451	7.27E-05	1.652625	0.000145	1.972079
	Female	91	3.846154	0.731624						
Open Access Journals have high quality articles	Male	108	2.842593 3.241758	1.517047	197	-2.35714	0.009699	1.652625	0.019397	1.972079
	Female	91		1.296459						
Open Access Journals/Books have high reputed editorial team	Male	108	3.027778	1.33567	197	-0.93622	0.175152	1.652625	0.350304	1.972079
	Female	91	3.186813	1.53138						
The readership of Open Access Journals are more than subscribed	Male	108	3.37037	0.590516	197	-2.66008	0.004228	1.652625	0.008456	1.972079
	Female	91	3.681319	0.775092						
Availability of my resources at global level	Male	108	4.166667	0.53271	197	-0.43628	0.331556	1.652625	0.663113	1.972079
	Female	91	4.340659	16.56044						
Helps to publish more publication	Male	108	3.972222	0.326324	197	1.991612	0.023898	1.652625	0.047795	1.972079
	Female	91	3.769231	0.735043						

From the calculated 'P' values, there is no significant difference found between the research scholars' gender with impact statements such as makes easy accessibility of the research work, possibility of self archiving, reduces publication delay, OA resources have high reputed editorial team, and availability of resources at global level. Whereas, significant difference found between the research scholars' gender with other impact statements such as provides increased citations to published scholarly works, open Access Journals have high quality articles, the readership of Open Access Journals are more than subscribed and helps to publish more publication. From the mean scores, impact of OA on research for female research scholars is more for all the statements except possibility of self archiving and availability of resources at global level.

Discussion

This study is conducted among the research scholars of Bharathidasan University, Tamil Nadu, India is one of the prestigious universities in India is being accredited with A+ grade by National Assessment and Accreditation Council (NAAC), India for the purpose of ranking and funding. Since the university library has identified more OA resources and developed IR, this study will be more useful to identify the perception and use of OA resources by the research scholars and findings of the study will be more useful to the authorities to know the usage level and take appropriate action accordingly. Majority of the research scholars used OA resources for their research work which is coinciding with the study conducted by Bala, Bansal & Sharma, (2018); Chakyarkandiyil, (2020); Janet, Ronke & Onaolapo, (2017). Highest number of research scholars faced delay in downloading the materials and unstable power supply which is inline with the study conducted by Musa (2016). Majority of the research scholars found inadequate computer terminals to access the OA resources and lack of search skills which is corroborating with the results found by Bhatti (2014). Majority of the research scholars were aware of e-Journals, e-Books, e-Theses and Dissertations, etc is similar with the study conducted by Kurian and Nagarajan (2018). The research scholars learnt to access the resources through research supervisor and by attending conferences and seminars. Library professionals occupied third position which warrants the librarians to create more awareness about OA resources to the research scholars. It is found from the open-ended question that the research scholars have low awareness on different open access routes such as green and gold. Research scholars also expressed fear in sharing the OA resources as they were not familiar with copyright issues.

Conclusion

From the findings, majority of the research scholars were not aware of e-content pages, e-reports, e-proceedings, subject gateways, IR and e-directories. As OA resources are alternative model to the print-based publication, library professionals need to create more awareness. If the department has adequate number of computers with internet connection will enable the research scholars to access the resources effectively and efficiently, but, the results reveals that less number of research scholars accessing the OA resources from department. Hence, the departments should have more computers with internet connection. The research scholars faced problems such as delay in download, lack of computer terminals and lack of search skills. The library should provide more number of computers with high internet bandwidth. In order to utilise the resources, the library professional should organise programmes such as Open Week or Open Day to create awareness about OA resources and also should organise information literacy programme quite often to utilise the resources. Significant differences found on the impact of OA on research based on gender and more stress faced by female scholars need to be addressed.

References

1. Mohammed, Abubaker., & Garba, Ali (2013). Awareness and use of open access scholarly publications by post graduate students of faculty of science in Ahmadu Bello University, Zaria (ABU), Kuduna State, Nigeria. *Samaru Journal of Information Studies* 13(1&2), 61-68.
<https://www.ajol.info/index.php/sjis/article/view/106870>.
2. Baich, Tina. (2015). Open Access: Help or hindrance to resource sharing? *Interlending and document supply*, 43 (2), 68-75. <https://dx.doi.org/10.1108/ILDS-01-2015-0003>
3. Suber, P. (2012). Open Access Overview.
<https://legacy.earlham.edu/~peters/fos/overview.htm>
4. Stevan Harnad. (2003). Maximizing university research impact through self –archiving. *JCOM*, 2(4), 1-7.
<https://jcom.sissa.it/sites/default/files/documents/jcom0204%282003%29A01.pdf>
5. Bala, S., Bansal, S., & Sharma, Y. (2018). Awareness of Open Access Resources among the researchers of Punjab Agricultural University, Ludhiana, *International Journal of Library Information Network and Knowledge*, 3 (1), 139- 145.
<http://slp.org.in/IJLINK/volumes/IJLINK-V3I1-12.pdf>.
6. Janet, O. W., Ronke, A.S., & Onaolapo, A. R. (2017). Awareness and usage of Open Access among University Lectures in Nigeria. *New media and mass communication*, 63, 6-18. <https://www.iiste.org/Journals/index.php/NMMC/article/download/38570/39665>
7. Musa, A. U. (2016). An appraisal of Open Access Utilization among Academic in Federal Universities in North western States of Nigeria. *Library Philosophy and Practice*, (e-journal). <http://digitalcommons.unl.edu/libphilprac/1374>.
8. Ivwighreghweta, O., & Onoriode, O.K. (2012). A study on awareness and use of open access journals by LIS Students at University of Ibadan, Nigeria. *Library Philosophy and Practice*. <http://digitalcommons.unl.edu/libphilprac/719/>
9. Prasad, N. N., & Chandrashekara, M. (2015). Awareness towards open access sources among students, researchers and faculty in Management colleges in Karnataka. *International Journal of Library and Information Studies*, 5(1), 135-145.
10. Zhu, Y. (2017). Who support open access publishing? Gender, discipline, seniority and other factors associated with academics' OA practice. *Scientometrics*, 111, 557-579.
11. Hommel, M. (2010). 10 Years of Malaria Journal: how did Open Access change publication patterns, *Malaria Journal*, 9 (284).
12. Bjork, B., & Solomon, D. (2012). Open access versus subscription journals: a comparison of scientific impact, *BMC Medicine*, 10 (73).
13. Berlin Declaration. <https://openaccess.mpg.de/Berlin-Declaration>
14. Bethesda Statement on Open Access Publishing, :
<http://legacy.earlham.edu/~peters/fos/bethesda.htm>

15. Budapest Open Access initiative (2002). Read the Budapest Open Access initiative. <https://www.budapestopenaccessinitiative.org/read>
16. Muqueen, Shaista. (2006). Preservation of Digital Collection in India, 4th Convention PLANNER-2006, Mizoram University, Aizwal (pp247-250), 09-10 November, INFLIBNET, Ahmedabad.
17. Shodhganga (2010-2020). <https://shodhganga.inflibnet.ac.in/>
18. Kurian, B., & Nagarajan, M. (2018). Awareness and use of Open Access Resources among the Research Scholars of Annamalai University, Tamil Nadu: study, *Journal of Awareness in Library and Information Science*, 7 (1), 109-114.
19. Chakyarkandiyil, Nisha. (2020). A study on attitude of Research Scholars towards Open Access Resources. *International Journal of Scientific and Research*, 9 (7), 87-90.
20. Nagaraj, M.N., & Bhandi, M.K. (2016). Use and Awareness of Open Access Resources among Researchers: A case study of Raman Research Institute. *SRELS Journal of Information Management*, 53 (5), 381-386.