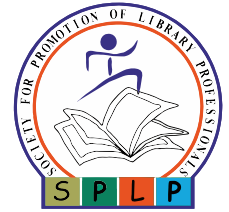


- Vol. 8, No. 2, July - December, 2021
- Print ISSN : 2348-1765
- Online ISSN : 2348-1773



Journal of Information Management



JIM – Journal of Information Management

Vol. 8, No. 2, July - December, 2021

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Subscription Rate for the Year: 2022

Subscription Rates	Indian (Rs.)	Other Countries (US\$)
Print**	5000	-
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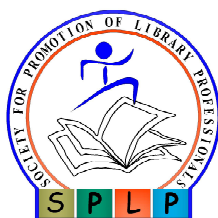
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Indexed/Abstracted with

- Indian Citation Index
- Google Scholar
- CNKI Scholar
- EBSCO Discovery
- J-Gate



Print ISSN: 2348-1765
Online ISSN: 2348-1773

JIM – JOURNAL OF INFORMATION MANAGEMENT

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A Study of Bibliometric Analysis of SRELS Journal of Information Management During 2016–2020

Prabhu C.

Librarian, Kristu Jayanti College of Law, Bangalore, Karnataka, India

Email id: prabhu@kristujayanti.com

Received: 10-08-2021; Accepted: 11-12-2021

ABSTRACT

The present study analyses the articles published SRELS Journal of Information Management, the leading UGC-CARE enlisted Indian journal in the field of Library and Information Science (LIS) during the year 2016-2020, which explores the volume wise, issue wise pattern of distribution of articles, authorship pattern of articles, the geographical distribution of major contributions and contributors, state wise distribution of articles from India, reference distribution pattern and its authorship pattern. The study reveals that during the mentioned period 248 articles. SRELS journal has got maximum contribution under two authorship patterns of articles 121(48.79%) during the period. SRELS Journal of information management has got more contributions from India (89.24%), and foreign countries 8. Maximum references are cited (3974) and authors are likely to cite jointly authored articles in their reference than single authored.

Keywords: Bibliometrics, SRELS journal of information management, Authorship pattern, Reference pattern

INTRODUCTION

In today's educational environment, Journals are the one of the most inevitable primary sources of scientific communication and systematic collection of many peer reviewed journals popularly known as online databases are representing subject disciplines. This has always been a popular exercise among the researchers to map, to measure and analyse the existing research and the actual goal of this exercise is to study the latest trends in a subject, scientific contribution of a particular institution or country or how some specific journal is doing in a particular subject area. Bibliometrics, which of such methods to undertake these kinds of studies, is an emerging thrust area of research from different branches of human knowledge. Alan Pritchard, who first used the word "Bibliometrics," described it as the

"application of mathematics and statistical methods to books and other media of communication" (Pritchard, 1969). As 21st century popularly known as knowledge society, Bibliometric methods are considered as a standard tool of science policy and research management to determine the contribution of a single author or to describe and evaluate the relationship between two or more authors or works.

SRELS Journal of Information Management, the leading UGC-CARE enlisted Indian journal in the field of Library and Information Science (LIS) valuable medium among LIS professionals and presents immense knowledge about newest developments, fresh concepts, modern technological information etc. In this present study, the authors have investigated the articles published SRELS Journal of Information Management during the year

2016-2020 which explores volume wise, issue wise distribution and authorship pattern of articles, geographical distribution of articles, major contributors and contributions, reference distribution pattern.

REVIEW OF LITERATURE

The present review of related literature mainly highlights the research studies that were done on bibliometric analysis of particular individual Indian and foreign Library and Information Science journals as well as group of Indian journals with comparison and these are chronologically arranged from present to past.

Singh and Chander (2021) evaluated the publication trends of IFLA Journal for the period between 2013 to 2019 using Bibliometric techniques and examined total 189 articles of seven volumes of the source journal to define chronological distribution, authorship outline and gender distribution, mapping of subjects, types of document cited, ranking of authors etc.

Barman (2020) analyzed a comparative study of citations of articles published in DESIDOC Journal of Library and Information Technology (DJLIT) and Annals of Library and Information Studies (ALIS) during the year 2017 to 2019 and using Google Scholar the total citations were received by these articles during 2017 to 2020 (June).

Kumar and Kumar (2020) explored the pattern of publications using bibliometric analysis of Journal of Documentation for the period of 2005 to 2018 and showed that a total of 687 articles were published in the 14 years period, with 71 (10.3%) articles were published the highest total in the year 2018.

Nath and Jana (2020) represented bibliometric analysis of the journal Annals of Library and Information Studies (ALIS) during 2008 to 2018 and under this study period, total numbers of 377 articles were contributed by 723 authors published within 11 volumes and 44 issues.

Bapte and Gedam (2019) carried out bibliometric analysis of 54 issues of SRELS Journal of Information

Management, containing total 572 documents where 91.95% were published as the articles during the year 2010 to 2018. Total 7690 citations were tagged to the 526 research papers and with regard to geographical contribution, the most productive state of India was Karnataka (179).

Haque *et al.* (2019) carried out Bibliometrics study of the 1046 scholarly articles have been published by LIS researchers around the world in the Library Philosophy and Practice (E- Journal) for the period 2014–2018.

Kannan and Thanuskodi (2019) analyzed a bibliometric study of 1402 articles which were published during the period from 1998 to 2018 in the Library Philosophy and Practice journal. This study also covered bibliometric analyses parameters like year-wise distribution of articles, category-wise classification of papers, subject-wise distribution of articles, authorship patterns, and institutions-wise distribution of contributions.

Khanna *et al.* (2018) in their study focused on the bibliometric study of the journal titled 'Journal of Academic Librarianship' (JAL) during the period 2007 to 2016 and Web of Science Citation database were used. Total 656 articles were retrieved and analyzed on diverse parameters i.e. chronological ordering of articles, extent of articles, authorship and citation pattern etc.

Shukla and Verma (2018) presented a bibliometric analysis of the Library Herald Journal for the period of ten years 2008 to 2017 in which 222 articles were published and analyzed the authorship pattern, geographical distribution, prolific author, reference distributions, and authorship pattern of reference.

Verma and Brahma (2018) investigated the articles published in two most popular leading journals of LIS field in India as well as the world i.e., SRELS Journal of Information Management and DESIDOC Journal of Library and Information Technology (DJLIT) and revealed that during the period 2012-2016, SRELS journal (306) has more publications than DJLIT (286). During the marked period, SRELS has the maximum number

of joint authored publications (67.32%) than DJLIT (66.08%) and SRELS has received more contributions from India (92.24%) than DJLT (89.50%).

Singh and Parameswaran (2017) showed a bibliometric analysis of 567 articles published in the Library Hi Tech Journal during the year 2007 to 2016 and examined the prolific author, country-wise distribution of articles, document type, organization wise and year wise distribution of articles.

Verma and Brahma (2017) presented and discussed a bibliometric study of the DESIDOC Journal of Library & Information Technology (DJLIT) during the period of twelve years 2005 to 2016 in which 553 articles were published. The authors examined the various bibliometric parameters such as authorship pattern of articles and references, geographical distribution, major contributions from prolific authors, state wise contribution of articles and number of references and revealed that India contributed the highest publications with 88.95%.

Kuri and Palled (2016) examined the scholarly articles published in Journal of Indian Library Association (ILA) for ascertain number chronological distribution of articles, number of pages, authorship pattern and degree of collaboration, institutional wise contribution and geographical distribution of articles which were recorded and analyzed.

Teli and Maity (2015) carried out bibliometric analysis of DESIDOC Journal of Library and Information Technology (DJLIT), contained total 282 research articles which were published during the period 2010-2014 based on various parameters like year wise growth pattern of articles, authorship patterns, Geographical distribution of articles etc.

Verma and Gupta (2015) revealed the bibliometric study of the E- Journal, Library Philosophy and Practice from 2005 to 2014 and covered the growth of literature and authorship patterns of the journal.

Kumar (2014) analyzed total 114 articles through bibliometric analysis of the journal named “Library

Herald” for the period between 2011 to 2014 and evaluated basically the number of articles, authorship pattern, average number of references per articles, subject wise distribution of articles, forms of documents cited, year wise distribution of cited journals etc. The result of this study showed that single authors wrote 65 (57.01%) articles while 49 (42.98%) articles were written by joint authors.

OBJECTIVES

The main objectives of this present study are listed below:

- To investigate the articles published in the SRELS Journal of Information Management during the year 2016-2020;
- To determine the volume wise, issue wise distribution and authorship pattern of articles published during the year 2016-2020;
- To explore the geographical distribution of articles and the number of contributors;
- To arrange rank wise the major contributors of SRELS Journal of Information Management with the number of contributions;
- To evaluate the reference distribution pattern, authorship pattern and average reference per article.

SCOPE AND COVERAGE

The scope and coverage of the present study has been confined to the articles published in SRELS Journal of Information Management from the year 2016 to 2020.

METHODOLOGY

The data for the present bibliometric study has published articles in SRELS Journal of Information Management. Total 248 articles were collected from 30 issues of 5 volumes of the SRELS Journal of Information Management from volume number 53 to 57 during 2016-2020. Average articles per issue were calculated by

undertaking into consideration only 30 issues published in above mentioned bi-monthly journals. The valuable data for this study was collected from SRELS website <http://www.srels.in/index.php/sjim/issue/archive>. All collected data were tabulated and analyzed to satisfy the above mentioned objectives of this study.

DATA COLLECTION AND ANALYSIS

In this study, an attempt has been made by the authors to analyze the data collected for the study to make the analysis more meaningful.

Table 1 delimitates the data related to volume wise distribution of articles from the journals. It shows that a total of 248 articles were retrieved from 30 issues of five volumes with an average of 41.31 from SRELS Journal covering the period of 2016-2020, in which the year 2016 has got highest number of publications i.e., 64 (25.80%) with an average article of 10.66 per issue, followed by 2017 (18.95%) and 2018 (19.35%).

Table 2 shows the data based on volume wise authorship patterns of articles during the period of study. The table

illustrates that from SRELS Journal, the maximum articles for the whole five years were contributed by two authors with 121 (48.79%), followed by single author with 82 (33.06%) and three authors with 35 (14.11%). Volume number 53 has the highest contribution i.e., 64, in which most contributions was under two authorship pattern (25). The table shows that SRELS has got maximum contribution under two authorship pattern of articles with 121 (48.79%)

Table 3 clearly shows that out of 248 articles, 166 are joint author publications, which means more than 66.93% articles are published in the SRELS Journal were on co-authorship pattern during the study period (2016-2020).

Table 4 delimitates the number of articles contributed by various countries to SRELS during the period of 2016-2020, accordingly ranking of the countries was done based on total number of contributions from the particular country. Table clearly explain that India 224 (89.24%) is evident to be at top, while Africa with total number of 9 (3.58%) contributions and 18 (3.90%) contributors

Table 1: Volume wise distribution of articles in SRELS Journal of Information Management

Year	Distribution of articles Issue wise								Total Publications and (%)	Average Articles per Issue
	Vol. No.	Issues	Issue No. 1	Issue No. 2	Issue No. 3	Issue No. 4	Issue No. 5	Issue No. 4		
2016	53	6	9	11	12	12	11	9	64 (25.80)	10.66
2017	54	6	7	8	8	8	8	8	47 (18.95)	7.83
2018	55	6	8	8	8	8	8	8	48 (19.35)	8.00
2019	56	6	8	8	8	8	7	7	46 (18.54)	7.66
2020	57	6	8	7	7	7	7	7	43(17.33)	7.16
Total	30	40	42	43	43	41	39	248	41.31	

Table 2: Volume wise authorship pattern of articles in SRELS Journal of Information Management

Year	Vol. No.	Single Author	Two Authors	Three Authors	Four Authors	Five Authors	Total
2016	53	25	25	8	6	-	64
2017	54	18	22	6	1	-	47
2018	55	15	24	8	-	1	48
2019	56	14	23	8	1	-	46
2020	57	10	27	5	1	-	43
Total	82(33.06%)	121(48.79%)	35(14.11%)	9(3.62%)	1(0.40%)	248	

Table 3: Issue wise article distribution pattern of authors of SRELS Journal of Information Management

Author Type	Distribution Issue wise						Total Articles and (%)	Cumulative Articles and (%)
	Issue No. 1	Issue No. 2	Issue No. 3	Issue No. 4	Issue No. 5	Issue No. 6		
Single	16	8	17	15	13	13	82 (33.06)	82 (33.06)
Two	17	23	21	21	24	15	121 (48.79)	203 (81.85)
Three	5	8	5	16	1	10	35 (14.11)	238 (95.96)
Four	1	3	-	1	3	1	9 (3.62)	247 (99.59)
Five	1	-	-	-	-	-	1 (0.40)	248 (100)
Total	40	42	43	43	41	39	248	

Table 4: Geographical distribution of contributions and contributors SRELS Journal of Information Management

Name of the Country	Total No. of contributions and (%)	Total No. of contributors and (%)	Rank
India	224 (89.24)	416	1
Africa	9 (3.58)	18	2
Sri Lanka	6 (2.39)	7	3
Saudi Arabia	3 (1.19)	6	4
New Zealand	3 (1.19)	3	5
Iran	2 (0.79)	2	6
Bangladesh	2 (0.79)	4	7
China	1 (0.39)	2	8
Indonesia	1 (0.39)	3	9
Total	251 (100%)	461	

stands next to India, followed by Sri Lanka with 6 (2.39%) contributions and 7 (1.51%) contributors a total number of 8 foreign countries have contributed 27 articles with 45 contributors in SRELS Journal.

Table 5 emphasizes the state wise contribution of articles from India. The table shows the ranking of states of India based on total number of contributions from particular state. It is especially clear that India being the host country. In conditions of ranking, Karnataka emerged at top most position with maximum 79 (18.80%) number of contributions 79 contributors from rest of the states, followed by West Bengal with total number of 77 (18.33%) contributions and 78 contributors, and Maharashtra with 35 (8.33%) contributions and 35 contributors, during the period of 2016-2020.

Table 6 shows the major contributors and pattern of article distribution of the journal during the period of 2016-2020. Bidyathi Dutta (7) contributed the highest number of articles, while Sukumar Mondal (5) with second highest and N.S. Harinarayana (4) with third highest contributions during the period of 2016-2020.

Table 7 shows the reference distribution pattern published in SRELS during the period of 2016-2020. The table illustrates that SRELS Journal, a total of 3974 references were cited from 248 articles during the period of 2016-2020 which makes an average reference of 79.68 in SRELS Journal and volume no. 53 from the year 2016 has recorded average of 17.40% reference per article, which is the highest among other articles, and on the basis of reference distribution issue wise pattern, issue 3 has recorded total number of 807 references constituting 20.30%, followed by issue 6 which recorded total number of 673 references constituting 16.93% and issue 4 which recorded 665 references constituting 16.73%.

Table 8 displays the authorship of references during the period of 2016-2020. The table given below has been notice that the maximum references are under the single authorship pattern i.e., 1545 (39.80%) references, followed by 1128 (28.33%) references are two authors and organization having 482 (12.10%) references in SRELS Journal. The result indicates that in the journal, authors are likely to cite joint authored articles in their references than singled authored.

Table 5: State wise contribution of articles from India along with authorship pattern of SRELS Journal of Information Management

Name of the State	Single Author	Two Authors	Three Authors	Four Authors	Five Authors	Total Contribution and (%)	Total Contributors
Karnataka	38	30	8	2	1	79 (18.80)	79
West Bengal	43	29	5	-	-	77 (18.33)	78
Maharashtra	19	12	3	1	-	35 (8.33)	35
Uttar Pradesh	15	12	5	-	-	32 (7.61)	32
New Delhi	13	12	4	-	-	29 (6.90)	29
Tamil Nadu	13	7	1	-	-	21 (5.00)	21
Rajasthan	12	6	1	-	-	19 (4.52)	19
Punjab	11	4	1	-	-	16 (3.80)	16
Haryana	7	6	1	-	-	14 (3.33)	14
Orissa	8	5	-	-	-	13 (3.09)	13
Kerala	6	4	-	-	-	10 (2.38)	10
Andhra Pradesh	4	2	2	-	-	8 (1.90)	8
Mizoram	3	3	1	-	-	7 (1.66)	7
Gujarat	5	2	-	-	-	7 (1.66)	7
Meghalaya	4	3	-	-	-	7 (1.66)	7
Assam	4	2	-	-	-	6 (1.42)	6
Jammu & Kashmir	2	3	1	-	-	6 (1.42)	6
Puducherry	4	2	-	-	-	6 (1.42)	6
Telangana	4	1	-	-	-	5 (1.19)	5

Table 6: Major contributors and pattern of article distribution in SRELS Journal of Information Management

Author Name	Single Author	Two Authors	Three Authors	Four Authors	Five Authors	Total contribution and (%)	Rank
Bidyathi Dutta	2	5	-	-	-	7	1
Sukumar Mondal	4	1	-	-	-	5	2
N.S. Harinarayana	2	2	-	-	-	4	3
M. Krishnamurthy	1	3	-	-	-	4	4
Arijit Das	2	2	-	-	-	4	5
Chamani Gunasekera	4	-	-	-	-	4	6
B.M. Gupta	1	1	1	-	-	3	7
S.M. Dhawan	1	2	-	-	-	3	8
Raymond Ongus	2	1	-	-	-	3	9
B.B. Chand	3	-	-	-	-	3	10
Soumen Tali	3	-	-	-	-	3	11
Ratna Bandyopadhyay	-	3	-	-	-	3	12
Pijushkanti Panigrahi	-	1	2	-	-	3	13
Akhilesh K.S. Yadav	3	-	-	-	-	3	14

Table 6 contd...

Author Name	Single Author	Two Authors	Three Authors	Four Authors	Five Authors	Total contribution and (%)	Rank
Balu Maharana	-	3	-	-	-	3	15
K.N. Balasubramanya Murthy	-	3	-	-	-	3	16
Arindam Sarkar	3	-	-	-	-	3	17
Udayan Bhattacharya	-	3	-	-	-	3	18
David Bainbridge	3	-	-	-	-	3	19
Abhijit Chakrabarti	2	-	-	-	-	2	20
Jagjit Singh	1	1	-	-	-	2	21
V. Uma	1	1	-	-	-	2	22
Rita Gupta	-	-	2	-	-	2	23
B. Sutradhar	-	2	-	-	-	2	24
Satya Ranjan Sahu	1	1	-	-	-	2	25
Soumen Kayal	2	-	-	-	-	2	26
Baisakhi Das	-	2	-	-	-	2	27
Mohammad Bagher Negahban	2	-	-	-	-	2	28
Shankar Reddy Kolle	2	-	-	-	-	2	29
T.H. Shankarappa	-	2	-	-	-	2	30
Constantine Matoke Nyamboga	-	-	2	-	-	2	31
Aditya Tripathi	-	1	1	-	-	2	32
Nazir Ahmad Ganai	2	-	-	-	-	2	33
BhaskarMukherjee	1	1	-	-	-	2	34
Sudip Ranjan Hatua	-	2	-	-	-	2	35
Lavji N. Zala	2	-	-	-	-	2	36
K.C. Garg	2	-	-	-	-	2	37
Bebi	1	1	-	-	-	2	38
Manoj Kumar Verma	1	-	1	-	-	2	39
Bijayananda Pradhan	2	-	-	-	-	2	40
AbdullahAlmobarraz	2	-	-	-	-	2	41
Tanmoy Mondal	2	-	-	-	-	2	42
Sukanya Mondal	1	1	-	-	-	2	43
Saumen Adhikari	2	-	-	-	-	2	44
Shiv Shakti Ghosh	2	-	-	-	-	2	45
B. Subhash Reddy	-	1	1	-	-	2	46
Dinesh K. Gupta	1	1	-	-	-	2	47
Neelam Kabra	1	1	-	-	-	2	48
K.P. Singh	1	1	-	-	-	2	49
Total	68	51	10	-	-	129	

Table 7: Reference distribution pattern in SRELS Journal of Information Management

Year	No. of references (Issue wise)								Total references and (%)	Cumulative references and (%)	Average Ref. per Article
	Vol. No.	No. of Articles	Issue No. 1	Issue No. 2	Issue No. 3	Issue No. 4	Issue No. 5	Issue No. 6			
2016	53	64	179	117	249	193	181	195	1114 (28.05)	1114 (28.05)	17.40
2017	54	47	121	164	147	93	102	121	748 (18.82)	1862 (46.85)	15.91
2018	55	48	109	111	92	110	137	157	716 (18.01)	2578 (64.87)	14.91
2019	56	46	85	142	127	149	79	72	654 (16.45)	3232 (81.32)	14.21
2020	57	43	95	123	192	120	84	128	742 (18.67)	3974 (100)	17.25
Total	248 (6.24)	589 (14.82)	657 (16.53)	807 (20.30)	665 (16.73)	583 (14.67)	673 (16.93)	3974	79.68		

Table 8: Authorship of reference of SRELS Journal of Information Management

Author Type	Distribution of references Issue wise						Total references and (%)	Cumulative references and (%)
	Issue No. 1	Issue No. 2	Issue No. 3	Issue No. 4	Issue No. 5	Issue No. 6		
Single	223	250	352	279	225	216	1545 (39.80)	1545 (39.80)
Two	152	200	248	179	173	176	1128 (28.33)	2673 (67.14)
Three	51	67	63	86	58	95	420 (10.55)	3093 (77.69)
Four	12	20	18	21	27	19	117 (2.93)	3210 (80.63)
Five	1	9	8	2	6	5	31 (0.77)	3241 (81.41)
Six	5	1	2	3	3	2	16 (0.40)	3257 (81.81)
Organization	19	13	19	5	11	23	90 (2.26)	3347 (84.07)
More than Six	16	12	23	36	17	48	152 (3.81)	3499 (87.89)
Not found/ Accessible	110	85	74	54	63	96	482 (12.10)	3981 (100)
Total	589	657	807	665	583	680	3981	

CONCLUDING REMARKS

SRELS Journals are UGC-CARE enlisted most popular Indian journal in the field of Library and Information Science (LIS), till now SRELS Journal has served our LIS community for 57 years. As we know due to advancement of information and communication technology with up gradation of open access system, there has seen a speedy progress in research publications trend in LIS field and most importantly open access system has minimized the costs to access scholarly journals for providing global access to users. The main focus of this study is to compare by analysing articles in leading Indian journal of SRELS based on the above mentioned objectives.

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How to cite this article: Prabhu C, 2021. A Study of Bibliometric Analysis of SRELS Journal of Information Management During 2016–2020. *JIM - Journal of Information Management*, Vol. 8, No. 2, pp. 65-73.

Disaster Planning System in The Libraries Situated at Indian Central Universities : A Study

Shraddha Shahane

Librarian, Govt. Arts and Commerce College, Mohna, Distt – Gwalior, Madhya Pradesh, India

Email id: shraddhashahane25@gmail.com

Received: 17-07-2021; Accepted: 27-12-2021

ABSTRACT

This paper describes the different disaster situations which destroy the libraries and interrupt its services. The paper discusses the availability of various measures at the libraries of the Central Universities of India. The focus of the paper is to know the actual position of disaster planning at the libraries of central universities situated in India. The study reveals the result which shows the awareness level of librarians on this matter.

Keywords: Disaster, Disaster plan, Disaster team, Preservation section

INTRODUCTION

We know that the libraries are the store-house of books which work on the collection, organisation, preservation and dissemination of information. Libraries are functioning for the present generation and preserving information for the future generation. In other words, Libraries are also an important component of society. These perform some important liability for the growth of society & transmit cultural heritage among different generations. But several times, they face dangerous situations and lose their reading materials, human life and services. Destruction or damage of libraries means the loss of a nation in the perspective of economic, cultural and educational level.

In the last few decades, the frequency of disasters is increasing continuously. As a results of the disasters, various parts of society have suffered for a long time. Then in this situation, various libraries also suffered. Due to the disaster situation, lots of precious and valuable information material, staff, library building and other

infrastructure are to be damaged. Therefore Libraries need safeguard and preservation activity and the responsibility of the librarian is also to be increased. At the time of the disaster hit, the library and information centre was paralysed for its functioning. To face disaster situations, planning is the most essential factor in the perspective of the library. No risk management policies are available in various libraries. In this situation, no clear guidelines are followed when a disaster occurs. Disaster planning is a co-operative activity.

DISASTER : MEANING AND DEFINITION

It is a calamitous incident, which interrupts the daily lives of the library and librarians and other staff and extra efforts are to be done for providing normal activities of the library at that time. It is an occurrence arising without warning. In other words, it happened at any time and its result is in the form of serious destruction. Destruction can be found in the form of damage to library building, loss of library resources and equipment, loss of human and interruption in library services.

Oxford English Dictionary” explains the meaning of disaster is an “anything that befalls of ruinous or distressing nature; a sudden or great misfortune, mishap, or misadventure; a disaster”.

UNISDR, 2009 (United Nations International Strategy for Disaster Reduction) explains “A serious disruption of the functioning of a community or a society involving widespread human, material, economic or environmental losses and impacts, which exceeds the ability of the affected community or society to cope using its own resources” (United Nation, 2009).

TYPES OF DISASTER

Various ancient libraries have been fully or partially destroyed due to facing different types of disasters e.g. Ancient Nalanda university library-Dharma Ganja, Library of Alexandria, Library situated at University of Bosnia and Herzegovina, Library situated at University of Louvain (Belgium) etc. Disaster can happen due to climatic phenomena or man-made error.

Libraries are facing natural disasters in the form of rain, flood and cyclone, earthquakes, volcanic -eruptions, cold and heat waves, thunderstorms, tsunamis, avalanches, landslides, cloud bursts, dust storms, wildfires and much more. Natural disasters cannot be prevented but its damages can be reduced after adopting measures.

Several human activities also become the reason for library destruction. Libraries are also damaging through the activities of humankind which are found in the form of war and terrorism, fires, water leakage, building deficiencies, biological damages, micro-organisms, insects or bug infestation, system failure, collapse of shelving, indoor structural accident, vandalism and arson, theft and burglary, electric short circuits, riots, social and political unrest etc. Man-made disasters arise due to human error or negligence of staff and others. If the level of negligence is identified at an early stage then man-made disaster can be prevented in Figure 1 to 6.

Natural Disaster	Man-Made Disaster
Earthquake	Arson
Flood	Vandalism and Theft
Tornados	Electric short circuit and fire
Tsunamis	Water Leakage
Cyclone/ Typhoon	Biological
Cloud-burst	Chemical
Dust & cold storm	Accident
Landslide	System Failure
Avalanches	War and terrorism
Wildfire	

Figure 1: Categories of Disasters

DISASTER PLANNING

Disaster is an unscheduled phenomenon which disturbs the normal library services of affected libraries. Generally, it occurs suddenly at a certain place and its effect is experienced over a long period. Lots of effort takes by the librarian to overcome the effect of the disaster. It is the big responsibility of the librarian to adopt the safety measures for preserving the reading materials and providing safety to library staff and other infrastructure. Disaster is an uncontrolled situation in which occurrence cannot be prevented but the possibility of losses can be reduced by adopting different types of measures by the libraries. Generally, Libraries are so much affected by the disaster. Disaster planning is administrative, operational and determinative activities which are applicable in every level of disaster management. Disaster planning includes all activities of the disaster situation. It is also known as disaster management. It is a dynamic process whose success will be possible on the basis of good collaboration between library professionals.

DIFFERENT PHASES OF DISASTER PLANNING SYSTEM

Disaster planning system includes four phases which are known as prevention, preparedness, reaction and recovery.

- **Prevention** means the activities which are used to prevent the happening of disasters. In other words, it minimizes the effect of disaster happening.
- **Preparedness** refers to activities that prepare institutions for disasters. In other words, it is planning to handle the disaster.
- **Reaction/Response** refers to those activities which are done at the time of disaster happening.
- **Recovery** means to return back to normal lives. In this phase, those measures should be adopted which are most significant to re-construct and restore the affected areas.

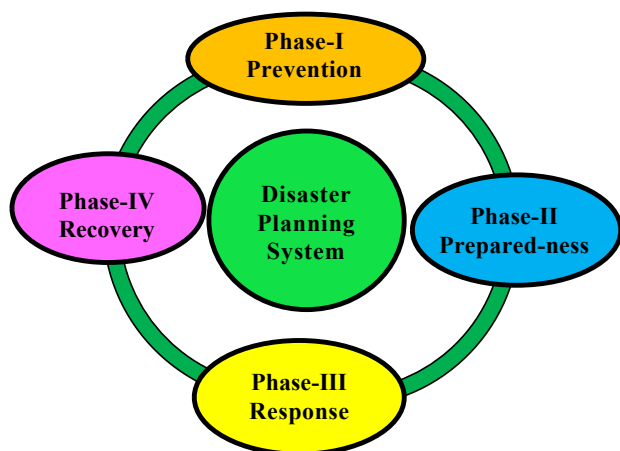


Figure 2: Different Phases of Disaster Planning System

THE SITUATION OF DIFFERENT DISASTER ZONES IN INDIA

India is the 7th biggest nation in the world. India is divided into 29 states & 7 federal territories in which 27 states and UTs (union territories) come under the disastrous area. In our country, approximately 58.6% of the area comes in the earthquake-prone zone. While approximately 12% of the area comes in the flood and river affected area. 68% of the agricultural area comes in the drought-prone area. 7516 km area belongs to the coastline and 5700 km is at the risk of cyclone/tsunamis. The mountainous regions of India are suffering from landslides and avalanches (<https://nidm.gov.in/>). Disaster-prone areas are divided into four zones which

are known as zone-II (Least Risk area), zone-III (Medium risk area), zone-IV (High-risk area) and zone-V (Highest risk area).

DISASTERS AND UNIVERSITY LIBRARIES:

Disasters in the libraries can occur in the form of loss of literature, the collapse of buildings and shelving, loss of human lives etc. Our former president Dr S. Radhakrishnan said that "university library is the heart of university". We know that university is an institute of higher education and it plays an important role to create new knowledge by promoting research work. No university can survive without the library. Then it is an important factor for the university library to preserve and safeguard the heritage of its material. Nowadays different calamities are occurring continuously without intimation. Disasters events cannot be prevented but different measures can be adopted by the libraries for reducing the possibility of trouble.

THE FOCUS OF THE PRESENT STUDY

This study focuses on different issues of the disaster planning system in libraries located at central universities of India. Central Universities are situated at a total of 29 states and union territory which come in the different zones of natural and manmade disasters. This study focuses on different points such as awareness and experience of librarian/In-charge about the disaster conditions, adopted preventative measures, disaster plan, mock drill, preservation section etc. The focus of the research is limited up to the libraries situated at only 40 central universities of India. These universities are situated at different states of India which come in different disaster-affected areas. The result of research may also change the attitude of administrator/employees of libraries regarding disaster situations.

NEED OF THE PRESENT STUDY

Librarians/Incharge of the central universities are little aware regarding this matter. The result of the study

would help to increase awareness among librarians to develop the disaster planning system in their library. The Present study would help to organize training sessions and awareness programs in the libraries of Central Universities. The result of the study would help to develop the safety infrastructure for disaster in the libraries situated at Central Universities.

PURPOSE OF THE RESEARCH WORK

- To find out the adopting strategies of the libraries of central universities for disaster handling capacity.
- To identify which type of disasters affected the libraries.
- To know the librarian's experience about the disaster occurrences in their central university's library.
- To find out the actual position of the disaster plan among the central university's library of India.
- To know the status of the disaster team and training programmes among the libraries of central university situated in India.

HYPOTHESIS

- All the Central University's libraries of India have been affected by any type of disaster.
- All the Central University's libraries of India have not a written disaster plan.
- All Central University's libraries have not maintained a trained disaster team.
- All Central University's libraries have organised a mock drill programme every year.
- All the Central University's libraries of India have furnished with few types of equipment for the prevention of various types of the disaster situation.

METHODOLOGY OF THE RESEARCH

Descriptive method is adopted by the researcher in this study. Both primary and secondary data are important

for any research work. Researchers thought that the survey method is the best option for collecting the primary data. In this study, questionnaires are the main tool for data collection. In the questionnaire, maximum questions were closed type, and filled answers get in either yes or no option.

RESPONSES RECEIVED

The Questionnaire was designed online as well as Pdf format and sent to the Librarian/In-charge of the Library through email. Thereafter the researcher has done telephonic contact with librarians and requested him to fill the online questionnaire. A questionnaire prepared broadly and distributed to 40 libraries attached to central universities. The responses received from 34 University Libraries. In other words, approximately 85% of responses were received. Remaining 6 Librarians did not return their responses. Only 34 libraries that have sent their responses are listed here in Table 1 and 2.

Libraries attached with Central University of Allahabad, Central University of Kashmir, Central University of Punjab, Central University of Orissa (Koraput), Mahatma Gandhi Antarrashtriya Hindi Vishwavidyalaya (Vardha) and Pondicherry University did not return their responses.

RESULT OF THE STUDY

About Library Collection

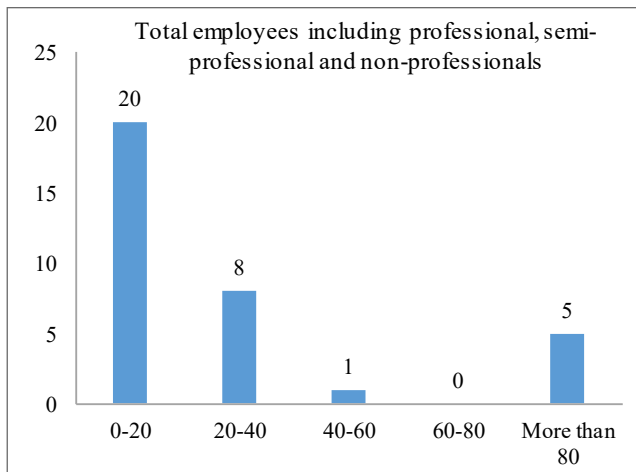
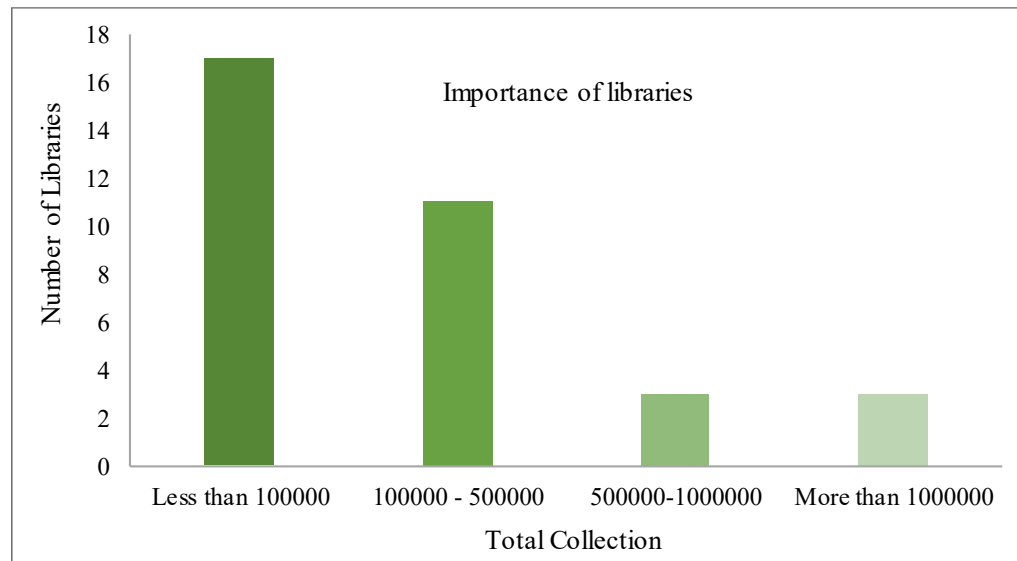
Library collections are an essential element for the survival of any library. In any disaster incident, Library materials are easily damaged, University libraries expend lots of funds to maintain their collection. Only 3 University libraries out of 34 enrich with very much collection and keep National significance at University level (i.e. over 10 Lakhs reading material).

Library Staff

Library employees are also valuable assets for libraries because the success of the libraries depends on their

Table 1: Name of 34 libraries and its abbreviation

University Name	Name of Library	Abbreviation
Aligarh Muslim University, Aligarh	Maulana Azad library	AMU-MAL
Assam University, Silchar	Rabindra Library	AU-RL
Rajiv Gandhi University Rono Hills Doimukh, Arunachal Pradesh	University library	RGU-Library
Babasaheb Bhimrao Ambedkar University, Uttar Pradesh, Lucknow	Central Library	BBAU-GBCL
Banaras Hindu University, Varanasi	Sayaji Rao Gaekwad Library	BHU-SRGL
Central University of Gujarat, Gandhi Nagar	Central Library	CUG-Library
Central University of Haryana, Mahendergarh	Central Library	CUH-Library
Central University of Himachal Pradesh library	Central library	CUHP-Library
Central University of Jammu	Library	CUJammu-Library
Central University of Jharkhand	Central library	CUJ-Library
Central University of Karnataka	Central Library	CUKlibrary
Central University of Kerala	Central Library	CUKerala-Library
Central University of Rajasthan	Central Library	CURAJ-library
Central University of South Bihar, Gaya	Central Library	CUSB-Library
Central University of Tamil Nadu	Central Library	CUTN-Library
Dr Hari Singh Gaur Vishwavidyalaya, Sagar	Jawahar Lal Nehru Library	DHSGSU-JLN
Guru Ghasidas Vishwavidyalaya Bilaspur (C.G.)	Central Library	GGU-library
Hemwati Nandan Bahuguna Garhwal University	Central Library	HNBGU-Library
Indira Gandhi National Tribal University Amarkantak	Prof. Ram Dayal Munda Central Library	IGNTU-Library
Jamia Millia Islamia, New Delhi	Dr Zakir Husain Library (Central Library)	JMI-ZHlibrary
Jawaharlal Nehru University New Delhi	Dr. B. R. Ambedkar Central library	JNU-Library
Mahatma Gandhi Central University Bihar, Motihari	Central Library	MGCUB-Library
Maulana Azad National Urdu University Hyderabad	Saiyid Hamid Library	MANUU-SHL
Mizoram University, Aizawl	Central Library	MZU-Library
Manipur University	Central Library	MANIPURU-library
Nagaland University, Lumami	Central Library	NU-Library
North-Eastern Hill University, Shillong (Meghalaya)	Central Library	NEHU-Library
Sikkim University, Gangtok Sikkim	Central Library	CUS-Library
Tezpur University, Napaam (Assam)	Central Library	TEZU-Library
The English and Foreign Language University, Hyderabad	Ramesh Mohan Library	EFLU-RML
Tripura University (A Central University)	Central Library	TRIU-Library
University of Delhi	Central Library	DULS
University of Hyderabad	Indira Gandhi Memorial library	IGM-UOHYD
Visva-Bharati (A Central University)	Central library	VB-Library

Figure 3: Large collections of libraries**Figure 4: Records of Library Personnel**

employees. Loss of the employees during the disaster affects the services of the library.

Experience of disaster incident

Only 15% (i.e.5) Central University libraries have faced different disaster incidents whereas 85%(i.e.29) of Central University Libraries are not faced any disaster situation.

Only 5 University libraries experienced a disaster incident in which 60% (i.e.3 known as CUG-Library, IGNTU-Library and MANIPURU-library) of libraries faced a natural disaster and 20% (Named as MZU-

Table 2: Affected University Libraries from disaster

Disaster incident	Total Number of Libraries	Percentage
Yes	5	15
No	29	85
Total	34	100

Library) of libraries faced man-made disaster. 20% (Named as BBAU-GBCL) of libraries affected due to facing both kinds of disasters. BBAU-GBCL affected by heavy rain, earthquake and theft, whereas CUG-Library and IGNTU-Library affected by heavy rain. MANIPURU-library affected by heavy rain and earthquake. MZU-Library affected by chemical and biological disasters.

Earthquake affected libraries are BBAU Library (Lucknow) and Manipur University library (Imphal). BBAU library faced the collapse of wall/ceiling and shelves while Manipur Central University Library faced the big crack in the wall. Manipur Central University Library also specified that it be repaired. Biological disasters are very common in libraries. 3 libraries identified the problem of a biological disaster.

In rainy days various library buildings face the problem of water leakage. 59% of University Libraries suffer the leakage problem. Termite problems are very common

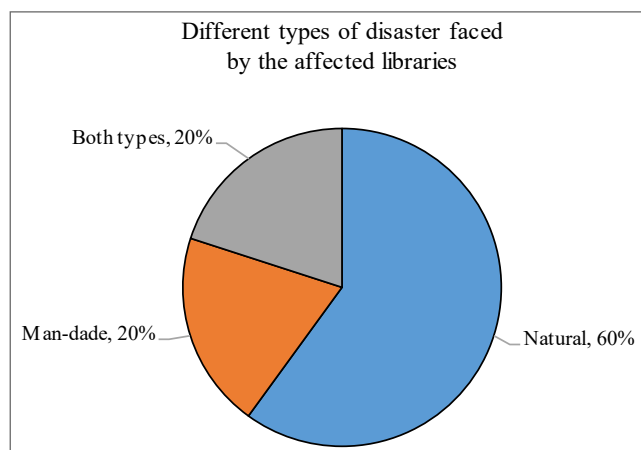


Figure 5: Categories of disaster

in libraries. It originates due to environment, area, building age including its condition, irregular cleaning & dusting, temperature and humidity etc. 44% of libraries faced the termite problem.

Due to the disaster incident, Library services can interrupt for a few periods. Only 2 libraries (Namely IGNTU-Library and MANIPURU-library) were not (out of 5 affected libraries) able to give their services to users up to one month whereas 1 library (MZU-Library) was not also able to provide their services up to 12 months.

About adopted preventive measures by Central University's Library

Due to the library premises, the disaster effect can in large or small form. Various factors such as age, floors, location, waterproof and emergency gate etc. can also help to control the disaster. If Library building situated at separate premises and constructed in the single floor instead of the basement and multi floors, then the disaster can easily handle to control. only 82% (i.e. 28*Libraries) University libraries established at the separate building. 21% of the library building (i.e. 7) constructed in single-story. 35% of libraries have a basement. 59% of libraries have waterproofed. 82% of libraries have an emergency gate.

The age factor of the library building can also invite the disaster incident. 3 (9%) Library buildings have historical

importance due to its age up to 100 years. These libraries are AMU-MAL, BHU-SRGL and VB-Library. 5 (15%) libraries operating from the building which age up to 50 years. 8 (24%) library building age were up to 25 years old. 17 (50%) library building age was up to 10 years.

Several times libraries face biological and fire disasters that arise due to eating and smoking habits of library employees. To avoid the circumstances, it is necessary to strictly prohibit eating and smoking at the library stack room. 91% (31) of University libraries strictly prohibited the eating and smoking habits of library employees in their stack room.

Without power-supply the library faces the problem of maintaining the temperature and humidity level. Other equipment such as a computer, AC and vacuum cleaner etc. does not work without power supply. In this condition, libraries are unable to provide services to their readers. 85% of libraries (29) have the power supply in the uninterrupted way.

Furnished equipment at the University's library

Generally, library buildings should be furnished with various kinds of equipment which can help to avoid disaster incident. Only 19 Libraries (56%) are fully air-conditioned, 30 libraries (88%) furnished with a CCTV camera for preventing the problems of theft of books, torn the pages, write on the library books, under-line the paragraph of books and other vandal acts with all library materials and equipment. 30 libraries (88%) were furnished with the fire extinguishers to control the flame in the beginning stage and avoid the big disaster. Various early warning systems are available in the market. The Fire alarm system is one of early warning system which is available at 15 libraries. The smoke alarm system is also the early warning system which is available at 12 libraries. The lightning conductor is a device that protects the building from a lightning strike on heavy rainy days. 21 libraries (62%) adopted lighting conductors as a protection device. The earthquake warning machine is also an early warning machine which is available at only 2 Libraries. Water is highly dangerous for library

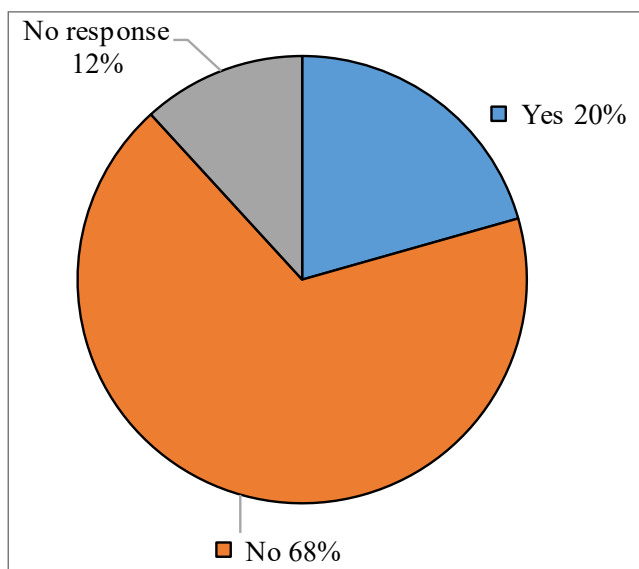


Figure 6: Existence of Written disaster plan in university Libraries

materials. Hence the water sensing alarm system should be furnished in each library. Only 8 Libraries equipped it.

About disaster plan

A disaster plan is a document which specifies the whole procedures of prevention and preparedness for disaster incidents. Only 20% (i.e.7) of University Libraries have prepared their disaster plan in written form.

Every Library should improve and revise their disaster plan regularly. 24% of libraries revised and updated their disaster plan regularly. Every library should exercise the practical test on their disaster plan. 27% of libraries exercised a practical test of their disaster plan.

Different aspects of the disaster team

Each library should maintain a trained disaster team to deal with disaster situations. 8 libraries have maintained a trained disaster team. Every library should conduct training programmes for their staff. This study reveals that 14 libraries (41%) organised this type of training programmes. Every library should quickly provide an emergency kit to their disaster team at the time of the disaster incident. Only 12 libraries provided emergency

kit immediately to their disaster team at the time of the disaster.

About the separate Preservation section

Every library should establish a separate preservation section. Only 13 libraries (out of 34) have founded a separate preservation section. Every library should appoint conservation experts at their preservation section. Only 35% of libraries (i.e.12) employed the conservation expert in their preservation section. Every library should appoint conservation experts at their preservation section. This study represents that 35% of libraries (i.e.12) employed the conservation expert in their preservation section. The preservation section at every library should be fully furnished with the necessary equipment. Only 13 libraries (i.e.38%) fully furnished with the necessary equipment to its preservation section.

CONCLUSION

The Safety of the library is a matter related to library management. Different types of disasters are dangerous for the library. The disaster's impact does not restrict up to only the library building and its reading materials, but its impact can also be seen on the library services, readers and library staff. The library administration is responsible for ensuring the safety of the whole library system in any disaster situation. Typically, the norms related to library premises do not fully implemented during construction. The result showed that all these standards applied only in 4 libraries. Most of the libraries are in danger zone due to their premises. Similarly most of the University libraries did not fully furnish with essential equipment due to lack of awareness and fund.

Most of the librarians are unaware of the norms of the disaster plan. Continuous fluctuations showing in the findings present the low awareness level of librarians on this aspect. Similarly the position of the disaster team, their training and practice, availability of the emergency kit is not so good in libraries attached to Central universities. These aspects are not available in most of the libraries. The provision of separate preservation

section and its norms is not available in all libraries attached to central universities. The overall conclusion is that the University libraries are not much safe and also not fully prepared for disaster handling. Every measures and step of the disaster planning system is not at a satisfactory level in all libraries attached to central universities.

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How to cite this article: Shahane S, 2021. Disaster Planning System in The Libraries Situated at Indian Central Universities : A Study. *JIM - Journal of Information Management*, Vol. 8, No. 2, pp. 74-82.

DESIDOC Journal of Library and Information Technology (DJLIT) (2016-2020): A Bibliometric Study

Dheeraj Singh Negi

Assistant Librarian, Lingaya's Vidayapeeth Deemed University, Nachauli, Jasana Road, Old Faridabad, Faridabad-121002, Haryana, India

Email id: dheerajnegi3@gmail.com

Received: 18-06-2021; Accepted: 29-11-2021

ABSTRACT

The present study main purpose examine the articles published in DESIDOC Journal of Library and Information Technology (DJLIT) a Indian Journal in the field of Library and Information Science (LIS) during the year 2016-2020. which explores the volume wise, issue wise pattern of distribution of articles, authorship pattern of articles, geographical distribution of major contributions and contributors, state wise distribution of articles from India and reference distribution. The study reveals that DJLIT (277) has during the mentioned period. DJLIT has made contributions under two authorship pattern of articles 132 (47.65%) during the study period. We found that in this study contributions from highest articles in India (82.07%) and countries (15) New Delhi emerged at top position with 74 (32.56%) contributions and 156 contributors in DJLIT. B. M. Gupta contributed the highest number of articles published (12).

Keywords: Bibliometrics, DESIDOC Journal of Library and Information Technology (DJLIT), Authorship pattern, Reference pattern

INTRODUCTION

Started in 1981, DESIDOC Journal of Library and Information Technology (DJLIT) is a peer-reviewed, double-blind, open access, bi-monthly journal that publishes original research and review papers related to library science and IT applied to library activities, services, and products. Major subject fields covered include: Information systems, Knowledge management, Collection building and management, Information behaviour and retrieval, Librarianship/library management, Library and information services, Records management and preservation, etc.

It is meant for librarians, documentation and information professionals, researchers, students and others

interested in the field. Abstracting and Indexing Information DJLIT is now indexed in Scopus, Web of Science (Emerging Source Citation Index), UGC-CARE, Dimensions, LISA, LISTA, EBSCO, J-Gate Plus, Proquest, Library Literature and Information Science Index/Full-text, The Informed Librarian Online, Indian Science Abstracts, Indian Citation Index, WorldCat, Google Scholar, etc.

Focus and Scope

DESIDOC Journal of Library and Information Technology publishes original research and review papers related to library science and IT applied to library activities, services, and products. Major subject fields covered include: Information systems, Knowledge

management, Collection building and management, Information behavior and retrieval, Librarianship/library management, Library and information services, Records management and preservation, etc.

Peer Review Process

DESIDOC Journal of Library and Information Technology followed Double-blind peer-review process. The primary aims of the peer review process are to: - maintain quality control - protect the reputation of the journal - 'ration' space in as objective and transparent a manner as possible. The Editors review all submitted manuscripts initially. Manuscripts with insufficient originality, serious scientific flaws, or absence of importance of message are rejected. Manuscripts are sent to two experts/reviewers without revealing the identity of the reviewers to the contributors. Within a period of eight to ten weeks, the contributors will be informed about the reviewers' comments and acceptance/rejection of the manuscript. Papers accepted would be edited for uniformity, consistency, style, grammar, punctuation, and format.

Publication Frequency

DESIDOC Journal of Library and Information Technology is a Bi-monthly publication.

Open Access Policy

This journal provides immediate open access to its content on the principle that making research freely available to the public supports a greater global exchange of knowledge.

REVIEW OF LITERATURE

Singh and Chander (2021) evaluated the publication trends of IFLA Journal for the period between 2013 to 2019 using bibliometric techniques and examined total 189 articles of seven volumes of the source journal to define chronological distribution, authorship outline and gender distribution, mapping of subjects, types of document cited, ranking of authors etc. In another study,

Barman (2020) analyzed a comparative study of citations of articles published in DESIDOC Journal of Library and Information Technology (DJLIT) and Annals of Library and Information Studies (ALIS) during the year 2017 to 2019 and using Google Scholar the total citations were received by these articles during 2017 to 2020 (June). Kumar and Kumar (2020) explored the pattern of publications using bibliometric analysis of Journal of Documentation for the period of 2005 to 2018 and showed that a total of 687 articles were published in the 14 years period, with 71 (10.3%) articles were published the highest total in the year 2018. Nath and Jana (2020) represented bibliometric analysis of the journal Annals of Library and Information Studies (ALIS) during 2008 to 2018 and under this study period, total numbers of 377 articles were contributed by 723 authors published within 11 volumes and 44 issues. In another study, Bapte and Gedam (2019) carried out bibliometric analysis of 54 issues of SRELS Journal of Information Management, Containing a total 572 documents where 91.95% were published as the articles during the year 2010 to 2018. Total 7690 citations were tagged to the 526 research papers and with regard to geographical contribution, the most productive state of India was Karnataka (179). Haque *et al.* (2019) carried out bibliometrics study of the 1046 scholarly articles that have been published by LIS researchers around the world in the Library Philosophy and Practice (E-Journal) for the period 2014–2018.

Kannan and Thanuskodi (2019) analyzed a bibliometric study of 1402 articles which were published during the period from 1998 to 2018 in the Library Philosophy and Practice journal. This study also covered bibliometric analyses parameters like year-wise distribution of articles, category-wise classification of papers, subject-wise distribution of articles, authorship patterns, and institutions-wise distribution of contributions.

OBJECTIVES

- To investigate the articles published in the DESIDOC Journal of Library and Information Technology (DJLIT) 2016-2020;

- To determine the volume wise, issue wise distribution and authorship pattern of articles published during the year 2016-2020;
- To explore the geographical distribution of articles and the number of contributors;
- To arrange rank wise the major contributors of DESIDOC Journal of Library and Information Technology (DJLIT) with the number of contributions;
- To evaluate the reference distribution pattern, authorship pattern per article.

SCOPE AND COVERAGE

The scope and coverage of the present study has been confined the articles published in DESIDOC Journal of Library and Information Technology (DJLIT) from the year 2016 to 2020. In the website and examine in during periods 2016-2020

METHODOLOGY

The data for the present bibliometric study has inclusive articles published in bi-monthly journals named DESIDOC Journal of Library and Information Technology (DJLIT). Total 277 articles were collected from 30 issues of 5 volumes of the DESIDOC Journal of Library and Information Technology (DJLIT) from volume number 36 to 40 during 2016-2020 Average articles per issue were calculated by undertaking into consideration only 30 issues published in above – mentioned bi-monthly journals. The valuable data for

this study was collected from the DJLIT website (<https://publications.drdo.gov.in/ojs/index.php/djlit/issue/archive>). All collected data were tabulated and analyzed to satisfy the above mentioned objectives of this study.

DATA COLLECTION AND ANALYSIS

The Table 1 and Figure 1 shows that a total of 277 articles were retrieved from 30 issues of five volumes with an average of 46.15 from DJLIT journal in the period 2016-2020, in which year 2018 has got the highest number of publications i.e., 61 (22.02%) with an average article of 10.16 per issue, followed by 2016 (18.41%) and 2020 (19.13%).

Table 2 shows the data based on volume wise authorship patterns of articles during the period of study. The table illustrates that from DJLIT journal, the maximum articles

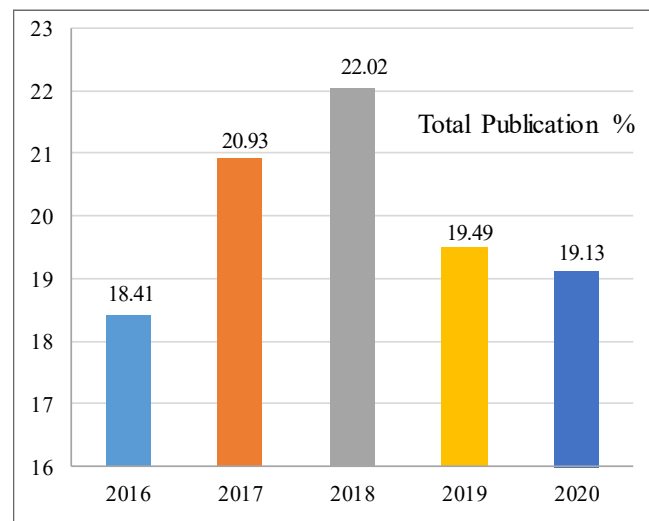


Figure 1: Total publication in percentage

Table 1: Volume wise distribution of articles in DJLIT

Year	Vol. No.	Issue	Issue No. 1	Issue No. 2	Issue No. 3	Issue No. 4	Issue No. 5	Issue No. 6	Total Publication (%)	Average article per issue
2016	36	1-6	8	7	9	9	10	8	51 (18.41)	8.50
2017	37	1-6	9	10	11	9	10	9	58 (20.93)	9.66
2018	38	1-6	11	11	11	10	10	8	61 (22.02)	10.16
2019	39	1-6	7	12	8	9	8	10	54 (19.49)	9.00
2020	40	1-6	8	8	7	9	10	11	53 (19.13)	8.83
Total		30	43	48	46	46	48	46	277	46.15

Table 2: Volume wise authorship pattern of articles in DJLIT

Year	Vol. No	Single author	Two Authors	Three Ait	Four	Five	Total
2016	36	19	22	7	1	2	51
2017	37	15	34	6	2	1	58
2018	38	15	28	13	3	2	61
2019	39	15	25	12	1	1	54
2020	40	17	23	6	4	3	53
Total		81	132	44	11	9	277

Table 3: Issue wise article distribution pattern of authors of DJLIT

Author Type	Issue 1	Issue 2	Issue 3	Issue 4	Issue 5	Issue 6	Total Articles and %	Cumulative Article and %
Single	14	16	16	15	10	10	81	81
Two	21	22	26	17	24	22	132	213
Three	6	6	4	40	10	8	44	257
Four		1		3	3	4	11	268
Five	2	3		1	1	2	9	277

for the whole five years were also contributed by two authors with 132 (47.65%), followed by single author with 81 (29.24%) and three authors with 44 (15.88%). Volume number 38 has the highest contribution i.e. 61, in which most contributions were fewer than two authors (28). maximum contribution under two authorship patterns of articles with 132 (47.65%).

Table 3 clearly shows that out of 277 articles, 196 are joint author publications that means 70.75% articles are published in the DJLIT journal were on co-authorship pattern during the study period (2016-2020).

Table 4 and Figure 2 delimitates the number of article contributions contributed by various countries to DJLIT during the period of 2016-2020, accordingly ranking of the countries was done based on the total number of contributions from the particular country. Table clearly explains that in DJLIT, after India 229 (82.07%), Africa stands next with 17 (6.09%) contributions and 48 (8.40%) contributors, followed by Iran with 7 (2.50%) contributions and 18 (3.51%) contributors.

The Table 5 and Figure 3 shows the ranking of states of India based on the total number of contributions from a

Table 4: Top Ten Country Geographical Distribution of contribution

Name of Country	Total No. of Contribution and %	Total No. of Contributors and %	Rank
India	229	451	I
Africa	17	48	II
Iran	7	18	III
Indonesia	6	15	IV
United States	4	10	V
New Zealand	3	3	VI
Russia	2	3	VII
Saudi Arabia	2	7	VIII
Spain	2	3	IX
Other	1	0	X

particular state. It is especially clear that India being the host country, maximum articles published in DJLIT during the period of 2016-2020 are from India itself, in which mainly of the articles are joint author publications. A total number of 24 places from India have also contributed in DJLIT. New Delhi emerged at top with 74 (32.59%) contributions and 156 contributors, followed by Uttar Pradesh with 23 (10.13%) contributions and

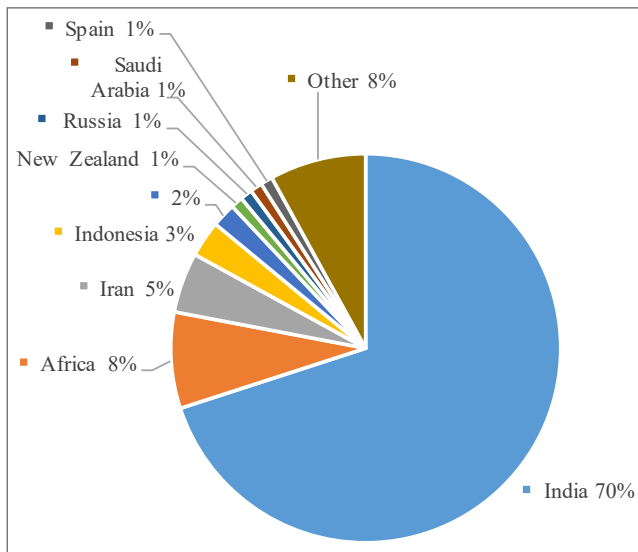


Figure 2: Article contribution

41 contributors occupies second place and Karnataka with 16 (7.04%) contributions and 35 contributors occupies third place

The Table 6 shows the major contributors and pattern of article distribution of the journal during the period of 2016-2020. Table discloses that B. M. Gupta (12) contributed the highest number of publications in DJLIT. After second is Surinder Mohan Dhawan contributed 11 Article submission and third rank is Margam Madhusudhan Number of article 9 and fourth rank is Raj Kumar Bhardwaj total number of article 7 and MonramaTripathi rank 5 total article submission 7.

Table 7 shows the reference distribution pattern published in DJLIT in the period of 2016-2020. The table

Table 5: State wise contribution of articles from India along with authorship pattern of DJLIT

Name of State	Single author	Two author	Three author	Four author	Five author	Total contribution and %	Total contribution
New Delhi	27	32	10	4	1	74 (32.59)	156
Uttar Pradesh	8	12	3			23(10.13)	41
Karnataka	3	10	4			16 (7.04)	35
West Bengal	4	8	2			14 (6.16)	26
Maharashtra	5	9	1			15(6.06)	25
Tamil Nadu	2	3	3		1	9 (3.96)	21
Jammu and Kashmir	3	5			1	9(3.96)	19
Haryana	1	5	2	1		9(3.96)	19
Punjab	3	7	-	-		10 (4.40)	17
Orissa	2	4	2	-		8(3.52)	16
Kerala	1	5	1	-		7(3.08)	14
Rajasthan	3	2	1	-		6(2.64)	10
Mizoram	2	3	-			5(2.20)	8
Puducherry		3	-	-		3(1.32)	6
Manipal		1	1	-		2(0.88)	6
Assam	2	2	-	-		4(1.76)	6
Gujarat		2	-	-		2(0.88)	4
Bihar		2	-			2(0.88)	4
Andhra Pradesh	1	1	-			2(0.88)	3
Uttarakhand		1	-			1(0.44)	2
Telangana	2	-	-			2 (0.88)	2
Chhattisgarh		1	-			1(0.44)	2
Sikkim	1	-	-			1(0.44)	1
Himachal Pradesh	1	-	-			1(0.44)	1
Total	71	118	30	5	3	227	444

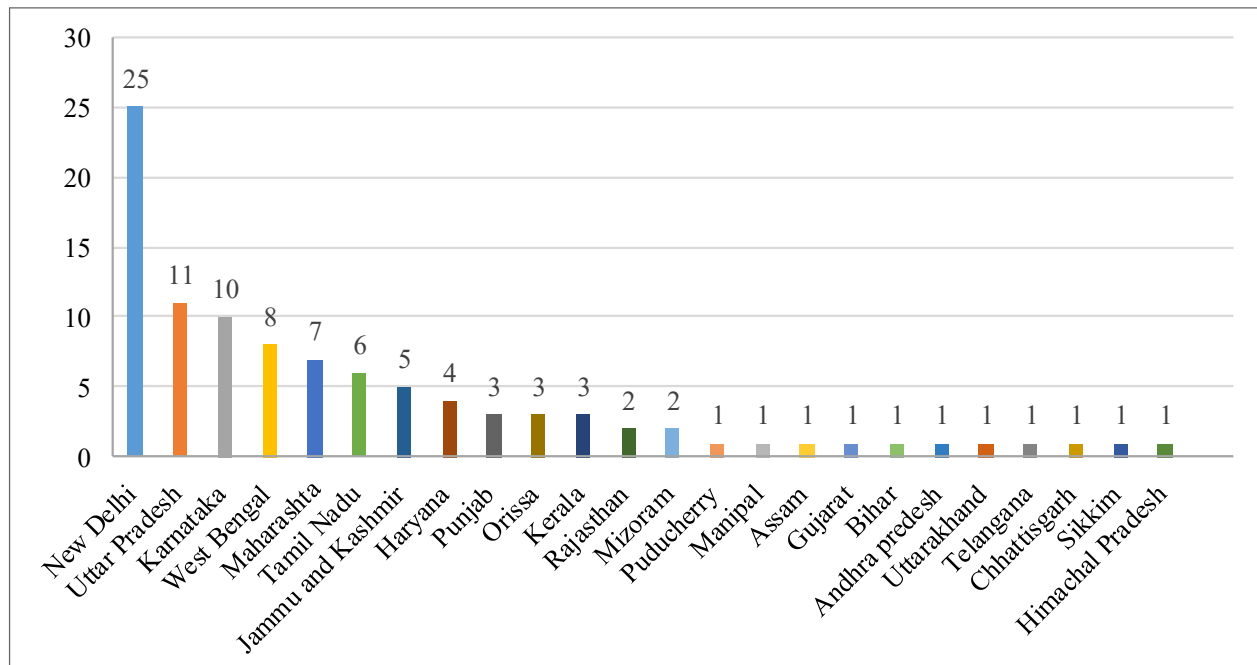


Figure 3: State By Author Contribution Percentage %

Table 6: Major contributors and pattern of article distribution in DESIDOC Journal of Library and Information Technology (DJLIT)

Author name	Single Author	Two Author	Three Author	Four Author	Five Author	Total Contribution	Rank
B.M. Gupta	9	2	1	-		12	I
Surinder Mohan Dhawan	2	9	-	-		11	II
Margam Madhusudhan	3	6	-	—		9	III
Raj Kumar Bhardwaj	7	-	-	-		7	IV
Manorama Tripathi	4	-	2	1		7	V
Rita Gupta		1	3			4	VI
Manoj Kumar Verma	4	-				4	VII
Dhiman Mondal	4	-				4	VIII
Sunil Kumar		1	2	1		4	IX
Nabi Hasan	1	2				3	X
K.C. Garg	3					3	XI
AlkaSuri	2	1				3	XII
Anup Kumar Das	1	2				3	XIII
Omer Hassan Abdelrahman	2					2	XIV
Nidhi Sandal	2					2	XV
P.K. Jain	1	1				2	XVI
Ashok Kumar	1	2				2	XVII
N.S. Harinaryana						2	XVIII
Geetha P.	2					2	XIX

Table 6 contd...

Author name	Single Author	Two Author	Three Author	Four Author	Five Author	Total Contribution	Rank
Ramesh K. Pandita	2					2	XX
Shivendra Singh		2				2	XXI
Sharad Kumar Sarkar		1				2	XXII
Suresh Kumar Chauhan	2					2	XXIII
Arabinda Maity		2				2	XXIV
Naushad Ali P.M.	2					2	XXV
Vishal Dattatary Bapte	2					2	XXVI
Kalyan Sundar Samanta	2					2	XXVII
Total	58	32	9	2	1	2	

Table 7: Reference distribution pattern in DJLIT

Year	Vol. No.	No. of article	Issue No. 1	Issue No. 2	Issue No. 3	Issue No. 4	Issue No. 5	Issue No. 6	Total No. Reference	Cumulative Reference and %	Average
2016	36	51	148	106	176	151	158	86	825	825	16.17
2017	37	59	204	126	142	169	171	199	1111	1936	18.83
2018	38	61	209	321	253	253	161	186	1361	3297	22.31
2019	39	50	195	284	147	147	185	322	1337	4634	26.74
2020	40	52	343	151	121	121	237	219	1272	5906	24.46
Total		273	1099	1088	839	956	912	1012	5906		108.51

is illustrates that total number of 5906 references were cited from 277 articles during the period of 2016-2020 which makes an average reference of 108.51 in DJLIT and volume no. 39 from the year 2019 has recorded highest average of 26.74 reference per article, on the basis of reference distribution issue wise pattern, issue 1 has recorded total number of 1099 references constituting 18.60%, followed by issue 2 with 1088 (18.42%) references and issue 6 with 1012 (17.13%) references.

CONCLUSION

The major findings from the present study are DJLIT (277) has publications during 2016-2020. The top average article in DJLIT is in 2018 with 10.16 per. DJLIT has got maximum contribution under two authorship patterns of articles 132 (47.65%) maximum number of joint authors 196 (70.75%) publication. DJLIT

has got more numbers of foreign countries i.e., 15 countries have contributed 49 articles with 120 contributors. DJLIT has got contributions from India (82.07%). New Delhi emerged at top position with 74 (32.56%) contributions and 156 contributors in DJLIT B.M. Gupta contributed the highest number of articles publication (12) in DJLIT. This study found that total number references are cited in DJLIT (5906).

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How to cite this article: Negi DS, 2021. DESIDOC Journal of Library and Information Technology (DJLIT) (2016-2020): A Bibliometric Study. *JIM - Journal of Information Management*, Vol. 8, No. 2, pp. 83-90.

Plagiarism: Role of UGC, INFLIBNET and Libraries in Encouraging Integrity and Quality of Academic Research in India

Ankit Kumar^{1*} and Ashish Srivastava^{2}**

¹M.Lib.I.Sc Student, Department of Library and Information Science, Chhatrapati Sahuji Maharaj University, Kanpur, Uttar Pradesh, India

²Librarian, Chhatrapati Sahuji Maharaj University, Kanpur, Uttar Pradesh, India

(*Corresponding author) email id: *amaurya635@gmail.com, **ashish.csjmu@gmail.com

Received: 27-07-2021; Accepted: 05-12-2021

ABSTRACT

Plagiarism in academic research has become a serious problem around the globe, even India is no exception. The article discusses various factors that are responsible for unethical and immoral act of plagiarism and its grave consequences on researchers, institutions involved and society as a whole. The article mainly focuses on the role of UGC and INFLIBNET in improving the quality of research in Indian universities. It investigates all the regulations/policies framed by UGC during 2009–2021 to prevent any form of academic misconduct including plagiarism. The article attempts to address the current status of all the initiatives/schemes started so far. The article also attempts to highlight the significant role libraries can play in fostering academic integrity and honesty through awareness-creating programmes, organising training and skill development workshops, counselling, etc. Libraries are actually frontline warriors in dealing with the menace of plagiarism.

Keywords: Plagiarism, Academic integrity, Academic misconduct, Researchers, UGC, INFLIBNET, Regulation, Shodh Ganga, Sodh Gangotri, Sodh Shuddhi, Libraries

INTRODUCTION

In today's scenario, plagiarism is a well-known and major problem in scientific and academic research all around the world and its prevalence despite the persistent efforts to curtail its excess is a matter of great concern for academicians (Tripathi and Kumar, 2009). Plagiarism can be defined as an act or copying the work of someone else without permission, either partially or fully, and present it as one's own work without paraphrasing, citing, crediting and acknowledging the original source correctly (Decco, 2003; Rita Obeid and Darryl B. Hill, 2017). Plagiarism is a form of literary theft and academic dishonesty in the literature that is considered

a serious offence. In other words, plagiarism is perhaps the most serious and the most widely recognised ethical lapse in scientific writing (Miguel Roig, 2015). It dilutes the integrity and honesty of academic community (Chopra, 2016). Plagiarism is neither restricted to any specific field (i.e. Academic world) nor to any particular area. It is a worldwide phenomenon that pervades almost all subjects whether it is medicine, agriculture, architecture, literature, music, painting, computer science, engineering, advertising, etc. Those who do not want to do original research will naturally copy the content without any citation. Stray cases happen in even advanced countries like the USA, UK, Japan, Germany, etc.

The concept of plagiarism is not new. It has been around for centuries, but the problem has been aggravated with the rise of technology (Born, 2003). The rapid development and advancement in information and communication technology have completely transformed the generation, organisation and dissemination of information with facilities of easy access and retrieval. ICT along with Internet, especially the advent of WWW in the 1990s led to information explosion and hence brought tremendous behavioural changes in academic research activities. In the past, for students to plagiarise, they had to take time to write down the material from books, but with Internet, they just cut and paste into their work, within a short period of time (Cromwell, 2006; McMurtry, 2001; Sumadevi, 2014). In this digital world, the abundance of available information makes it easier and increases the temptation to steal others' ideas (Chawdhary, 2020), therefore the disease called plagiarism has reached epidemic levels (Angell, 2006; Park, 2003). Plagiarism has become a common means of achieving easy higher grades, reputed position and different kinds of academic credits without bothering about moral values and professional ethics (Awasthi, 2019).

Researcher's scholars and students are moving towards Internet for shortcuts and readymade solutions to complete/supplement their thesis and dissertations. But one has to remember plagiarism is not only a serious misconduct but it is highly unethical, illegal and against moral values and principles (Midha, 2017) and ends with severe penalties. Plagiarism subverts the basic fundamental objective of education and genuine research that is generation of new reliable information, original work and ideas of research, creation of new knowledge or enriching the existing knowledge by new interpretation of already known facts and eventually contributing to socio-economic benefits for global good. As I said earlier plagiarism is a worldwide phenomenon, at present all countries are facing the issues related to plagiarism and India is no exception. The issue of plagiarism is directly concerned with standard of higher education system in a country (Singh, 2019).

Undoubtedly universities have always been epicentre of higher education, learning and research so they need to determine and maintain the standard in research to tackle the issue of plagiarism. In India, the responsibility has been taken by UGC, which is apex governing body of higher education system.

Before the establishment of UGC, all Indian Universities framed their own rules, regulations and standard, but after the establishment of University Grants Commission (UGC) under the University Grants Commission Act 1956, Indian Higher Education system has been standardised gradually. Since then it has been striving to take initiatives to continuously improve the quality of research in Higher Education Institutions (HEIs) in India. UGC formulates regulations/policies for such purposes and Higher Education Institution (HEIs) are under obligation to undertake the responsibilities given under those regulations/policies.

Information and Library Network (INFLIBNET) which is an autonomous centre of the UGC set in 1956 plays a major role in promoting scholarly communication among academicians and researcher across the country. It works towards modernising and networking academic libraries and promotion of information transfer and access.

At present, the question of the quality of research and plagiarism has become the centre of academic, professional and higher education policy debates all over the world. Therefore the study focuses on preventive measures taken by UGC for curbing plagiarism in HIEs till 2020. The study also tries to explore various initiatives taken by UGC in collaboration with INFLIBNET to enhance the quality of research output in the nation through open access repository portal, providing anti-plagiarism software to the universities and developing new tool/methods for research assessment. The study also examines the strategic role libraries could play in curbing plagiarism. To know the literature published for supporting the study, reviews are referred with are included in review of literature part.

LITERATURE OF REVIEW

Ahmadi and Sonkar (2015) conducted a survey in Ambedkar University, Lucknow, to study the level of awareness about plagiarism and fair use among research scholars. The study revealed majority of students are aware about the concept of plagiarism and using anti-plagiarism software for avoiding any problem. Though some were not completely aware about the issue and asked for some awareness related programmes about fair use and plagiarism.

Manoj Kumar and Arora (2015) discuss the model of central database of electronic thesis and dissertations introduced in India. The article also investigates its current status, guidelines for submission, usage of software for detecting plagiarism under ShodhGanga initiative. The article concludes with further recommendations of formulating guidelines to check plagiarism in universities.

Pathak and Malhar (2016) had done a comparative study between universities of NE region for the use of anti-plagiarism software (Urkund) and its impact on their research work. The study revealed 85% of respondent were highly satisfied with its usage. Urkund helped immensely by providing the change to revise and rectify the work, thereby improving the originality of research by reducing the percentage of similar content.

Midha (2017) published a paper on effective role librarians can play to avoid plagiarism in academic institutions where she discusses the problems of academic downfall due to unethical practice of plagiarism, she also tries exploring various reasons behind this malpractice and how libraries play a prominent role in conducting information literacy, awareness programmes and educating users about plagiarism.

Rita Obeid and Darryl B. Hill (2017) conducted a unique study on undergraduate students to find the causes behind plagiarism. She found that aside from intentional plagiarism, plagiarism may also be unintentional or

unconscious. Most of the students lack proper understanding of plagiarism. They were also unaware of proper ways of citing, paraphrasing and referencing. The study revealed that plagiarism was significantly reduced through intervention lectures. Thus suggesting students with explicit training and knowledge about ethical issues of plagiarism is an effective strategy to reduce academic dishonesty.

Awasthi (2019) conducted a review study on academic misconduct and plagiarism. She finds that the concept of plagiarism and academic integrity is well known among the majority of users owing to the abundance of available literature on this topic. The paper also highlights the significant role libraries play in providing explicit knowledge about plagiarism through awareness programmes and educating researchers about proper writing skill, time management, etc. through training workshops.

Faizan and Munshi (2019) conducted a study at the Aligarh Muslim University to investigate the awareness and attitude of research scholars towards plagiarism. Data suggested that majority of researchers were aware of plagiarism and considered it immoral and unethical but they still did not adhere to research ethics and academic honesty ends up indulging in plagiarism in order to increase their Academic Performance Indicator (API) score which is considered crucial in the recruitment process in the Universities. Lack of English language proficiency, proper writing skill, pressure to meet deadlines and lack of understanding about plagiarism are also some possible reasons to indulge in malpractice.

Chowdhary (2020) published a paper in which he discussed the concept, types of plagiarism and its adverse effects. The study identified the arrival of ICT as the major contributing factor in the rise of plagiarism.

Vijayan (2020) conducted a detailed study to investigate the number of Indian universities under different categories, uploading synopses in the ShodhGangotri repository. The study revealed only 67 (7.2%) universities out of the total are uploading synopses. Lack

of strict implementation guidelines regarding the UGC's Regulation is found as the main reason behind the unsatisfactory situation of the initiative.

Jilani and Ahmed (2020) published an article on role of librarians and information centres in plagiarism control. The study surveyed 200 engineering institutions and found that lack of awareness, academic pressure, lack of proper rules and regulations against plagiarism and lack of proper skills to cite, paraphrase, referencing, etc. are main reasons behind plagiarism. The study also revealed that majority of librarians believed that awareness programmes, interactive lectures, sound training and orientations workshops played a significant role in discouraging the act of plagiarism among researchers.

Shaheed Abiola Hamzat *et al.* (2020), a similar kind of research was conducted to investigate the role of library instruction in curbing plagiarism among undergraduates in the University of Ilorin, Nigeria. Contrary to the above, it found no significant relationship between attendance of library instruction and knowledge of plagiarism among students. The result suggested that the concerned stakeholders, particularly libraries should lay more emphasis on practical session's ethical writing. Therefore frequent practical training and skill development workshops along with awareness programmes would be more effective in reducing the scourge of plagiarism in long run.

Ashok Kumar (2020) published an article on the role of UGC in implementing anti-plagiarism software in Indian academic institutions. In this article, he has done a study to find out the role of UGC in standardising the research activities. He also describes the various initiatives taken by UGC for enhancing the quality of research by curbing plagiarism.

Sneha Tripathi and Dimple Patel (2021) published a paper on academic integrity in which they discussed several factors such as pressure from peer, gender and academic discipline, desire for material gains, instantaneous recognition, etc. that influence the

behaviour of researchers towards plagiarism. The study investigates the loopholes in the UGC Regulation, 2018. The paper also tries to address the over-dependence of academic fraternity on plagiarism detection tools and argues that the main objective of the campaign against plagiarism is to promote academic integrity and morality within an individual rather than detection, punishments or simply threat of being caught.

OBJECTIVE

- The main objective of this article is to analyse the role of UGC and INFLIBNET in improving the quality of academic research by restraining plagiarism.
- To study the factors responsible for academic plagiarism and its consequences.
- To explore the strategic role of libraries in embracing academic integrity and honesty by creating awareness about plagiarism.

METHODOLOGY

The study is based on secondary sources of information collected from different sources such as books, articles and related websites. Data related to various regulations/policies published by UGC, initiatives taken by INFLIBNET for promotion of academic research and deterrence of plagiarism, has been fetched from their respective websites. Discussion is carried out on the basis of obtained information. On the basis of the discussion, some suggestions and conclusion have been drawn.

DISCUSSION

Plagiarism Definition

According to the Dictionary of Etymology, the word plagiarism, which means 'literary theft', comes from the English word 'plagiary' (one who wrongfully takes another's words or ideas) that is derived from the Latin word 'Plagarius' meaning kidnapper.

According to the Merriam-Webster Online Dictionary, 'plagiarise' means:

1. to steal and pass off (the ideas or words of another) as one's own.
2. to use (another's production) without crediting the source.
3. to commit literary theft.
4. to present as new and original an idea or product derived from an existing source.

According to Bela Gipp (2014), academic plagiarism means the use of ideas, concepts, words or structures without appropriately acknowledging the source to benefit in a setting where originality is expected.

Factors Responsible for Academic Plagiarism

Understanding the factors responsible for academic plagiarism is crucial to effectively address the issue of reducing it. Different studies have identified several factors that influence the behaviour of researchers towards plagiarism and academic misconduct, one of which is ignorance. Ryan *et al.* (2009) found the main reason behind plagiarism is a genuine lack of understanding, where students are unaware of proper techniques of citing, paraphrasing, and referencing. The study also revealed that the majority of students involved in plagiarising without considering it a violation of academic integrity. Thus ignorance is seen as one major cause of plagiarism. Sridhar *et al.* (2013) also suggested that the poor understanding of citations, referencing and referencing styles among students is the major factor that increases the rate of plagiarism today. Aside from unconscious cheaters, there are some people looking for higher grades, instantaneous recognition and material gains in terms of employment/promotion, who plagiarise intentionally. An intentional act of plagiarism is a major deterrent to the authenticity and originality of academic research (Lakhotia, 2021). Chauhan (2017) mentioned several factors that encourage academic plagiarism among students like pressure of completing projects and assignments in a limited time frame, inadequate

preparation, English proficiency problem, poor writing skills, etc. Prakash and Badrinath (2016) investigated that despite plagiarism understanding, students commit plagiarism due to poor time management skills, lack of good academic writing skills, pressure of academic credit, peer pressure. Rajiiv *et al.* (2009) found intellectual laziness and fear or failure as some other responsible factors for increased level of plagiarism.

Recent advancement in ICT along with Internet has also brought tremendous increase in level of plagiarism in research work. Different types of databases with millions of articles are available on Internet. Abundance of easily accessible information has tempted students to act of plagiarism. In fact, the universal access to the Internet is considered as the main reason behind this decline in academic integrity, especially regarding plagiarism. But Internet is not solely responsible for plagiarism (Charlie Spargo, 2015) there was significant duplication of ideas and similarities in research topics prior to Internet era. A paper published in *Journal of Academic Ethics*, showed that similarity levels in doctoral theses were slightly higher in theses written before the advent of Internet (Chopra, 2016). Therefore need of hour is to understand that matter of plagiarism is entirely related to an individual's morality and ethics.

Another common factor that causes plagiarism is the prevailing rules/practices (e.g. Academic Performance Indicator) that require a certain number of research publications in a definite period for evaluating the competence and ability of candidate. Regulatory authorities do not have alternative mechanism to evaluate one's professional standing except mentioned above. Hence unnecessary pressure to publish exists. Such pressures force one to compromise with research ethics and indulge in plagiarism.

Some other supporting factors that contribute to the increasing level of plagiarism include unavailability of software and mechanism to detect plagiarism, lack of resources to conduct quality research, lack of uniform implementation of plagiarism policy, less stringent penalties to the guilty, lack of dedication and sincerity

on part of administrative authorities (Roka, 2017). They need to ensure that they act as facilitators not just monitors.

Consequences of Plagiarism

The practice of plagiarism has adverse effect on researcher, institution involved and society as a whole. Its implication extends beyond just academic dishonesty. Plagiarism not only degrades reputation of the institution but also damages the credibility of research emanating from that particular institution.

Plagiarism fuels intellectual laziness which results in no authentic research and innovation. The continuous practice of engaging in plagiarism results in recycling of same available knowledge by re-using old and existing ideas over and over again that gradually leads to decline in the overall level of knowledge. Such circumstances in long run may end with stagnant national growth and development followed by increased unemployment rate, economic disaster and law and order problem.

The Present State of Research in India

According to the report of the 'Committee on Promoting and Improving the Quality of Research in Indian Universities/Colleges (31 July 2019), the overall quality of University and College level research in India is far from satisfactory and in many institutions the quality of research is alarmingly poor, apparently plagiarism being the root cause (UGC, 2019b). This state is also reflected in the fact that Indian universities are way down in world rankings. As in the QS Ranking 2020 (Quacquarelli Symonds Rankings, 2020), there is no Indian university in the top 100. Almost the same story repeats in the rankings given by the Times Higher Education where no Indian university appears in the top 300. Obviously, something is amiss in the teaching and research environment of the universities and other institutions (Lakhotia, 2020).

According to SCIMAGO Institutions Ranking (SCImagoir) International Research and Innovation Ranking 2021, there is no Indian university in top 200.

Selcuk Besir Demir (2018) published an article on predatory journals; the study revealed that 62% of the total predatory fake journals are published in India alone. Indian researchers have contributed around 2,592 (10.4%) out of total 24,840 articles. At first, the figure may seem less impressive but if we compare the share of publications in fake journals with the total research publications of Indian academics, it is as high as 10% of the country's total research output such facts undoubtedly tarnish the trustworthiness of Indian research and research institutions. The following reasons have been identified behind uncontrolled flourishing of predatory journals; mandatory requirement to publish research articles in journals for receiving doctoral degrees, desire of rapid academic promotion, etc. (Bhusan, 2019).

The following situations can also be cited as contributing factor towards plagiarism in research activities in India

Lack of Infrastructure and Funding

- There is a shortage of qualified human resource for research guidance and supervision as well as substandard physical infrastructure and inadequate funding.
- Lack of start-up grant for research adds to the reluctance of talented young faculty to join the university system for academic research.

Institutional Framework

- The emphasis of the university system is on teaching rather than research.
- Rigid admission rules (e.g. bar on change of discipline, age restrictions imposed institutionally and lack of flexibility to exercise academic judgment in genuine cases that do not comply with admission rules but are capable of producing quality research).
- Lack of multi-disciplinary culture in universities prevents liberal academic research.
- The absence of academic mentorship provided by senior faculty members in balancing teaching loads and research requirements. As per AISHAE

website, there are 2.14 lakh teachers at university level (out of which only 9.3% are professor, 10% associate professor and 1% are assistant professor) for total 3.85 crore students (MHRD, 2020a).

UGC Role in Preventing Plagiarism in Academic Research

In India, the question of enhancing quality of research and academic honesty by curbing plagiarism has come to the fore due to enormous growth of research which is produced mainly as a part of doctoral research PhD in the University system during the last few decades. According to the data revealed by MHRD's All India Survey on Higher Education (AISHE Website) (MHRD, 2020b), the total PhD admissions increased from 77,798 in 2010–11 to 2,02,550 in 2019–20 with growth rate of 10% per annum. In MPhil Course enrolment increased at 5.2% per annum from 25,312 to 43,267 till 2017–18 then came down to 23,934 in 2019–20 (Figure 1). The number of awarded PhD degrees increased by 7.26% per annum during 2010–11 to 2019–20. (Figure 2). It is paradoxical that while the number of students enrolling in research has increased, India as a country has not made any notable mark in terms of its quality of research (Scaria and Ray, 2018; Shukla, 2005). This dismal performance of the HEIs in India calls for urgent action on the part of all stakeholders (UGC, 2020c).

FINDINGS

Since 2009 till 2020, the following regulations/policies have been passed by UGC for suppressing plagiarism and standardising academic research in India. The data have been collected from UGC and INFLIBNET websites and is represented in Table 2.

On the basis of the data discussed above it is inferred that UGC has taken several concrete steps at regular intervals for promoting integrity and improving quality of academic research in Indian universities. Since its inception till now UGC has issued three regulations in 2009, 2016 and 2018. The regulation of 2009 has total of 20 clauses specified under various heading namely Eligibility Criteria for M.Phil./Ph.D. Supervisor, Procedure for Admission, Allocation of Supervisor, Course Work, Evaluation and Assessment Method and most important one Depository with UGC (under clause 19). In supersession over the previous, 2016 regulation has total of 13 clauses named as Eligibility Criteria for Admission to the MPhil Programme, Eligibility criteria for Admission to PhD Programme, Duration of Programme, Procedure of Admission, Allocation of Research Supervisor, Course Work, Research Advisory Committee, Evaluation and Assessment Method, Academic, Administrative and Infrastructure

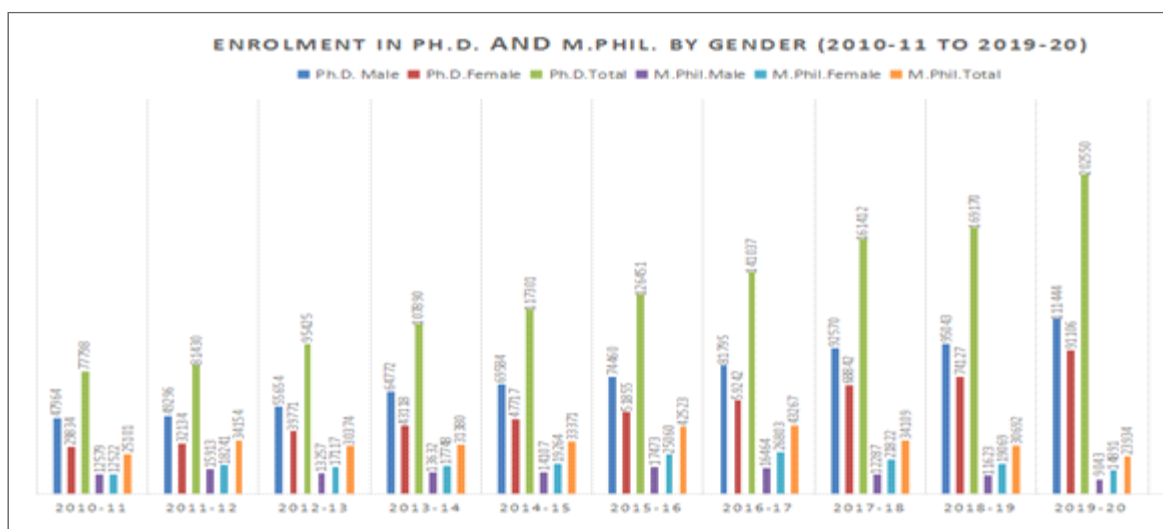


Figure 1: Enrolment in Ph.D. and M.Phil by Gender and Year

Source: Data collected from All India Survey on Higher Education Report; AISHE Portal (<https://aishe.gov.in/aishe/gotoAisheReports>)

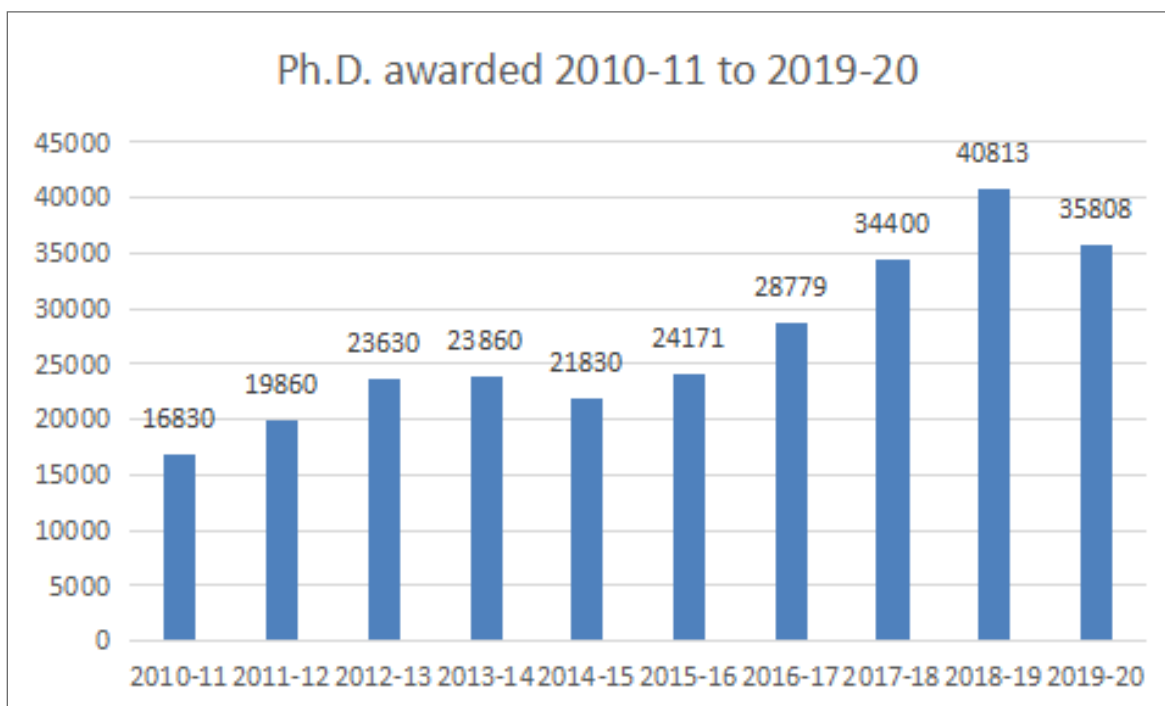


Figure 2: Distribution of Awarded Ph.D. by Year

Source: UGC annual reports (<https://www.ugc.ac.in/page/annual-report.aspx>)

Table 1: Level-Wise Students Enrolment between 2010 and 2020

Year	PhD male	PhD female	PhD total	MPhil male	MPhil female	MPhil total
2010–11	47,964	29,834	77,798	12,579	12,522	25,101
2011–12	49,296	32,134	81,430	15,913	18,241	34,154
2012–13	55,654	39,771	95,425	13,257	17,117	30,374
2013–14	64,772	43,118	1,07,890	13,632	17,748	31,380
2014–15	69,584	47,717	1,17,301	14,107	19,264	33,371
2015–16	74,460	51,855	1,26,451	17,473	25,060	42,523
2016–17	81,795	59,242	1,41,037	16,464	26,803	43,267
2017–18	92,570	68,842	1,61,412	12,287	21,822	34,109
2018–19	95,043	74,127	1,69,170	11,623	19,069	30,692
2019–20	1,11,444	91,106	2,02,550	9,043	14,891	23,934

Source: Data collected from All India Survey on Higher Education Report; AISHA Portal (<https://aishe.gov.in/aishe/gotoAisheReports>)

Requirement, Depository with INFLIBNET (under clause 13.1).

If we compare the regulation of 2009 with 2016, eight clauses were almost similar in both of them as mentioned above. The important point UGC has append in 2016 regulation is that they have mandated institutions (under

clause 9.5) to check the thesis/dissertation with appropriate software to detect plagiarism. It has also been mandated for submission of an undertaking and certificate from research scholar and his supervisor respectively attesting to the originality of the work. A research advisory committee was introduced (under clause 8.2) to periodically review and assist the research

Table 2: Role of UGC in Preventing Academic Misconduct Including Plagiarism

Subject of regulation	Issue date	Key suggestion	Impact
UGC (Minimum standards and Procedure for award of MPhil/PhD Degrees) Regulation 2009	1 June 2009	Mandatory to submit an electronic copy of the Thesis/Dissertation to the INFLIBNET (UGC, 2009)	Researchers can know what's type of research has already been done in their respective subjects. This would overcome serious problem of duplication and repetition of research.
UGC (Minimum Standards and Procedures for awards of MPhil/PhD Degrees) regulation, 2016	5 May 2016	Study of 'Research Ethics' as prerequisite course work under clause 7.2Mandatory to evaluate thesis with appropriate software to detect plagiarism and academic dishonesty under clause 9.5	Plagiarism check mandated.
UGC (Promotion of Academic Integrity and Prevention of Plagiarism in Higher Educational Institutions) regulations 2018	23 July 2018	Develop a system to detect and prevent plagiarism: awareness programmes, training workshops, DAIP, IAIP, Levels	Specific criteria fixed for acceptance of plagiarism level and various penalties imposed for similarities beyond 10%.
UGC Public Notice on Academic Integrity, 2019	14 June 2019	Publication/participation in UGC referred Journals and conferences to prevent academic misconduct including plagiarism	Publications only in 'UGC CARE-Reference List of quality Journals' will be considered for academic credits (UGC, 2019a).
Committee on 'Promoting and Improving the Quality of Research in Indian Universities/colleges' 2019	31 July 2019	Awareness programmes on research ethics and developing writing skills (paraphrasing, citing and referring)	
Distribution of Plagiarism Detection Software (PDS) to all universities free of cost	2 August 2019	Free access to PDS to all universities (UGC, 2019c)	All academic institutions will check for plagiarism free of cost before submission.
UGC Public Notice on 'Self-Plagiarism' 2020	20 April 2020	Reproduction/text-recycling of one's own work is not acceptable (UGC, 2020b)	Reproduction of one's own work is considered plagiarism as well.

Source: UGC website and UGC's Role in Curbing Plagiarism (Ashok Kumar, 2020, p. 4)

work, further preventing other forms of academic misconduct. A new area of 'Research Ethics' was also incorporated in the prerequisite Course work (under clause 7.2).

During the year 2018, UGC again introduced an extremely significant regulation for promoting academic integrity and preventing plagiarism in higher educational institutions. The regulation defines plagiarism and the means to deal with it. It lays special emphasis on the necessity for academicians engaging in any research or academic writing to be more aware and responsible for integrity-driven conduct. HIEs were instructed to frequently conduct sensitisation seminars to promote

academic integrity and awareness programmes for prevention of misconduct including plagiarism. The major highlight of the regulation was the establishment of two authorised bodies under the institutional mechanism named as Departmental Academic Integrity Panel (DAIP) and Institutional Academic Integrity Panel (IAIP) to deal with investigation/detection of plagiarism and punishment thereafter in accordance with the regulation (Rana and Joy, 2019). The guidelines in regulation further quantify the degree of plagiarism as four Levels based on the percentage of the plagiarised content (Table 3) and according to the level, students or researchers submitting their script face penalty (Dinesh, 2018).

Table 3: Levels of Plagiarism and Its Penalties

Level of plagiarism	% of plagiarism	Penalty for thesis/dissertation	Penalty for academic/research publication
Level 1	Similarities up to 10%	No Penalty	No Penalty
Level 2	Similarities above 10–40%	Re-submission of revised script within 6 months.	Withdrawal of the manuscript
Level 3	Similarities above 40–60%	Candidate will be debarred from submitting a revised script for one year	Withdrawal of manuscript; deduction of one annual increment; cannot supervise scholar/student for two years.
Level 4	Similarities above 60%	Candidate's registration for that programme will be cancelled.	Withdrawal of manuscript; deduction of two successive annual increments; cannot supervise student/scholar for three years (UGC, 2018).

Source: UGC (Promotion of Academic Integrity and Prevention of Plagiarism in Higher Educational Institutions) Regulations, 2018 (<https://www.ugc.ac.in>)

Along with regulations mentioned above, UGC has also issued public notices at regular intervals to protect the research integrity by prevention of academic misconduct including plagiarism. In June 2019, the 'Notice on Academic Integrity' addressed the unethical practice of publishing in predatory and dubious journals. Such journals literally publish anything for small fees leading to 'play and publish trash' culture. For this purpose, UGC has set up Consortium for Academic Research and Ethics (CARE) to maintain a reference list of quality journals across all disciplines that is updated quarterly and available on the UGC-CARE website. It further instructed HIEs that research publications only in the journals indexed in UGC-CARE list will be considered for academic credits. In August 2019, UGC issued a notice instructing INFLIBNET to provide plagiarism detection software named Ouriginal (formally Urkund) to all universities free of cost, so that plagiarised work does not acquire any credibility or value in evaluation. In continuation of its initiative a public notice on 'Self-Plagiarism' is an interesting addition which means reproduction of one's own previously published work without adequate citation and proper acknowledgement is also an act of plagiarism and is not acceptable at any cost.

From the above discussion, it is inferred that UGC has instituted various measures from time to time to uphold integrity and to ensure credibility and quality in academic research. It leave no stones unturned in its efforts to

curb plagiarism among Indian academic community. Being the key stakeholder of Higher education institutions, UGC continuously aims to promote Indian research among the leading nations.

Role of INFLIBNET in Preventing Academic Misconduct Including Plagiarism

INFLIBNET which is an autonomous centre of the UGC set in 1956. The centre works as a nodal agency for networking university libraries and information centres to promote scholarly communication among academicians and researchers across the country. The centre on behalf of UGC has taken several initiatives for the betterment of academic research in India in Table 4.

FINDINGS

ShodhGanga

ShodhGanga is the national open-access digital repository of Indian Electronic Theses and Dissertations (ETDs) established by the INFLIBNET Centre in accordance with the provisions of UGC Regulations, 2009 and 2016. The initiative not only ensure easy access but will also help in archiving Indian doctoral theses under a single umbrella. The increased visibility of ETDs available to read and to download through open access repository to the academic community worldwide would

Table 4: Initiatives taken by INFLIBNET in Accordance with UGC's Guidelines/Regulations

Name of the scheme	Establishment year	Impact	Benefit
ShodhGanga	2011	Open access repositories would act as a deterrent to plagiarism.	Rise in the quality and standard of research by preventing duplication and repetition.
ShodhGangotri	2011	Reveal the Indian research in progress.	Helps to find out undiscovered/unexplored areas of research.
ShodhShuddhi	21 September 2019	Free access to PDS (Plagiarism Detection Software) to all universities (UGC, 2019c).	Use of software to detect plagiarism in research work before submission.

Source: <https://shodhganga.inflibnet.ac.in/> and <https://shodhshuddhi.inflibnet.ac.in/>

further act as a deterrent to plagiarism and eventually help in raising the standard and quality of Indian academic research. Overtime, it has become a national asset that acts as a reservoir of Indian intellectual output.

From Table 5, it is inferred that as of December 2021 the figure of uploaded theses is around 3.3 lakhs. University of Madras has uploaded 13,030 theses which is the highest among any university followed by University of Calcutta with contribution of 12,609 theses (ShodhGanga 2021). Out of the total 3,31,352 theses, 96,046 (29%) are uploaded by top 10 universities only. Around 429 (41%) universities, out of total 1,043 have not even signed MOU with INFLIBNET till now. Out of the total, only 614 (58.8%) universities have signed MOU, among them 114 (18.5%) universities are still not uploading theses of their research scholars on ShodhGanga repository.

ShodhGangotri

Under this initiative of INFLIBNET research scholars and supervisors in universities are instructed to deposit

electronic version of approved synopsis and research proposals to ShodhGangotri repository submitted by research scholars for registering themselves in the PhD programmes. The repository not only reveal the trends and directions of research being conducted in Indian universities but will also help in avoiding duplication/repetition of research. Synopsis in ShodhGangotri would later be mapped to full text thesis through a direct link, once submitted in ShodhGanga.

From Table 6, it is inferred that total 8,395 synopses have been uploaded to repository as of December 2021. The highest quantity of synopses (3,497) is uploaded by Shri Jagdishprasad Jhabarmal Tiberwala University followed by Swami Ramanand Treeth Marathwada University with 1,146 contributions (ShodhGangotri 2021). Out of the total 8,395 synopses 7,047 (83.9%) are uploaded by top 10 universities only. It is also found that only 91 (8.72%) universities are actively contributing whereas majority of Indian universities 946 (90.6%) out of total 1,043 are not uploading their students synopsis to ShodhGangotri. Thus the repository does not present

Table 5: ShodhGanga Repository

Scheme	Total universities	Universities signed MOU	Contributing universities	Total theses (December 2021)
ShodhGanga	1043	614	500	3,31,352

Source: <https://shodhganga.inflibnet.ac.in/>

Table 6: ShodhGangotri Repository

Scheme	Total universities	Universities signed MOU	Contributing universities	Total synopses (December 2021)
SodhGangotri	1,043	97	91	8,395

Source: <https://shodhgangotri.inflibnet.ac.in/>

the comprehensive picture of ongoing research in Indian universities which may lead to repetition or duplication of research and other forms of academic misconduct.

Thus the current status of these two initiatives is not satisfactory at all. Universities are submitting their theses/dissertations and synopses voluntarily due to lack of any strict order and supervision regarding submission.

ShodhShuddhi

INFLIBNET centre under ShodhShuddhi programme is providing plagiarism detection software to all universities and institutions for free. For this purpose, INFLIBNET has subscribed to web-based anti-plagiarism software named Ouriginal (formally known as Urkund) which is acquired by Turnitin on 30 November 2021. The use of anti-plagiarism software boosted universities to easily detect plagiarism in academic research, thus enhance the quality of research in universities.

From Table 7, it is inferred that out of total 1,043 universities, 1,026 (98%) universities have been provided with Ouriginal (PDS) under SodhSudhi programme as of December 2021. It is also found that more than 17 lakh documents have been submitted for plagiarism check in PDS/ShodhShuddhi by 1.21 lakh users of member institutions till now. With numbers growing continuously the programme turning out to be a great success.

Strategic Role of Libraries in Preventing Academic Misconduct Including Plagiarism

In universities, plagiarism has been identified as a strong deterrent to academic integrity and honesty. Looking at the increasing instances of plagiarism and its grave consequences on knowledge and intellectual property, a quick remedy against this new emerging trend is

required (Idiegbeyan-ose, 2018). A library occupies an important place in academic institutions as their use for reading and reference is an integral part of learning and research. Libraries help in facilitating research by providing research-related documents that assist in completing the research. Banting *et al.* (2008) also noted that a good library and information services are essential ingredient for conducting successful research. According to Gibson and Chester-Fangman (2011), the task of dealing with the problem of plagiarism would require the involvement of all stakeholders though library has a pivotal role to play. The role of libraries involves acquiring, processing, preserving, retrieving and disseminating resources. These resources (documents) are the intellectual property of the authors, hence belong to the individuals who created them. Plagiarism negates the protection of intellectual property rights. Hence it poses a great challenge to libraries in safeguarding against intellectual stealing. Chauhan (2017) stated that libraries by virtue of their assigned and inherited functions have a strategic role to play in curbing plagiarism. Burke (2004) suggested that while dealing with plagiarism libraries should not only be concerned with detection, they also need to take proactive measures to prevent occurring plagiarism. Preventive measures include informing, guiding and helping the researchers to stay away from the menace called plagiarism.

Specifically libraries can take following steps in detecting and deterring plagiarism.

Plagiarism Awareness Campaign

Lack of proper knowledge and understanding about what constitutes plagiarism and its related notions is one of the major causes for people indulging in act of plagiarism unintentionally. Hence, librarians can play a key role in creating awareness among users. Libraries can organise orientation and awareness programmes educating users

Table 7: ShodhShuddhi Programme

Total universities	Beneficiary universities	Total users	Total documents submitted (December 2021)
1,043	1,026	1,21,160	17,55,961

Source: <https://shodhshuddhi.inflibnet.ac.in/>

about plagiarism, its types and its grave consequences to discourage them committing such offence. Obied (2017) with the help of her intervention model confirmed that providing students with explicit knowledge about plagiarism and how to avoid it appears to be an effective technique for reducing academic dishonesty. Libraries can also use other platforms such as social media, institute website, library portals for constant awareness campaigns.

Training and Skill Development Workshops

Most of the students and new research scholars are unaware about the rules of ethical writing. Libraries should frequently conduct sound training and skill development workshop on how to make reference, how to cite the documents, how to paraphrase, etc. These inputs will help researchers to produce original work free from plagiarism, thereby encouraging integrity and honesty in academic community.

Collaboration with Faculty

The libraries should collaborate with faculty members to ensure that students are taught about plagiarism at every single stage of learning and research. A systematic and concerted effort involving all the faculty members and staff can go a long way in reducing the scourge of plagiarism over a period of time.

Counselling

Regulatory guidelines and plagiarism detection software do not fulfil the main objective of the campaign against plagiarism. These measures help only to control and detect plagiarism but does little to promote integrity and morality within an individual. Sometimes researchers plagiarise intentionally for material gains and instantaneous recognition. Therefore libraries should strive to inculcate higher morality and ethics through sensitisation lectures, seminars, conferences for students, researchers and faculty members

Suggestions

On the basis of above discussions following suggestions are presented:

- UGC must ensure the strict and uniform implementation of all the regulations/policies at ground level by supervising concerned authorities at regular intervals.
- UGC must ensure to change/amend certain parameters of assessment of research output (e.g. API: that lay undue emphasis on quantity over quality) to deal with the issue of plagiarism.
- All the universities must acquire plagiarism detection software and should make its use mandatory for evaluation of research work.
- Libraries should seriously take the responsibility of providing guidance to users at all levels, training them about proper citation methods, referencing styles and paraphrasing techniques rather than using software only to spot cheaters.
- Libraries should create awareness and educate users about research ethics, plagiarism, its repercussions on the offenders, its adverse effects on academic honesty and integrity. Such efforts may significantly reduce instances of plagiarism overtime.

CONCLUSION

Plagiarism has become huge challenge for sustaining integrity and honesty in India's academic research. It negatively effects all from researchers to supervisors, faculty members, institution and society. Different studies have identified several reasons for rise of academic misconduct including plagiarism in higher education institutions. Some researches state that this is due to ignorance, poor knowledge, lack of proper awareness, rather than intentional cheating. Others explain that plagiarism is sometimes intentional due increased pressure and competitiveness, poor infrastructure and inadequate funding. The above study reveals that UGC being the apex governing body in collaboration with INFLIBNET, is taking appropriate preventive measures at regular intervals for improving the quality of research in Indian universities by curbing plagiarism. The study has been able to address the

current status of various initiatives/schemes started so far by UGC and INFLIBNET as not completely satisfactory. The study also reveals that these different schemes, regulation and guidelines have their limitations and fall short in fulfilling the main objective of the whole campaign against plagiarism that is encouraging academic integrity and honesty rather than detection only. It is found that the act of plagiarising is entirely related to individual's morality and ethics, hence it is better to educate research scholars with intricate knowledge about what constitutes plagiarism and how to avoid it. Libraries by virtue of their assigned and inherited functions can take the responsibility of rising awareness about the issue through sensitisation seminars/conferences, sound training and skill development workshops. However, for the campaign of improving the quality of academic research to be more effective, the process of grooming young future scholars with higher morality and ethics has to begin a lot earlier so that the Indian academic community can match global standards of academic integrity, honesty and excellence.

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How to cite this article: Kumar A and Srivastava A, 2021. Plagiarism: Role of UGC, INFLIBNET and Libraries in Encouraging Integrity and Quality of Academic Research in India. *JIM - Journal of Information Management*, Vol. 8, No. 2, pp. 91-106.

New Directions for Libraries and Library Professionals during COVID-19 Lockdown Period

Santosh Kumar Tunga

Associate Librarian, Rishi Bankim Chandra Evening College Naihati, West Bengal, India

Email id: tungask@rediffmail.com

Received: 07-07-2021; Accepted: 10-12-2021

ABSTRACT

The outbreak of the COVID-19 pandemic made a dangerous impact on the whole world. Due to this pandemic and to minimise the losses, most of the educational institutions including their libraries switched to the virtual and offered online services with help of information and communication technology. Academic libraries were directly affected by the corona virus not only in physical space but also in the library resources and services they provide to their library users. In this context, the use of digital resources and services permits the library not only to save space of library and time of the users in Covid-19 pandemic lockdown period. Everyone can access digital resources and digital information remotely anywhere at any time without human contact. Now web-based digital resources have become the most popular tools in the pandemic environment. The main objective of this paper is to make an attempt to create awareness among library professionals and library users about the impact of Covid-19 lockdown on libraries, strategies for library reopening and various library digital and online services during pandemic period. The author presents his opinion on how to save the library users, library staff and library resources in the present lockdown period and specifies the role of library professionals during this pandemic situation.

Keywords: COVID-19, Digital literacy, Digital resources, Library professionals, Libraries

INTRODUCTION

The present world is facing health hazards due to the novel corona virus, which leads to pandemic lockdown all over the world. All the activities of organisations are suspended. But with the help of digital technologies, almost all these organisations have regained their activities back to normal. The universities, research institutions and their libraries have played a challenging role in providing the required information to their library users through digital/online platform. Students and also academicians got benefited by delivering and learning electronic course content through the use of information and communication technology (ICT) and World Wide

Web (WWW). Most of the libraries has offered remote access services to all the subscribed scholarly content during the national lockdown period. In this context Fernandez (2020) have emphasised the Covid-19 situation in libraries as service organisations for delivering online services in context with remote access as e-books and other digital resources can be accessed by the users and libraries have an opportunity to reinvent work and help their users adapt to these changes. Thus the role of library professionals needs to be reassured in terms of the availability of library e-resources in the best possible ways in helping the library users and to satisfy every type of learning-based challenges during pandemic environment.

The academic library environment is in a state of transition in terms of library resources and library users. Many information resources once available only in print are now available in CD-ROM, digital and online resources. The observed transition is apparently necessitated by the emergence of modern ICT and its unprecedented impacts on the provision of digital library services during this COVID-19 pandemic lockdown situation. Libraries of all sizes and types are embracing digital resources, although most of the libraries will continue to offer both print and digital resources for many years to come. Use of digital resources and services permits the library not only to save space of library and time of the users, but also is more significant in COVID-19 pandemic period. Everyone can access digital resources and digital information remotely anywhere at any time. Now web-based digital resources have become the most popular tools in pandemic environment. The door to libraries is becoming a gateway to global digital environment due to the pandemic lockdown period. There has been a boom in digital resources and digital services across the world particularly the academic library domain which significantly adds to the wealth of digital information. Library web page should extend update regularly in order to provide information related to highlight the online access points and any virtual supports, digital and online services being offered as it is the only way to assist the patrons.

RESEARCH QUESTIONS

- Is there any awareness about the impact of COVID-19 lockdown on libraries?
- What types of measures are adopted by the libraries during COVID-19 pandemic?
- Which strategies are adopted at the time of library reopening?
- What types of library services are offered during the pandemic situation?
- What are the roles of libraries and library professionals in lockdown period?

OBJECTIVES OF THE STUDY

The following objectives are evolved for the purpose of the present study:

- To identify the impact of COVID-19 lockdown on libraries
- To discuss the initiatives adopted by the libraries during COVID-19 pandemic
- To find out the strategies for the arrangement of library reopening
- To determine the library services during COVID-19 lockdown period
- To identify the role of libraries and library professionals during pandemic situation
- To build up some recommendations for library professionals.

METHODOLOGY

All the related and relevant information on challenges and opportunities faced by the libraries and library professionals during the lockdown in India various national and international webinars. Some of the topics are: 'COVID-19: response of libraries', 'Libraries: challenges and strategies for post COVID-19 pandemic', 'post COVID-19: challenges and opportunities of libraries and library professionals', and 'reengineering of libraries in COVID-19'. Besides this, the virtual library tours to various academic and research institutions' library websites were also made to collect the required information. A few past studies were also reviewed for this study. Relevant literature search through Google search engine was conducted from January to March 2021. Appropriate keywords were used to find the required information and those keywords are: COVID-19 pandemic, digital literacy (DL), digital resources, digital library services to provide library services during and post-pandemic conditions, existing guidelines for reopening libraries, existing strategies for COVID-19 and how to conduct academic libraries during and post-pandemic situation.

IMPACT OF COVID-19 LOCKDOWN ON LIBRARIES

The outbreak of the COVID-19 pandemic made a dangerous impact on the whole world. Due to this pandemic and to minimise the losses, most of the educational institutions including their libraries switched to the virtual and offered online services with help of information and communication technology. Lobo and Dhuri (2021) showed the positive influence of Covid-19 pandemic in moulding librarians into tech-savvy library professionals in enhancing their digital knowledge and in upliftment of their IT skills. They also highlighted the importance of having knowledge of E-databases and E-resources in satisfying the needs of the users in the Covid-19 pandemic period. Academic libraries were directly affected by the corona virus not only in physical space but also in the library resources and services they provide to their library users. In this context Asif and Singh (2020) brought out the opportunity to learn recent technological advancements in order to maximise the usage of library resources and services in worldwide lockdown and pandemic situations prevailing in the country. The whole emphasis of the library professionals should have on the comprehensive online support to the patrons' activities like research, teaching, learning, digital and online resources supply in lockdown period. The following impacts of COVID-19 lockdown on libraries are as follows:

- Changing our academic environment/system
- Online class/online webinars/online workshops/online meetings/online quizzes are occurring frequently
- Introducing mobile learning as new learning and teaching system
- Sharing subscribed or open e-resources through own library web pages or social media like library WhatsApp group, Facebook etc.
- Increasing access and use of e-resources/digital materials
- Developing digital library infrastructure, online research support services and single-window search of library resources
- Following the health guidelines of Local body/State/Ministry of Health

COVID-19 SHAPING LIBRARIES IN NEW WAYS

All libraries must follow the safety procedures as per governmental decisions and operate virtually through their library web pages. Library web page should update regularly in order to provide related information, should highlight the online access points and any virtual supports, digital and online services being offered since it is the only way to assist the patrons. In this context, Babbar and Sukula (2020) highlighted the various perspectives and support systems in academic libraries. How remote access based services can be fruitful, has been deliberated with the example of JNU library, along with other significant current challenges and solutions. Fernandez (2020) emphasised the Covid-19 situation in libraries as service organisations for delivering online services in context with remote access as e-books and other digital resources can be accessed by the users and libraries have an opportunity to reinvent work and help their users adapt to these changes. Based on the information collected from various websites and conferences as mentioned in Methodology part, following views on COVID-19 shaping libraries in new ways are offered

- Book sanitisation machine, thermal screening, masks, hand wash, soap, wipes, face shield etc. to be used consistently
- Social distancing, isolation, and keeping safe
- Promoting hygiene in the library
- Tailored and innovative library services to be introduced
- Highlighting the online access points in library web pages

- Hybrid mode of library services = print and e-resource library materials to be continued
- The whole emphasis of the librarians should be on the comprehensive digital and online support to their patrons' activities.

PREPARATION FOR LIBRARY REOPENING

Mestri (2020) has suggested different strategies, methods of operation into four different levels based on the number of COVID 19 cases. He extended his views with how to protect the clientele, the staff and the library resources in different types of situations. In this connection Tunga (2021) provided an overview of preventive measures and current trends in libraries to play proactive role in the present and post-pandemic situation. Integrated pandemic prevention practices can lead the academic library to provide a delightful reopening experience for all its stakeholders. The author provides some following strategies for the preparation for library reopening after covid-19 pandemic lockdown situation:

- Physical distancing measures awareness among library staff and library users, floor marking, and separate entrance: entry and exist
- Safe handling of physical library materials with wearing hand gloves
- Use regularly sanitisers, mask, hand wash, soap, wipes and face shield
- Leg operated hand sanitiser should be used at entrance of the library and entry without face mask no one should be allowed.
- Sanitising objects, documents, library furniture and surfaces.
- Wherever possible, promoting self-check in and self-check out
- Library fine may be waived off so that library professionals do not come into contact with currency or plastic money
- Following the health guidelines of Local Body like Panchayat, Municipality, Corporation; State health

Ministry and Ministry of Health & Family Welfare, Government of India.

- Start building a culture of virtual interaction among library staff and library users
- All returned books to be put in quarantine box or quarantine area for 48-72 hours, to be kept day-wise separately. After that these should be shelved in main collection.
- Cleaning regularly the library floor, door nocks, switch board, computer, DVD, CD-ROM, Keyboard before closing library
- Maintaining distance between tables and chairs in seating arrangement of reading area and reference section with

LIBRARY SERVICES DURING COVID-19 LOCKDOWN PERIOD

Use of digital resources and services permits the library not only to save space of library and time of the users, but also is now more significant in COVID-19 pandemic period. Everyone should access digital resources and digital information remotely anywhere at any time. Now web-based digital resources have become most popular tools in pandemic environment. In this context Bhat (2019) has compared remote access facilities provided by various softwares such as EZproxy and RemoteXs in context with remote access to e-resources which has supported the core-academic research activities. The author shares the following views on library services during COVID-19 lockdown period:

Digital Literacy

The term DL is increasingly being used to describe new competencies that equips individuals with the confidence and ability to effectively use digital devices and the internet to find, assess, generate new information and communicate it to others (Zwimpfer, n.d.). Library users should have sufficient DL to access and use of the digital resources. The following measures to be taken to DL among library users in this context:

Training on Awareness Programme for Library Users

- Digital library orientation (DLO) and virtual library orientation (VLO)
- Information about the availability of subscribed and open/free digital resources
- Organising online programme on the use of available online/digital resources
- Conducting online workshop and awareness programme on specially e-books and e-journals
- Creating culture of virtual interaction among library users and library staff
- Developing virtual reference desk/service
- Creating and developing Information literacy programme on mobile library system, media literacy, digital library, virtual information system, e-learning system etc.

Training and Awareness Programme on the utilisation of Social Media

- Organizing awareness programmes on different important social media like Blog, Face book, LinkedIn, Twitter, Whatsapp, YouTube etc.
- Virtual visits from YouTube
- Video chat (after prior appointment of library authority)

Training and Awareness Programme for Library Staff

- Equipped with digital devices/connectivity
- Creating skilled manpower- shifting from print to digital version
- Information technology support tools
- Adaptation of technical knowhow

Developing Suitable Training Modules for Library Staff

- Training for suitable metadata creation
- Training for public relation or outreach activities
- Training for module for ICT curriculum

Organise General Awareness Programme on Research Guide

- Preparation process of research publications
- Preparation your manuscripts for publication in top quality journals
- Use of different citation/reference styles such as APA, MLA, Chicago Manual etc.
- Research methodology - tools and techniques
- Author profile creation like Google Scholar, ORCID, Researcher ID, Scopus Author ID and Vidwan ID
- Connecting with the research community like Academia.edu, IRINS, Vidwan, LinkedIn, Research Gate etc.
- Workshop on author impact tools like h-index, i10-index provided by Scopus, web of Science, Google Scholar) and altmetrics etc.
- Orientation about plagiarism and evaluation of similarity reports
- Creating awareness and interest on copyright issues with respect to Indian CopyRight Act, 1957.

Digital Resources

Digital resources mean any electronic product that delivers the collections of data be in text, numerical, graphical or time based and a kind of documents in digital formats which are made available to library users through computer based information retrieval system. Digital resources proved its importance in absence of printed resources during COVID-19 pandemic lockdown situation in India. Therefore, the following

initiatives taken by any library will help to ensure the use of sufficient digital resources in different subjects for students, teachers and research scholars:

- Displaying the list of subscribed and also open/free digital resources in library or institution home page.
- Displaying the institutional repository in library website
- Providing all available open access resources to their Whatsapp group for library users created during this lockdown period.
- Introducing library online public access catalogue (OPAC) facility
- Arranging off-campus access to existing library resources
- Creating single-window search facility of all library resources
- Starting library user alert services through e-mail, SMS, Whatsapp, Blog etc.
- Enabling access of digital library resources 24 × 7 at desktop

Digital Services

The following digital information services or digital services should offer to the library users by the libraries during COVID-19 lockdown period:

- Online quiz for library users on digital resources
- E-journals/E-books display, virtual exhibition and virtual book display
- Display ‘Small Online Manual (SOM)’ for library catalogue/OPAC
- Creating ‘E-resource Guide’, ‘Online Library Guide’
- Electronic document delivery services
- Online current awareness service (CAS)
- Introducing ‘Dial Your Library’ (DYL) or ‘Digital Reference Service’—any library can provide information search service over phone, mobile, web,

social media and SMS to its library users by creating kind of helpline.

- Providing ‘Ask A Librarian’ (AAL), ‘Electronic Document Delivery Service’ (EDDS), ‘Subject Expert-Question & Answer’ (Q&A), ‘E-mail Alert’ services.

ROLE OF LIBRARIES AND LIBRARY PROFESSIONALS

Libraries and library professionals should provide access to the various types of digital resources and information providing universally accessibility to their library users as per requirements, which are either subscribed digital resources or freely available on web resources. In this context Vaidya and Ali (2021) have pointed out that the quantitative and qualitative analysis resulted in increased understanding of hardships faced by librarians due to pandemic and highlighted their practices during and after the national lockdown. Librarians are encouraging their staff to reduce the workload of their staff, sharpen their skills through virtual training, and motivate them through various online orientation programmes. Bhati and Kumar (2020) in their research paper “Role of Library Professionals in a Pandemic Situation like COVID-19” - described the different roles played by librarians during COVID 19 pandemic. The study identified various digital platforms available around the globe. The study also promoted the use of various social media networks available for librarians. Dhar (2010) highlighted the new and future role of library professionals in electronic information environment, impact of information technology on the job and work performance of library professionals, benefits of the Internet for library professionals, new and core skills required to be learned by information professional measures to cope up with the challenges.

In order to serve optimise online library resources, facilities and services author share his views on the role of libraries and library professionals during COVID-19 lockdown period as follows:

- Manage all types of latest digital library resources, services and facilities
- Organise knowledge and information to serve the need of their library users
- Remote access to library resources should start by the library
- Making library resources available through library website should be hosted more so that library patrons can get their required library resources through library websites
- Support information literacy, e-learning system and digital library
- Create library 'Mobile App', 'E-Read App', 'Researcher App' etc.
- Conduct online workshop on open access initiative, digital resources and publishing process
- Organise workshop on how to write and get it published in quality academic journals and books.
- Develop internet-based service on 'E-resource Guide', 'Subject Guide', 'Library Guide' etc.
- Create online awareness about benefit of digital, online and open access resources to all stockholders
- Awareness about predatory publishing and the concept of plagiarism
- Organise virtual smart room with document readers, virtual talk show, virtual book display, virtual self-browsing, virtual reference and current awareness service
- Creation of researcher profile or citation profile of faculty setting up of article online alert facilities.

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RECOMMENDATIONS

Vaidya and Ali (2021) has recommended that all the services must design in such a manner, so that library users can avail the services in traditional as well as virtual manner. For implementing this, library professionals need to be technically sound with adaptive personality. Secondly, it is highly advisable to keep and maintain a special fund like Disaster Recovery Fund within the library's budget every year, so that this fund gets cumulated every year and whenever any type of disaster occurs, this fund can be utilised to bring back the normal situation and delivers uninterrupted library services to their users. Mestri (2020) mentioned the challenges and suggested recommendations for the libraries during post lock down period. He has also suggested revising the library rules based on the recommendations and the level of the intensity of the pandemic. The author provides the following suggested recommendations for libraries during COVID-19 pandemic lockdown period:

- Libraries must have a plan for how to deal with COVID-19 pandemic situation, there will be restrictions everyone and library safety should be top priority.
- Developing the system of overall collection development of digital and online resources and providing access through remote without human contact.
- Promote maximum use of digital and online resources and stress on the digital and online library services.
- There will be requirement to change the library policy, rules and regulation, to make sure that every user, staff and library resources should be safe in the library.
- Physical distancing must be maintained in the book issue/return time, at any place, on the way or at the residence of the member or in the library.
- Library users and library staff should strictly follow the basic hygiene measures like washing hands with

water and soap, avoiding touching the face, using face mask and hand gloves.

- Library professionals should be proficient, possessing up-to-date knowledge of the newest advancement in technology and web-based applications to make the best use in providing quality digital and online services to the library users as per demand.
- Library web pages of any library should update regularly in order to provide information related to highlight the online access points and any virtual supports, digital and online services being offered as it is the only way to assist the patrons.

CONCLUSION

The changing scenario of libraries is an outcome of present pandemic Covid-19 situation and the entire way of library services has been altered due to non-contact kind of facilitation to users were suggested by Fernandez (2020). In this context there will be requirement to change the library policy, rules and regulations, to make sure that every library user and the library resources should be safe in the library. In this connection, Tunga (2021) pointed out that Library staff and all the stakeholders shall have a general understanding of the pandemic. Academic librarians can lead all the safety protocols, policies, getting in touch with the latest updates about the pandemic, disinfection practices in the library. Most of the libraries in India have closed down with the assumption that the COVID 19 pandemic chain will break and slow down or come under control (Mestri, 2020). In future the present state and also the central government will provide guidelines and strategies for reopening the libraries after COVID-19 pandemic situation. The unique strategy will not be helpful to all libraries for a vast country like India. Hence the author has described the impact of COVID-19 lockdown on libraries, different strategies for the preparation for library reopening and library services during COVID-19 pandemic. He has drawn attention towards the COVID-19 shaping libraries in new ways and provides suggested recommendations for libraries.

ACKNOWLEDGEMENT

The author would like to extend his sincere thanks and deep gratitude to various web resources and also the authors of those web resources used to prepare this article. The author also expresses his heart-felt thanks to library authority of library web pages of Central and State universities, IITs and NITs who had directly or indirectly helped to successfully carrying out this research work.

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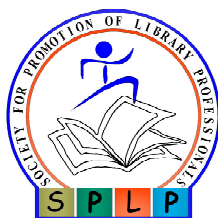
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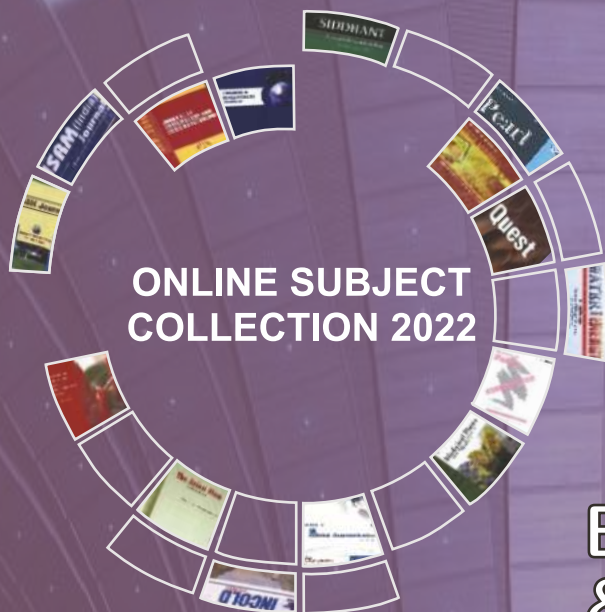
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