Full Length Research Paper

A study on researchers' attitude towards depositing in institutional repositories of universities in Karnataka (India)

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This paper explored researchers' attitude towards deposit to open access institutional repositories as a mode of scholarly publishing. The respondents were selected through stratified random sampling from a population of 1966 researchers from universities in Karnataka State with a response rate of 86.82%. Data were analysed using the statistical packages for social sciences (SPSS). The study reveals that the majority of the science, technology and medicine scholars are aware of and positive towards deposit institutional repositories and arts. However, the humanities and social science researchers are found to have a low level awareness of the institutional repository but were interested in contributing their research work to the University Institutional Repository and have a positive attitude towards providing free access to scholarly research results of their University.

Key words: Open access, scholarly publishing, self-archiving, institutional repositories.

INTRODUCTION

Electronic publishing, institutional repositories, open access and other new innovative technological opportunities have all led to changes in scholarly publishing. One effect has increased accessibility of research output. These changes are, however, emerging without the participants fully understanding what the changes may actually mean for scholarly communication, and how the nature of scholarly work may be affected. Although it is now possible to have free access to exhaustive information on the world wide web, (WWW) still significant amount of research is not available freely. While the delivery technique for scientific publications has changed rapidly, the economic ramifications have not changed much. The open access movement was triggered by the journal crisis due to exorbitant price increase of the publications.

LITERATURE REVIEW

Johnson (2002) states institutional repositories (IR) are

"digital archives of intellectual items created by the faculty, staff and students of an institution accessible to end users both within and outside the institution (university)". The IR may hold various kinds of publications, such as pre-prints and post-prints of journal articles, conference papers, research reports, theses, dissertations, software's, datasets, videos, audios and other scholarly items. This way, intellectual contributions of scholars are made available free of charge to the whole knowledge community around the world. Institutional Repositories give the opportunity to faculties and research scholars from universities to freely publish and facilitate open access to the results of their research activities. There is also a good chance for scholars and research communities to highly increase their visibility in the world and their impact. Institutional repositories have the same advantages as other types of author self-archiving: global accessibility, increased speed of dissemination and potentially reduced subscription charges for institutions. In addition though they can be available to more authors to deposit their work, and could therefore speed up the course towards all articles being available via open access. Beers (2009) explained that "A 2008 study showed that less than 20% of all scientific articles published were made available in a

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Table 1. Karnataka (India) based IRs listed by ROAR.

Host Institution	URL	Items as on Oct 2010	Software used
Indian Institute of Science, (IISc) Bangalore.	http://eprints.iisc.ernet.in/	30651	EPrints
Indian Institute of Astrophysics (IIA)	http://prints.iiap.res.in/	3060	DSpace
Indian Institute of Science	http://etd.ncsi.iisc.ernet.in/	835	DSpace
Document Research and Training Centre (DRTC)	https://drtc.isibang.ac.in/	249	DSpace
Nat. Aerospace Laboratories (NAL)	http://nal-ir.nal.res.in/	886	EPrints
Raman Research Institute (RRI)	http://dspace.rri.res.in/	3763	DSpace
Indian Statistical Institute, Bangalore	http://library.isibang.ac.in:8080/dspace/	188	DSpace
Bangalore Management Academy	http://bma.ac.in:8080/dspace/	823	Dspace

green or gold Open Access Repository. Self-archiving is at a low 15%, and incentives to do so increase it only to 30%." A model developed by Kim (2007) for evaluating factors affecting researchers' contribution to institutional repositories (IR) presented that cost, extrinsic benefit, awareness of IR, future plan to contribute, past experience of using IR. He surveyed 31 faculty professors using an online survey and found that only 9 (29%) were aware of the IR. Out of a total of 31 researchers, 13 (41.9%) were found to be planning to contribute to the IR in the future. Moreover, their experience was that 22 (71%) had made their research/teaching materials publicly accessible through venues other than the IR. A study conducted by Foster and Gibbons (2005) interviewed 25 professors at the University of Rochester about why faculty members did not submit their content to the institutional repository found that copyright infringement worries and disciplinary work practices compel them not to contribute actively to the University IR. They also report that faculty members developed their own routines to create and organize documents. Besides, faculty members perceived that IR contribution involved additional work, such as metadata creation for contributed objects on "open access self-archiving". An author study (Swan and Brown, 2005) have also found that awareness of self-archiving as a means to providing open access of authors work, 29% of them were aware of IR and open access and 71% were not. Therefore, these research findings clearly show that many factors can affect researchers' contribution to IR. A survey was undertaken at universities in ten European countries – Belgium, France, the United Kingdom, Denmark, Norway, Sweden, Finland, Germany, Italy and the Netherlands (Van Westrienen and Lynch, 2007). It was found that the number of IRs varies from as low as 1.5% of universities in Finland to as high as 100% in Germany, Norway and the Netherlands, with the focus on acquisition of content almost exclusively on collecting faculty publications (Table 1).

Objectives of the study

The primary objective of the investigation is to examine

various types of software based digital repositories available in university libraries in the state of Karnataka and the extent of their use by the academic scholars, teaching faculty, research scholars and students in the selected universities for the study.

The specific objectives of the study are:

(i) To find out the academic scholars awareness about Open Access, self-archiving, scholarly publishing and institutional repositories.
(ii) To compare academic scholars attitudes of different disciplines.
(iii) To study the factors influencing the academic scholars to deposit in institutional repositories.
(iv) To find out the factors discouraging the academic scholars not to deposit in institutional repositories.

METHODOLOGY

Questionnaire was used to collect data from respondents. The study was conducted at thirty five universities in Karnataka (India). The study targeted researchers from the ranks of post- graduate student level to professors' level. Under graduates and non-teaching staff were not included in the study on the assumption that they were not experienced in research and scholarly publishing and therefore their contribution to this kind of study would be minimal. Semi-structured questionnaires were distributed to the sample population of 2000 respondents who were selected through stratified random sampling from a population of 8681 researchers. Stratified random sampling was necessary to ensure the representation of the respondents on the basis of their designation and research discipline. Of the 1707 (86.82%) returned questionnaires, 1696 (84.8%) were found usable for analysis while eleven were discarded as incomplete (Table 2).

Analysis of data

The observed responses from 1966 respondents of higher education who are said to be the users of institutional repositories belonging to the three main categories: faculty, research scholars and PG-students.

Category-wise distribution of questionnaire

There were 1966 questionnaires distributed among the institutional repositories users of different university libraries. They include 128

Table 2. Category-wise distribution of questionnaire and responses received.

Category of scholars	No. of questionnaires distributed	No. of questionnaires received	% of response
Professors	128	61	47.65
Associate Professors	156	104	66.66
Assistant Professors	181	157	86.74
Research Scholars	681	625	91.77
Post-Graduate students	820	760	92.68
Total	1966	1707	86.82

professors, 156 associate professors, 181 assistant professors, 681 research scholars and 820 post graduate students (Table 3). Out of 1966 questionnaire distributed 1707 representing 86.82% of the total was received. These include 465 faculties, 681 research scholars and 820 post-graduate students. The study is restricted to faculty, research scholars and post-graduate students primarily because they are considered as the main users as well as depositors of the institutional repository of the library.

The responses to the questionnaire was obtained from 465 faculty members, 681 research scholars and 820 post graduate students. Each of these categories of scholars is further segregated into ten groups. In these groups, the respondents were 80 from medical universities, 300 from engineering discipline, 65 from law discipline, 681 research scholars from 35 universities, and finally 820 post graduate students from different disciplines of 35 universities. The total number of respondents inclusive of all these categories has been 1966.

Academic status and number of years in research field

Table 4 projects the values regarding the role and research experience in their subject area. It is encouraging to note that 604(59.40%) are freshers and enthusiastic to do research in their field, and 67(3.95%) have got more than 20 years of long experience.272(16.03%) of the faculty members have been in reserch field for more than 2 years. This shows that the faculty working in higher education institutions, to a considerable extent posses the knowlegde of research activites. The same statement holds good for research scholars . 335(32.90%) out of 1706 respondents have got not more than 2 years of experience in research field.

Information seeking behavior

Scholars were asked how they find literature for their research work and in particular, which sources they used. The results are shown in Figure 1. The most familiar and popular source was the printed books and journals; this was mentioned by 356(20.87%) academic scholars. 348(20.4%) out of 1706 specified 'Institutional repositories, others mentioned Library websites 12(7.03%), open access journals 184(10.8%), Google scholar 180(10.55%), Library OPAC 120 (7.03%), Subject portals 75(4.4%), online subscription databases125 (7.32%) and others 129 (7.57%).

Grouping of the users and non-users of IRs

Comparison of users and non-users with their designation in their universities shows that research scholars and assistant professors

are most committed to using and depositing their research work in institutional repositories.

Table 5 and Figure 2 shows only one group has a higher number of non-users than users: professors (8.27% non-users, n=61) but only sixty-one respondents out of 1706 were professors, so this figure does not have great impact on users of IRs. 295(30.44%) research scholars are the users of institutional repositories, and this shows great impact on familiarity with the use of institutional repositories.

Use and awareness about IRs

Figure 3 shows that 31.04% (n=530) of academic scholars learned about institutional repositoreis from internet, and 30.75%(n=525) scholars came to know about IRs, and 16.40% (n=280) respondents learned from subject journals.

Reason for publishing in IRs

Despite their low level of awareness of the insitutional repositories the majority of researchers were found to be interested to deposit their work to the institutional repository. Table 6 show that a total 56.80%(n=969) of the respondents agreed that it was very important to publish in IRs in order to disseminate their research findings for different reasons. 55.10% (n=534) of respondents agree that to communicate the research findings to peers, and 27% (n=264) academic scholars strongly agree to deposit their research works to communicate the research findings. From this, it is clear that maximum number of respondents deposit their work to communicate the results.

A total of 39% (n=378) respondents did not agree that academic scholars not depositing their research findings for the reason getting financial benefits, but 1.75% (n=17) respondents agree with that theier research findings would deposit in IRs for financial benefits, which is very low impact when compare to whole community.

Reasons for not contributing in IRs

Respondents were also asked to specify their reasons that made them unwilling to contribute their research findings to Institutional repository. As showed in Table 7, From the 737(43.20%) respondents 394 said they were not interested in contributing their scholarly articles to IRs. According to their responses 53.45% researches said that other users might copy my works without my permission, 24% agrees very strongly that they do not know how and what to deposit in institutional repositories, 34.87% of

Table 3. Discipline-wise distribution of questionnaires.

Category of scholars	Universities/ Discipline										
	Medical	Engineering	Law	Agriculture	Arts & Humanities	Physical sciences	Biological sciences	Manage ment	Computer science	Library science	Total
Faculty	20(25.00)	50(16.67)	1523.07)	10(10.52)	100(21.05)	25(25)	50(22.22)	50(20)	70(42.16)	50(28.58)	465(23.65)
Research scholars	10(12.50)	150(50.00)	20(30.77)	35(36.84)	200(42.10)	25(25)	75(33.33)	100(40)	26(15.66)	50(28.58)	681(34.64)
PG students	50(62.50)	100(33.33)	30(46.15)	50(52.63)	175(36.84)	50(50)	100(44.44)	100(40)	70(42.16)	75(42.86)	820(41.71)
Total	80	300	65	95	475	100	225	250	166	175	1966

Table 4. Academic status and experience in research field.

Designation	Experience					
	Less than 2 years	3-4 years	5-10 years	11-15 years	16-20 years	More than 20 years
Professor	0 (0.0)	0 (0.0)	4 (2.5)	8 (8.3)	19 (22.9)	30 (44.8)
Associate Professor	0 (0.0)	0 (0.0)	57 (35.2)	27 (28.1)	16 (19.3)	4 (6.0)
Assistant Professor	41 (4.0)	69 (25.4)	14 (8.6)	6 (6.3)	4 (4.8)	1 (1.5)
Librarian	2 (0.2)	6 (2.2)	14 (8.6)	6 (6.3)	4 (4.8)	3 (4.5)
Deputy Librarian	1 (0.1)	29 (10.7)	15 (9.3)	28 (29.2)	21 (19.3)	15 (22.4)
Assistant Librarian	34 (3.3)	21 (7.7)	38 (23.5)	19 (19.8)	19 (22.9)	14 (20.9)
Research scholar	335 (32.9)	128 (47.1)	16 (9.9)	2 (2.1)	0 (0.0)	0 (0.0)
PG student	604 (59.4)	19 (7.0)	4 (2.5)	0 (0.0)	0 (0.0)	0 (0.0)
Total	1017	272	162	96	83	67

scholars indicated lack of information to submit their research work to the University Institutional Repository, and majority of researchers said that the additional time and effort required of them to perform self-archiving were their reason for not to contribute to IRs.

FINDINGS

The study has presented findings on researchers' awareness and their use of open access institutional repositories, reasons that may influence researchers' motivation for IR contribution, which will lead to deposit into repositories. Researcher's deposits research material for a various reasons. 969 (56.80%) respondents motivated to contribute to the IRs. All the 1706 researchers responded to both the awareness and perception questions. Majority of the researchers were found be aware of the institutional repository concept the perecption to make publicly access to result through the institutional repository have been found strong and positive. 56.80%(n=969) of the respondents agreed that it was very important to publish in IRs in order to disseminate their research findings.

SUGGESTIONS

Based on the findings, the following suggestions have been made for improve user awareness and use of institutional repositories in university level in Karnataka:

(i) All universities have to take a policy decision for setting up of open access institutional repositories in their respective institution.
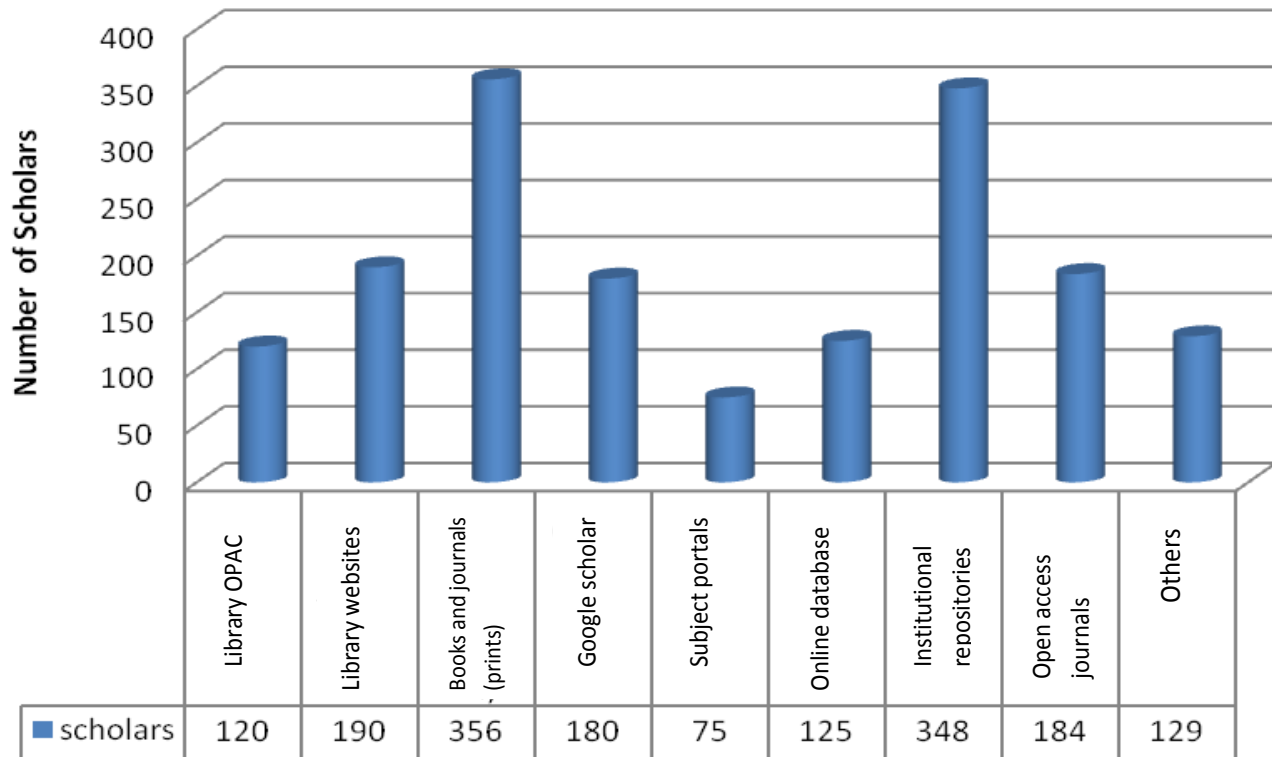
Sources of Information used by scholars

	Library OPAC	Library websites	Books and journals (prints)	Google scholar	Subject portals	Online database	Institutional repositories	Open access journals	Others
scholars	120	190	356	180	75	125	348	184	129

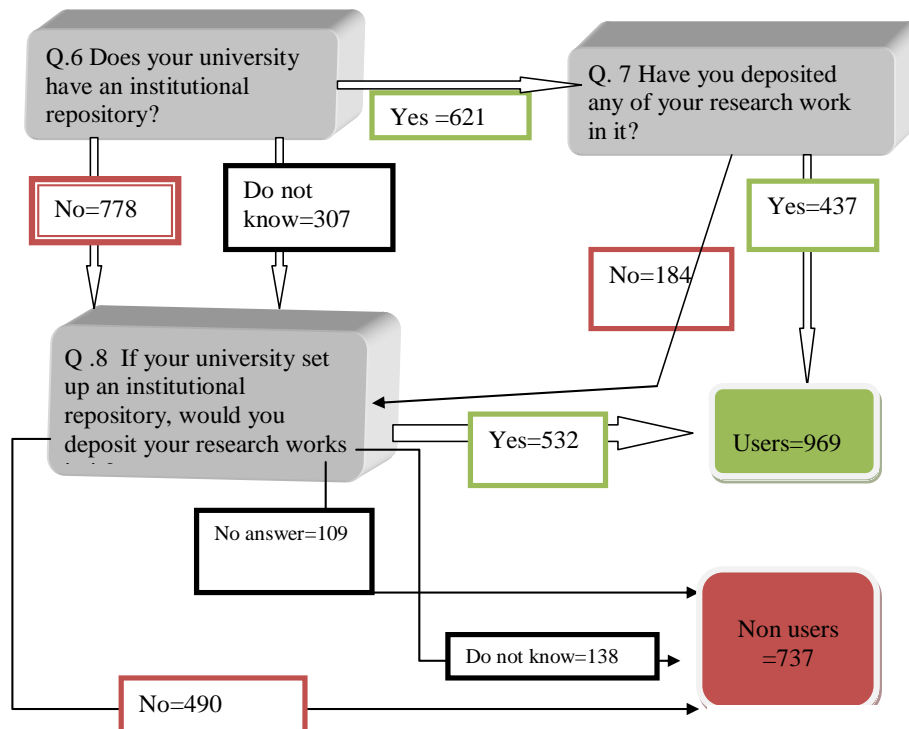**Figure 1.** Sources of information used by the academic scholars.

Figure 2. Grouping of the users and non-users of IRs.

Table 5. Users and non-users of institutional repositories.

Category	users	Non users	% of users	% of non-users
Professor	41	61	4.23	8.28
Associate Professor	94	59	9.70	8.01
Assistant Professor	178	135	18.37	18.32
Research Scholar	295	198	30.44	26.87
PG Student	361	284	37.25	38.53
Total	969	737	100	100
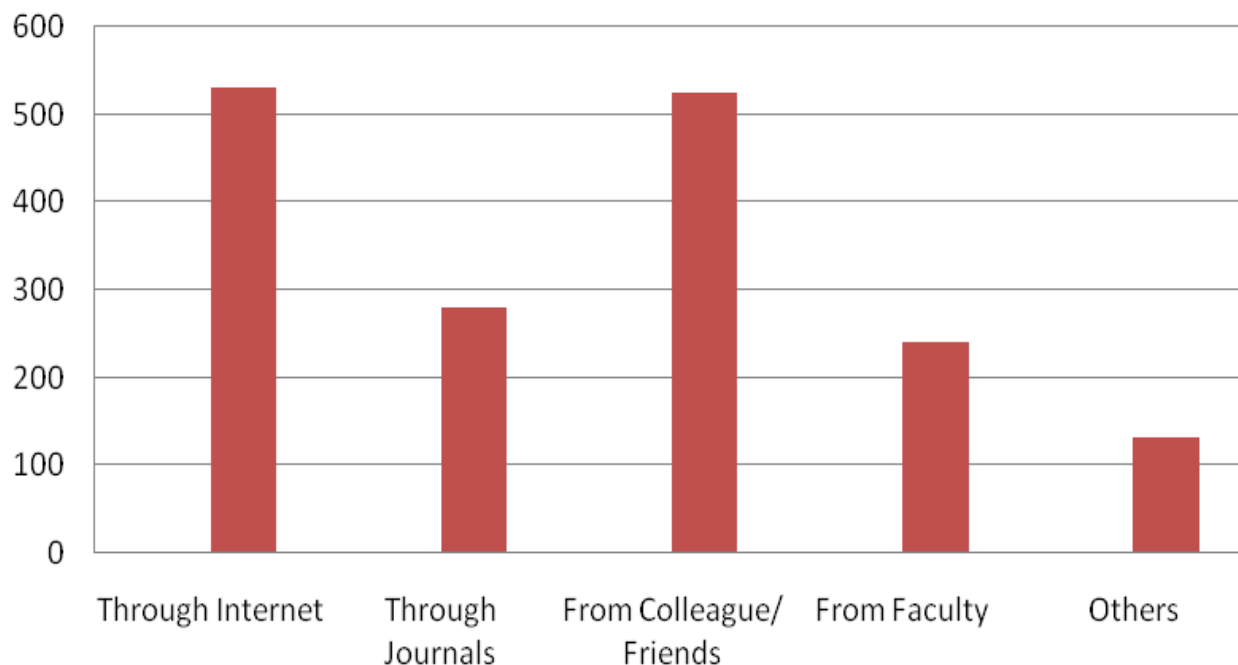
Figure 3. awareness about IRs.

(ii) An intensive awareness about use of institutional repositories should be brought among researchers by arranging seminars and workshops in respective departments of university.

(iii) Orientation programme should be conducted at regular intervals regarding the benefits and effective use of institutional repositories.

(iv) University libraries should integrate OPACs with their respective institutional repositories.

(v) Teaching faculties should encourage the students to make deposit of their research work in open access repositories.

(vi) Universities should conduct training programmes for research scholars on how to deposit and access research articles from open access institutional repositories.

(vii) Links to open access repositories, databases and online journals must be provided on the library's web page.

Conclusion

It has been identified in the survey that most of the researchers were found to have low awareness of the institutional repository, high interest in contributing contents to the University Institutional Repository and have positive attitude to make free access of their research results by improving the website functionality and its usability, more researchers would have been attracted to contribute their content to the University Institutional Repository. Nowadays simplicity and ease of use is required of the technology in order to save researchers time and attract more users to the use of institutional repositories.

Table 6. Reason for publishing in IRs.

Reasons	Do not agree	Agree a little	Neutral	Quite strongly agree	Very strongly agree
Boots my image within my university	31(3.20)	26(2.68)	128(13.21)	311(32.09)	473(48.81)
Increases my external recognition	147(15.17)	63(6.50)	51(5.26)	366(37.77)	342(35.29)
Colleagues are contributing	340(35.09)	453(46.75)	87(8.98)	44(4.54)	45(4.64)
To get financial benefits	378(39.01)	202(20.85)	151(15.58)	17(1.75)	221(22.81)
Helps in making useful contacts with experts	79(8.15)	254(26.21)	321(33.13)	154(15.89)	161(16.62)
Depositing my work in IR protects it from plagiarism	121(12.49)	351(36.22)	69(7.12)	324(33.44)	104(10.73)
To communicate results	84(8.67)	534(55.11)	21(2.17)	66(6.81)	264(27.24)

Table 7. Reasons for not contributing in IRs.

Reasons	Do not agree	Agree a little	Neutral	Quite strongly agree	Very strongly agree
Prefer to make my work available only on my personal website	121(16.41)	220(29.85)	66(8.95)	127(17.23)	203(27.54)
Repository have low prestige	225(30.52)	194(26.32)	221(29.98)	65(8.81)	32(4.34)
Others might copy my work without my permission	69(9.36)	89(12.07)	62(8.41)	123(16.68)	394(53.45)
University might expect me to pay to deposit my work	135(18.31)	214(29.03)	59(8.00)	106(14.38)	223(30.25)
Difficult and time-consuming to deposit my work	56(7.59)	121(16.41)	78(10.58)	225(30.52)	257(34.87)
Do not know how and what to deposit	258(35.00)	117(15.87)	56(7.59)	129(17.50)	177(24.01)

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ANNEXURE

I am trying to find out the "academic scholar's attitudes towards deposit in institutional repositories of universities in Karnataka". In this regard I would be grateful if you could respond to this questionnaire.

1. Name:						

2. Designation   (Please tick on appropriate box)

Professor		Associate Professor		Assistant Professor		Librarian
Deputy Librarian		Assistant Librarian		Research Scholar		PG Student

3. Discipline (Please tick on appropriate box)

Social Sciences		Humanities		Information Sciences		Physical Sciences
Biological Sciences		Law		Engineering		Chemical Sciences
Agricultural Science		Medical		Fine Arts		

4. Length of your service/Course (if student) (Please tick on appropriate box)

1- 2 years		3-4 years		5-10 years		
11-15 years		16- 20 years		More than 25 years		

5. Which source would you use for your research? (Please tick on appropriate box)

Library OPAC		Library websites		Books and journals (Print)		Google scholar
Subject portals		Online databases		Institutional repositories		Open access journals

6. Does your university have institutional repositories? (Please tick on appropriate box)

Yes		No		Do not know		

7. If yes, have you deposited any work on it?

Yes		No		Do not know		

8. If no, if your university set up an institutional repository, would you deposit your work in it?

Yes		No		Do not know		

9. How do you first get to know about institutional repositories?

Through Internet		Through journals		From colleagues /friends		
From faculty		Others				

10. How do you rate the reasons for publishing in IRs? (Please tick on appropriate box)

	Do not agree	Agree a little	Neutral	Quite strongly agree	Very strongly agree
Boots my image within my university					
Increases my external recognition					
Colleagues are contributing					
To get financial benefits					
Helps in making useful contacts with experts					
Depositing my work in IR protects it from plagiarism					
To communicate results					

11. How do you rate the reasons for not publishing in IRs? (Please tick on appropriate box)					
	Do not agree	Agree a little	Neutral	Quite strongly agree	Very strongly agree
Prefer to make my work available only on my personal website					
Repository have low prestige					
Others might copy my work without my permission					
University might expect me to pay to deposit my work					
Difficult and time-consuming to deposit my work					
Do not know how and what to deposit					