

Usage Pattern of Institutional Repositories for Scholarly Communication by Academician in Maharashtra

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Abstract

This research study aims to study the awareness and use of institutional repositories by the academicians in Maharashtra. The academicians include different categories of users, viz., Professor, Associate Professor and Assistant Professor, Scientists, Senior Scientists, Research Scholars and Post-Doctorate Fellows of the selected institutions. A total of 1021 questionnaires were distributed, and the total response of 584 responses have been used for analysis purpose, and it comprises a total response rate of 12.67% of the total population of 4611. The study outcomes show that majority of the users from Arts and Humanities, Social Sciences and Pure Science discipline prefer to publish their research in open access journals and self-archive in institutional repositories. The study found that the majority of the users prefer to use Journal articles, Research papers, Theses and Dissertation and conference proceedings. However, due to lack of knowledge of submission process a considerable percentage of users with mean value 3.88 and standard deviation 1.953 were not self-archiving in IR. The study recommends promotion of self-archiving by conducting seminars, workshops, and tutorials for the academicians.

Keywords: Scholarly Communication; Institutional Repository; Academic and Research Institution

1. INTRODUCTION

Scholarly Communication is “The means by which individuals engaged in academic research and creative endeavour inform their peers, formally or

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informally, of the work they are engaged in or have accomplished. This process includes not only the creation and dissemination of scholarly works but also evaluation of quality (peer review) and preservation for future use...(Reitz, 2004)". For scholarly communication, the most common way to make the research outputs available and accessible to the wider academic community is through the published articles in peer-reviewed journals. Johnson (2002) mentioned that the current system of scholarly communication limits, rather than expands, the readership and availability of most scholarly research. The increasing numbers and prices of journals faster than both the rate of inflation and the library budgets have made it impossible for the libraries to subscribe and made available even a tiny portion of the titles for their researchers.

However, with the advent of institutional repositories, there is a paradigm shift in scholarly communication. Institutional Repositories makes information flexible and accessible to support to the causes of the information requirements of the users for their academic and research work in a changing technological scenario. According to Clifford Lynch (2003), a university-based institutional repository is a set of services that a university offers to the members of its community for the management and dissemination of digital materials created by the institution and its community members.

2. REVIEW OF RELATED LITERATURE

A number of authors have expressed their observations or experiences on changing scenario of scholarly communication. Jain, Bentley and Oladiran (2009) commented that the success of institutional repositories influences the success of digital scholarships also. Park and Shim (2011) said, "Scholarly publishing plays a critical role in promotion, tenure, scholarly recognition, and certification of research quality at academic institutions." Shehata, Ellis and Foster (2015) discussed the acceptance of informal scholarly communication platforms and found that the researchers believe in informal publishing and dissemination, but traditional scholarly communication practices are inconsistent with these beliefs. Bergman (2006) said "commercial publishing and open access initiatives will continue to co-exist while new discipline-specific alternative scholarly communication models continue to emerge."

Ukwoma and Dike (2017) found that the main aim of IR establishment was to increase global visibility and reputation of institutional research publications, long-term preservation, enhance collaboration with colleagues, long-term preservation. The authors said that to enhance the self-archiving skills training should be organised for academics, librarians, and repository managers. Spezi, Fry, Creaser, Proberts and White (2013) has reported the findings of the behavioural strand of the PEER project and said that the self-archiving behaviour of users varies depending upon discipline and the attitudes towards open-access to published articles varies depending upon the type of user, i.e. author or reader. Sawant (2012) surveyed users' experience, contribution and opinions regarding

institutional repositories. The findings revealed that 85.94 percent of respondents were aware of IR and out of that 25.94 percent of respondents had contributed to their respective IRs to communicate research results to peers. Moreover, 57.84 percent respondents consider submission in IR for long term preservation.

Creaser (2010) presented the survey results of UK higher education libraries. The researcher found that the traditional library system and publishing practices were influenced by open access publishing self-archiving. The result indicated that there are differences of opinion among disciplines. Pickton and McKnight (2008) interviewed 34 research students of Loughborough University to understand their experiences and views about open access publishing and IR of Loughborough University. The data revealed that students prefer to use ETDs, post-prints and conference papers of the IR and prefer to contribute contents mainly to communicate with the fellow researchers.

Watson (2007) studied the preferred mode of publishing, awareness, use of IR by the academic and researchers at Cranfield University. Embed project was developed to include the IR in the research process and motivate the authors to use and contribute to the IR. The study conducted by Swan and Brown (2005) showed that the academicians who do not have publications are aware of OA journals and less aware of self-archiving. The author also tried to find out the reasons for publishing or not publishing in OA journals considering different factors like publication fees, feedback from referees, feedback from readers, etc.

3. OBJECTIVES OF THE STUDY

1. To study the awareness of institutional repositories among the academic community;
2. To study the reason for using or non-using institutional repositories across discipline;
3. To find out the IR contents used by the academic community across discipline; and
4. To identify the problem faced by the academic community to use institutional repositories.

4. METHODOLOGY OF THE STUDY

The survey method has been applied to collect relevant data for the study. A total of nine academic and research institutions i.e. Indian Institute of Geomagnetism (IIGM), Mumbai, Indian Institute of Technology (IITB), Mumbai, Indira Gandhi Institute of Development Research (IGIDR), Mumbai, Tata Institute of Social Sciences (TISS), Mumbai, University of Mumbai (MU), Mumbai, National Chemical Laboratory (NCL), Pune, Gokhale Institute of Politics and Economics (GIPE), Pune, Inter-university Centre for Astronomy and Astrophysics (IUCAA), Pune and National Centre for Radio Astrophysics (NCRA), Pune from Maharashtra were selected for the study. The data has been collected by using

the questionnaire as a tool with the majority of scaled questions. The research population termed as academician includes Professor, Associate Professor and Assistant Professor, Scientists, Senior Scientists, Research Scholars and Post-Doctorate Fellows. A total of 1021 questionnaires were distributed, and a total of 584 responses have been used for analysis purpose, and it comprises a total response rate of 12.67% of the total population of 4611.

5. DATA ANALYSIS AND INTERPRETATION

5.1 Analysis based on the Response Rate of Institutions

The highest number of responses were received from IITB 175 (30%), followed by NCL 96 (16.4%) and GIPE 55 (9.4%). Very few responses were received or recorded from institutions like National Centre for Radio Astrophysics (NCRA), Pune; Indian Institute of Geomagnetism (IIGM), Mumbai; National Chemical Laboratory (NCL), Pune; and Inter-university Centre for Astronomy and Astrophysics (IUCAA), Pune which could be because of a smaller number of researchers, as these institutions are much specialised in one domain. However, some institutions are having a greater number of staffs and running multi-disciplinary courses, e.g. Indian Institute of Technology Bombay (IITB), Mumbai and Tata Institute of Social Science (TISS), Mumbai.

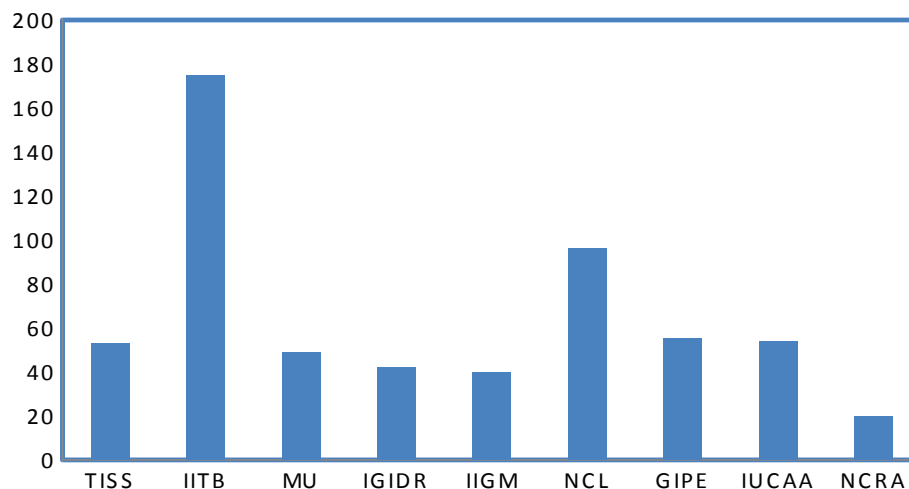


Fig. 1: Analysis based on the response rate of institutions

The number of responses varies discipline wise. Science & Technology has more responses 171 (29.3%) followed by Pure Science 165 (28.3%) and Social Science 157 (26.9%). Table 1 reveals that maximum responses were received from the Pure and Applied sciences discipline.

Table 1: Discipline-wise Distribution of Respondents

<i>Discipline</i>	<i>Frequency</i>	<i>Percent</i>	<i>Valid percent</i>	<i>Cumulative percent</i>
Pure Science	165	28.3	28.3	28.3
Science & Technology	171	29.3	29.3	57.5
Social Science	157	26.9	26.9	84.4
Arts & Humanities	71	12.2	12.2	96.6
Management	20	3.4	3.4	100.0
Total	584	100.0	100.0	

5.2 Publishing Tendency

With regard to the number of publications 246 (42.1%), respondents reported publishing 2-3 paper yearly. Of the respondents who reported publishing 2-3 papers yearly, 73 (12.5%) belong to the Pure Science discipline, followed by 71 (12.2%) from Social Science and 69 (11.8%) from Science & Technology discipline. However, concerning the information about yearly article publishing among the total 584, the majority of the respondents were from the Science & Technology discipline 171 (29.3%), 165 (28.3%) from Pure Science and 157 (26.9%) from Social Science. It can be inferred from the data that Pure Science researchers publish more research papers compared to Arts & Humanities and Social Science researchers. Therefore, it can be inferred that the number of research paper publications is influenced by discipline and pure and applied science researchers publish more papers.

Table 2: Discipline-wise Frequency of Research Publication

<i>Discipline</i>	<i>0-1</i>	<i>2-3</i>	<i>4-5</i>	<i>> 5</i>	<i>Total</i>
Pure Science	23(3.9)	73(12.5)	52(8.9)	17(2.9)	165(28.3)
Science and Technology	29(5.0)	69(11.8)	44(7.5)	29(5.0)	171(29.3)
Social Science	47(8.0)	71(12.2)	27(4.6)	12(2.1)	157(26.9)
Arts & Humanities	32(5.5)	25(4.3)	12(2.1)	2(0.3)	71(12.2)
Management	0(0.0)	8(1.4)	10(1.7)	2(0.3)	20(3.4)
Total	131(22.4)	246(42.1)	145(24.8)	62(10.6)	584(100)

5.4 Sources for Awareness about Institutional Repository

Figure 3 shows the sources by which the respondents became aware of the institutional repository. Multiple responses were permitted to get feedback from the academician.

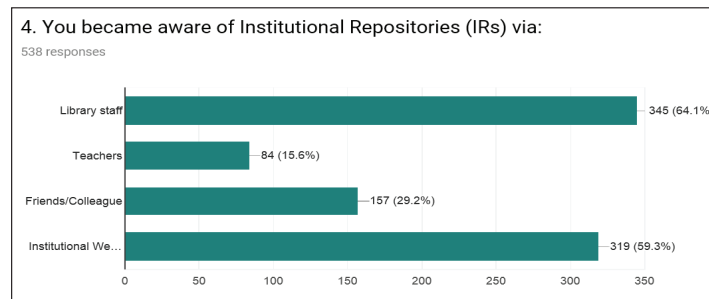


Fig. 3: Sources of Awareness about Institutional Repository

Among the total 584 respondents, majority, i.e. 64.1 percent of the respondents agreed that they become aware of the institutional repository through library staff. The institutional website appeared to be a significant source for familiarising academicians with the institutional repositories with a total of 59.3 percent of responses. Both formal and informal communication between the researchers is a valuable source of information. A high percentage of academicians 157 (29.2%) opined that they gained information about the institutional repositories through personal communication with their professional friends and colleagues. The study revealed that a small percentage of respondents considered teachers 84 (15.6%) as a source of awareness.

5.5 Experience with Self-archiving

Respondents were asked to indicate whether they have any previous experience of self-archiving. For this question, respondents were required to answer in the affirmative or negative. The results revealed that the majority of respondents, namely 332 (56.85%), have no previous experience of self-archiving before the survey and 252 (43.15%) have previous experience of self-archiving.

Table 4: Experience of Self-archiving

<i>Discipline</i>	<i>Yes</i>	<i>No</i>	<i>Total</i>
Pure Science	87(14.9)	78(13.4)	165(28.3)
Science & Technology	83(14.2)	88(15.1)	171(29.3)
Social Science	59(10.1)	98(16.8)	157(26.9)
Arts & Humanities	17(2.9)	54(9.2)	71(12.2)
Management	06(1.0)	14(2.4)	20(3.4)
Total	252(43.2)	332(56.8)	584(100)

It is evident from figure 4 presents that the experience of self-archiving varies discipline wise. A large number of respondents from Pure Science 87 (14.9%) followed by Science & Technology 83 (14.21%) have previous self-archiving experience. And the majority of the respondents of Social Science, Arts & Humanities and Management discipline didn't have any previous experience of archiving in institutional repositories.

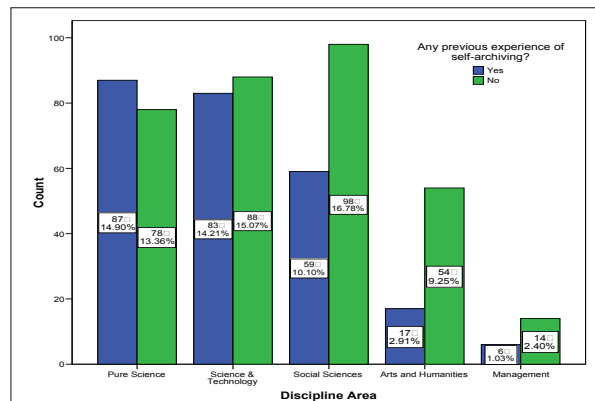


Fig. 4: Discipline-wise Experience of Self-archiving

5.6 Contribution in Institutional Repositories

Figure 5 presents the behaviour of the respondents to deposit/contribute their papers in the institutional repository. The majority of the respondents from Pure Science discipline 108 (18.49%) and 98 (16.78%) from Science & Technology are contributing to their institutional repository. If this is combined with figure 4, the respondents from Pure Science and Science & Technology discipline who have previous experience of self-archiving are contributing/ depositing in the institutional repository. Similarly, institutional repositories are not popular as a means to disseminate research work among the academicians and researchers from Arts & Humanities and Management discipline.

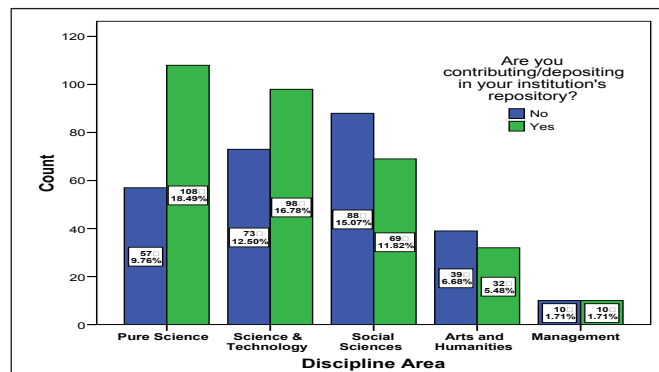


Fig. 5: Discipline-wise Contribution in the Institution's Repository

5.7 Reasons for self-archiving

Institutional repositories have facilitated the process of scholarly communication, thus provided an impetus to academicians to submit their research outputs into it. The study examined the major reasons for self-archiving contents in the institutional repository by the respondents. The response regarding the reasons for self-archiving in the institutional repository is given in Table 5.

Table 5: Reasons for Self-archiving

<i>Reasons for depositing in IR</i>	<i>Pure science</i>	<i>Science & technology</i>	<i>Social science</i>	<i>Arts & humanities</i>	<i>Management</i>	<i>Total</i>
Wider access and visibility to research output	4.35	4.26	4.38	4.43	4.21	4.33
The institutional repository would preserve my material	4.23	4.09	4.16	4.30	4.07	4.17
Communicating the results to peers	4.09	3.98	4.08	4.14	4.07	4.06
Mandatory submission by the institution	3.94	4.07	4.10	4.10	3.29	4.01
Gives me satisfaction	3.65	3.84	3.71	3.94	3.64	3.75
The publisher would not have exclusive rights to my work	3.50	3.54	3.48	3.96	3.07	3.55
I will get more citation if I post my article on institutional repository	3.42	3.48	3.43	3.62	2.86	3.44
5=Strongly agree, 4= Somewhat agree, 3= Neutral, 2= Somewhat disagree, 1= Strongly disagree						

Of the benefits mentioned, the majority of the respondents ($\bar{x}=4.33$) mentioned the 'access and visibility to a wider audience' as the main reason for the contribution of contents. The results show that the respondents who affirmed depositing in IR for 'wider access and visibility' highest percentage are among the Arts & Humanities ($\bar{x}=4.43$) followed by Social Science ($\bar{x}=4.38$) and Pure Science ($\bar{x}=4.35$). Results further revealed that respondents from Arts & Humanities ($\bar{x}=4.30$), Pure Science ($\bar{x}=4.23$) and Social Science ($\bar{x}=4.16$) deposit contents in the institutional repository for preservation.

Depositing contents in IR help in communicating with peers is affirmed by Arts & Humanities (\bar{x} =4.14), Pure Science (\bar{x} =4.09), Social Science (\bar{x} =4.08), Management (4.07) and Science & Technology (\bar{x} =3.98). Arts & Humanities (\bar{x} =3.94) researchers also experience satisfaction by depositing contents. The highest percentage of the respondents who believed that IR helps to get *more citation* were from Arts & Humanities (\bar{x} =3.62) and the majority of the respondents who agreed '*Publisher would not have exclusive rights over my work*' were from Arts & Humanities (\bar{x} =3.96) followed by Science & Technology (\bar{x} =3.54) and Pure Science (\bar{x} =3.50).

5.8 Reasons for not Self-archiving

The study tried to identify the reasons that influence the self-archiving behaviour of the researchers. The analysis of the opinion for not depositing/ contributing in institutional repositories revealed that the academic community is more accustomed to the print journals which have effective systems of peer review and dissemination and hence prefer and focus on publishing in well-established journals and conference proceedings in their discipline rather than any alternative methods of publishing. Another reason could be the fear of plagiarism which may deter them from publishing in open access.

Table 6: Reasons for not Self-archiving[illegible]

The respondents who accepted the lack of knowledge of the process/technicalities of submission, the highest respondents were from Social Science ($\bar{x}=4.12$) followed by Management ($\bar{x}=4.00$) and Pure Science ($\bar{x}=3.77$). A significant number of respondents from all the institutions surveyed had accepted the statement '*Danger of infringing agreed copyright agreements with publishers*' with the majority from Social Science ($\bar{x}=3.55$) followed by Science & Technology ($\bar{x}=3.46$) and Management ($\bar{x}=3.30$).

The results further revealed that the highest number of respondents from Arts & Humanities discipline had opined that it is not necessary for them to deposit in IR ($\bar{x}=3.70$) intimately followed by lack of knowledge about the process of submission ($\bar{x}=3.67$) and danger of infringement of copyright agreements with publishers ($\bar{x}=3.29$). Researchers from Management ($\bar{x}=3.70$) followed by Science & Technology ($\bar{x}=3.15$) and Pure Science ($\bar{x}=2.80$) disciplines do not deposit contents because of the lengthy process of submission.

5.9 Use of Institutional Repositories

With regard to the use of the contents of the institutional repository, figure 6 demonstrates that 541 (92.63%) of the respondents use IR content for academic and research purposes. The result is impressive, and it is encouraging because the respondents seem to have trust in the IR as a valuable source of scholarly communication.

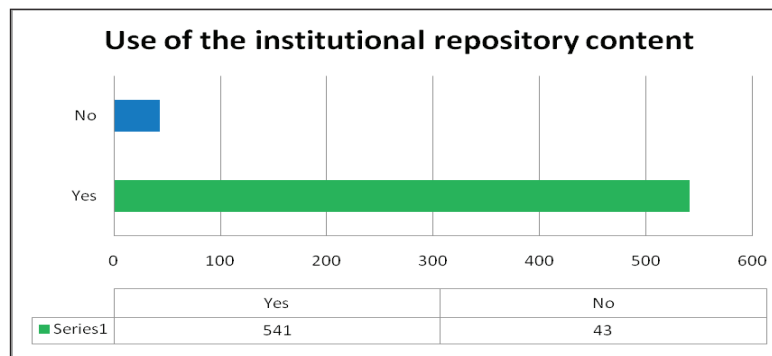


Fig 6: Use of the Institutional Repository Content

5.10 Preference to use of Institutional Repository Contents

The results related to the preference to use different types of contents in IR was also analysed and presented in Table 7. Articles published in scholarly journals have a high level of academic impact, quality assurance and credentials. Limited access to these journal articles is also considered as one of the main reasons for development of open access movement and IR.

It is also found that the highest percentage of respondents from Arts & Humanities discipline prefer to use journal articles ($\bar{x}=4.23$) followed by research papers ($\bar{x}=4.04$), theses & dissertations ($\bar{x}=3.68$) and conference proceedings

(\bar{x} =3.41). The archived reports are mostly preferred in Social Science (\bar{x} =3.34) followed by Arts & Humanities (\bar{x} =3.25) and Science & Technology (\bar{x} =2.98). Datasets (\bar{x} =2.73) and administrative records (\bar{x} =2.45) were mostly preferred in Pure Science. Learning resources (\bar{x} =2.48) and question papers (\bar{x} =2.06) were mostly preferred in Science & Technology.

Table 7: Preference for the Use of Content

<i>Types of content</i>	<i>Pure science</i>	<i>Science & technology</i>	<i>Social science</i>	<i>Arts & humanities</i>	<i>Management</i>	<i>Total</i>
Journal articles	3.88	3.95	3.78	4.23	3.85	3.91
Research papers	3.70	3.79	3.47	4.04	2.65	3.67
Theses and Dissertation	3.30	3.23	3.62	3.68	3.60	3.42
Conference proceedings	2.96	3.18	2.85	3.41	2.55	3.03
Reports	2.87	2.98	3.34	3.25	2.70	3.07
Datasets	2.73	2.52	2.43	2.38	1.85	2.52
Learning resources	2.19	2.48	2.32	2.25	2.05	2.32
Administrative records	2.45	2.41	2.27	2.45	2.30	2.39
Question papers	2.02	2.06	1.94	2.01	1.60	2.00
5= Always, 4= Often, 3= Sometimes, 2= Rarely, 1= Never						

5.11 Benefits of Institution Repositories

Table 8 presents the analysis of the data about the benefits of IR. It can be observed from the result that majority of the respondents accepted that IR makes publications easily available with the highest responses from Management (\bar{x} =4.65), Arts & Humanities (\bar{x} =4.42) followed by Pure Science (\bar{x} =4.41). The respondents who admitted that IR enhances the visibility and access to the research the majority belongs to Arts & Humanities (\bar{x} =4.46) followed by Management (\bar{x} =4.30) and Social Science (\bar{x} =4.27).

The respondents who admitted that IR helps in archiving and preserving of the institutions' publications majority were from Management (\bar{x} =4.40) followed by Arts & Humanities (\bar{x} =4.31) and Science & Technology (\bar{x} =4.23). Results further revealed that IR enhances the reputation of the institution within the academic community is accepted highest from Management (\bar{x} =4.45) followed by Arts & Humanities (\bar{x} =4.21) and Social Science and Science & Technology (both \bar{x} =4.12).

The respondents who admitted 'IR facilitate Communication within peers' the Arts & Humanities discipline is in first place with the Weighted Mean value of 4.10 followed by Management (\bar{x} =4.00) and Social Science (\bar{x} =3.96). IR helps to know the current research of colleagues within the institution or elsewhere was accepted by a negligible percentage of respondents with the highest response from Management (\bar{x} =3.50) followed by Arts & Humanities (\bar{x} =3.44) and Science & Technology (\bar{x} =3.28).

Table 8: Benefits of Institutional Repositories

<i>Benefits</i>	<i>Pure science</i>	<i>Science & technology</i>	<i>Social science</i>	<i>Arts & humanities</i>	<i>Management</i>	<i>Total</i>	<i>Std. deviation</i>
Make publications easily available	4.41	4.32	4.38	4.42	4.65	4.38	.834
Enhance the visibility and access to the research	4.19	4.15	4.27	4.46	4.30	4.24	.874
Archiving and preserving the institution's publications	4.15	4.23	4.22	4.31	4.40	4.22	.839
Enhance the prestige of the institution	4.04	4.12	4.12	4.21	4.45	4.12	.879
Facilitate Communication with peers	3.93	3.91	3.96	4.10	4.00	3.95	.900
Helps in teaching, learning and research	3.63	3.80	3.76	3.86	3.70	3.75	.936
Gives a single platform to search my research publications	3.56	3.65	3.68	3.70	4.05	3.65	1.051
Increases citation	3.16	3.40	3.35	3.62	3.25	3.34	.866
Help to know the current research of my colleagues within the institution or elsewhere	3.01	3.28	3.24	3.44	3.50	3.22	1.004
5= To great extent, 4= To reasonable extent, 3= Uncertain, 2= To a little extent, 1= Not at all							

5.12 Difficulties Faced in Accessing the IR Contents

The importance of web resources for research and academic tasks cannot be denied, but there are some factors that pose hindrances in their use of web resources, i.e. these factors are only affecting the incidence of use even when the academicians are constantly using the web resources.

Table 9: Difficulties Faced in Accessing the Content

<i>University / institution</i>	<i>Language barriers</i>	<i>Broken links / Dead links</i>	<i>Instability of networks</i>	<i>Information overload</i>	<i>Password</i>
GIPE	1.65	2.02	2.33	2.04	1.80
IGIDR	1.45	1.95	2.24	2.02	1.83
IIGM	2.02	2.45	2.45	2.73	1.88
IITB	1.51	2.06	2.09	2.02	1.75
IUCAA	1.54	1.94	2.00	2.07	1.50
MU	1.78	2.20	2.20	2.18	2.20
NCL	1.48	1.72	1.96	1.79	1.51

<i>University / institution</i>	<i>Language barriers</i>	<i>Broken links / Dead links</i>	<i>Instability of networks</i>	<i>Information overload</i>	<i>Password</i>
NCRA	1.65	1.85	1.85	1.90	1.80
TISS	1.51	1.74	1.66	1.66	1.62
Total	1.58	1.98	2.08	2.02	1.74
Standard deviation	.793	1.010	.936	1.037	.882
5= Always, 4= Often, 3= Sometimes, 2= Rarely, 1= Never					

Table 9 shows that 'Instability of networks' was revealed to be one of the major problems experienced by the academic community. Majority of the respondents who accepted network instability as a hindrance to use of the IR contents were from GIPE (\bar{x} =2.33), IGIDR (\bar{x} =2.24) and MU (\bar{x} =2.20). Information overload is also considered to be a problem in accessing the IR with the majority from IIGM (\bar{x} =2.73) followed by MU (\bar{x} =2.18) and IUCAA (\bar{x} =2.07). Results also indicate that broken links have created many problems to scholars and researchers to access contents of institutional repositories with the highest response from IIGM (\bar{x} =2.45) followed by MU (\bar{x} =2.20) and IITB (\bar{x} =2.06). Whereas, only a small percentage of respondents faced difficulties in using IR contents because of the language barrier.

4. CONCLUSION

Self-archiving as a means of open access publishing is preferred by many as an alternative to traditional scholarly communication. For the implementation of a successful IR, it is required to ensure the availability of appropriate ICT infrastructure before implementing IR project. The study explored the experience of the academicians concerning self-archiving, and the results revealed that the majority of respondents, namely 332 (56.85 percent), have previous experience of self-archiving before the survey and 252 (43.15 percent) have no previous experience of self-archiving. And among the respondents with the previous self-archiving experience majority are self-archiving in open access repositories. The main reason for archiving in IR is to provide wider access and visibility to research output so that they can be used worldwide and built upon in future research. About the reasons for not depositing in a repository, lack awareness among academic fraternities with the IR systems could be one reason.

To encourage academicians to self-archiving in IR, the librarian or the IR administrator should develop a long-term preservation strategy for the deposited contents. Necessary and clear policies of copyright issues and ownership should also be available in IR website, and personal support should be made available from the staffs as and when required. Usage statistics regarding item visits and file downloads should be tracked regularly and make visible on the website for the users. This statistic helps to measure the ability and success of an institutional repository.

REFERENCES

1. Bergman, S.S. (2006). The scholarly communication movement: highlights and recent developments. *Collection Building*, 25(4), 108–128. DOI:10.1108/01604950610705989
2. Creaser, C. (2010). Open access to research outputs- institutional policies and researchers' views: Results from two complementary surveys. *New Review of Academic Librarianship*, 16(1), 4–25. DOI:10.1080/13614530903162854
3. Jain, P., Bentley, G. & Oladiran, M.T. (2009). The role of institutional repository in digital scholarly communication. Retrieved on September 25, 2019, from http://www.library.up.ac.za/digi/docs/jain_paper.pdf
4. Johnson, R. (2002). Institutional repositories: partnering with faculty to enhance scholarly communication. *D-Lib Magazine*, 8(11). Retrieved on October 1, 2019, from <http://www.dlib.org/dlib/november02/johnson/11johnson.html>
5. Lynch, C.A. (2003). Institutional repositories: essential infrastructure for scholarship in the digital age. ARL: A Bimonthly Report on Research Library Issues and Actions from ARL, CNI, and SPARC, no. 226, 1–7. Retrieved on October 18, 2019 from <http://www.arl.org/bm~doc/br226ir.pdf>
6. Park, J. & Shim, J. (2011). Exploring how library publishing services facilitate scholarly communication. *Journal of Scholarly Publishing*, 43(1), 76–89. DOI:10.1353/scp.2011.0038
7. Pickton, M. & McKnight, C. (2008). Research students and the Loughborough institutional repository. *Journal of Librarianship and Information Science*, 38(4), 203–219. DOI: 10.1177/0961000606066572
8. Reitz, J. M. (2004). *Dictionary for library and information science*. London: Libraries Unlimited.
9. Sawant, S. (2012). Indian institutional repositories: a study of user's perspective. *Program: Electronic Library and Information Systems*, 46(1), 92–122.
10. Shehata, A., Ellis, D. & Foster, A. (2015). Scholarly communication trends in the digital age: Informal scholarly publishing and dissemination, a grounded theory approach. *The Electronic Library*, 33(6), 1150–1162. DOI: 10.1108/EL-09-2014-0160
11. Spezi, V., Fry, J., Creaser, C., Proberts, S. & White, S. (2013). Researchers' green open access practice: a cross-disciplinary analysis. *Journal of Documentation*, 69(3), 334–359. DOI: 10.1108/JD-01-2012-0008
12. Swan, A. & Brown, S. (2005). Open access self-archiving: An author study. Retrieved on September 11, 2019, from <http://cogprints.org/4385/1/jisc2.pdf>
13. Ukwoma, S.C. & Dike, V.W. (2017). Academics' attitudes toward the utilization of institutional repositories in Nigerian universities. *portal: Libraries and the Academy*, 17(1), 17–32. DOI: <https://doi.org/10.1353/pla.2017.0002>
14. Watson, S. (2007). Authors' attitudes to, and awareness and use of, a university institutional repository. *Serials*, 20(3), 225–230. Retrieved on October 15, 2019 from <http://core.ac.uk/download/pdf/138286.pdf>

