A Survey of Open Access Barriers to Scientific Information: Providing an Appropriate Pattern for Scientific Communication in Iran

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STATEMENT OF THE PROBLEM

1. ARL Statistics show that the average annual increase of the serial unit cost was 9% between 1986 and 2003 and the consumer price index for the same period increased 64%.Serial unit costs have been increasing much faster than inflation and library budgets for the past 16 years.
2. Spiral pricing levels of scientific journal and library budget cutback exert restrictions on institutions in providing the needed information.
3. Serial pricing crisis and permission crisis put restrictions on scholars in their scholarly findings.
4. Consequently, a large number of scientists in the world, specially in developing countries, are unable to access the research findings they need. According to ARL statistics this gap has widened since 1986.
5. Scholars are losing their control on a system that they created.
6. New opportunity for scholarly communication brought about by Internet and www.
7. This study intends to survey academics of Iranian universities on their attitudes toward open access publishing and providing an appropriate pattern for scholarly communication.

PREVIOUS STUDIES

- Gadd , E., Oppenheim, Ch. , Probets, S. (2003), RoMEO studies 3: How academics expect to use open-access research papers.-in: Journal of Librarianship and Information science, 35(3) Sep 2003,pp. 171-187. – ISSN 0961-0006.Home Page http://www.lboro.ac.uk/departments/1s/disresearch/romeo/RoMEO%20studies%203.pdf.
- Gadd, E., Oppenheim, Ch., Probets, S. (2003), RoMEO studies 2: How academics want to protect their open-access research papers .- in: Journal of Information science,29(5) Sep 2003,pp.333-356.- ISSN 0165-5515.Home Page http:// www. lboro. ac. uk/ departments/ 1s/ disresearch/ romeo/.
- Gadd, E., Oppenhim, Ch., Probets, S. (2003), studies 1: The Impact of copyright ownership on academic author self-archiving.- In: Journal of Documentation, 59 (3) pp. 243-277.-ISSN:0022-0418. Home Page http:// www. lboro. ac. uk/ departments/1s/disresearch/ romeo/ RoMEO %20studies %201. pdf. RoMEO
- Rowlands, I., Nicholas,D., Huntingdon, P. (2004), Scholarly communication in the digital environment: what do authors want? Findings of an international survey and author opinion: project report. ciber, city university, London ,UK. Home Page http :// ciber. Soi. City. Ac. Uk/ ciber-pa-report. pdf .
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OBJECTIVES

This study seeks to determine the following regarding open access movement:

- Academics' attitudes toward open access
- Academics' awareness of open access
- Academics' attitudes toward self- archiving
- Academics' attitudes toward institutional repository
- Academics' attitudes toward subject-based repository
- Academics' attitudes toward open access journal
- Academics' attitudes toward pricing crisis
- Academics' attitudes toward permission crisis
- Academics' reasons for not publishing via open access channels
- Academics' views on the usage of open access materials as-users and authors

METHODOLOGY

1. This case study is a part of a survey at national level.
2. The survey population consist of Shiraz University academics.
3. According to ***Faculty Members in Iranian Higher Education Institutes, years 2003***, 377 doctorial faculties were employed in Shiraz University.
4. Subject discipline: Humanities, Science, Engineering, Agriculture & Veterinary.
5. Sample size is 50 by using 95% confidence levels and 12.9% confidence interval. Sample size is calculated from a preliminary sample population variance which is estimated 0.05 ($s^2 = 0.05$) according to the formula $2 Z_{\alpha/2} S/\sqrt{n} = 0.129$

DATA COLLECTIONS AND ANALYSIS

1. The survey instrument was a questionnaire which was sent to the respondents' address and 41 returned.
2. Descriptive (demographic data) and inferential (chi – square test) statistics were conducted using SPSS Software.
3. The analysis of the data collected from the returned questionnaires has been presented in tables and graphs.

RESULTS

Demography of respondents

Table 1: Demography of Respondents

Subject discipline	Engineering 24.39%	Science 31.71%	Humanities 31.71%	Agriculture & Veterinary 12.20%
Academic status	Full Professor 12.20%	Associate Professor 19.51%	Assistant Professor 68.29%	–
Years in academia	5 years or less 17.07%	6-10 Years 21.95%	11-15 Years 26.83%	More than 15 years 34.15%
NO. of research papers	10 or less papers 48.65%	11-40 papers 40.54%	41-70 papers 8.10%	Over 70 papers 2.70%

RESULTS CONT.

Table 2: Views on Open Access Channels

Degree of acceptance / OA Channels	Strongly agree %age	Agree %age	No comment %age	Disagree %age	Strongly disagree %age
Open Access Publishing	**43.59**	**48.72**	7.69	_	_
Self-Archiving	**22.50**	**40**	30	7.50	_
OA Journal	**30**	**40**	22.5	7.50	_
Institutional Repository	**23.68**	**31.58**	**42.11**	2.63	_
Subject Repository	**20.51**	**41.03**	**35.90**	2.56	_

RESULTS CONT.

Table 3: Familiarity with Open Access Publishing Models

OA Publishing Models \ Degree of Familiarity	Very high %age	High %age	No familiarity %age	Low %age	Very low %age
Self-Archiving	7.40	**17.60**	30	**37.50**	7.50
OA Journal	9.75	**29.27**	29.27	**26.83**	4.88
Institutional Repository	5.26	**21.06**	36.84	**31.58**	5.26
Subject Repository	5.13	**28.21**	25.64	**38.46**	2.56

RESULTS CONT.

Table 4: Academics' Awareness of Copyright Law

Degree of Awareness / Copyright law	Very high % age	High % age	No familiarity % age	Low % age	Very low % age
Awareness	2.56	10.26	**51.28**	28.21	7.69

Table 5: Academics' Attitudes Toward Copyright Law

Degree of acceptance / Copyright law	Strongly agree % age	Agree % age	No comment % age	Disagree % age	Strongly disagree % age
Knowledge distribution	5.41	**48.65**	**29.73**	13.51	2.70
Access restriction	2.94	11.76	**41.18**	**44.12**	_
Assignment to publisher	7.69	**46.15**	**33.33**	12.82	_

RESULTS CONT.

Table 6: open access materials usage comparison

Open access material usage	As- authors		As-users		
View on screen freely	Agree %	Disagree %	$\alpha = 0.05$ $P = 0.059$	Agree %	Disagree %
	86.49	5.4		**92.5**	5
View on screen conditionally	34.29	**42.86**	$\alpha = 0.05$ $P = 0.001$	33.33	**47.22**
Print freely	**83.33**	13.89	$\alpha = 0.05$ $P = 0.003$	**89.47**	2.63
Print conditionally	39.39	**42.42**	$\alpha = 0.05$ $P = 0.002$	39.39	**45.45**
Anybody-Any purpose	40	**42.5**	$\alpha = 0.05$ $P = 0.000$	**43.59**	41.02
Educational & Research purpose	**51.38**	35.9	$\alpha = 0.05$ $P = 0.000$	**55.26**	36.84

RESULTS CONT.

Table 7: percentage of respondents' views on journal pricing and permission crisis

	PPV %	SL %	Subscription fees %	Journal price increase %
Strongly agree	13.16	7.89	10.81	25
Agree	**55.26**	**55.26**	**54.03**	**60**
Disagree	10.53	13.16	10.81	5

RESULTS CONT.

Table 8: Academics' reasons for not publishing in open access models

Reasons	Strongly agree%	Agree%	Strongly agree plus Agree%	No comment%	Disagree%	Strongly disagree%	Strongly disagree plus disagree%
I am not familiar with OA scientific articles	13.9	22.2	**36.1**	30.6	27.8	5.6	33.3
I perceive OA will reduce my career advancement	-	23.1	23.1	30.8	38.5	7.7	**46.2**
I perceive OA will affect my promotion badly	5.3	26.3	31.6	28.9	31.6	7.9	**39.5**
I perceive the readership of OA to be smaller than traditional jouranls	-	5.1	5.1	25.6	59	10.3	**69.3**
I think OA articles may be less frequently cited	7.7	12.8	20.5	28.2	43.6	7.7	**51.3**
I believe that OA materials have poor peer review procedures in place	15.8	23.7	**39.5**	23.7	28.9	7.9	36.8

DISCUSSION

Table 9: Academic views on four channels of open access publishing

Four channels / Subject disciplines	Self-archiving 62.5%		Institutional repository 55%		Subject-based repository 60%		Open access journal 70%	
	Agree %	Rank	Agree %	Rank	Agree %	Rank	Agree %	Rank
Humanities	40	1	33.3	2	29.2	2	32.1	2
Science	20	3	38.1	1	37.5	1	35.7	1
Engineering	24	2	13.4	3	20.8	3	14.3	4
Agriculture & Veterinary	16	4	13.4	3	12.5	4	17.9	3

DISCUSSION CONT.

Table10: Academics familiarity with four open access channels

Four channels	Very high %	High %	NO familiarity %	Low %	Very low %
Self-archiving	7.4	17.6	30	37.5	7.5
Open access journal	9.75	29.27	29.27	26.83	4.88
Institutional repository	5.26	21.06	36.84	31.58	5.26
Subject-based repository	5.13	28.21	26.64	38.46	2.56

- **What do academics think about copyright?**
- **Open access materials usage comparison**
- **Serial pricing crisis and permission crisis**
- **Academics' reasons for not publishing in open access models**

CONCLUSION

The results of this study proved previous findings concerning open access movement. Academics of Shiraz University (Iran) in spite of their low awareness of open access movement significantly agreed to use open access vehicles for their publications. Their first choice in new pattern of publishing is **OPEN ACCESS JOURNAL** and the second one is **SELF-ARCHIVING**. Subject-based repository and institutional repository are at the third and fourth place, respectively. It seems that universities should think more about the two last choices. The lack of awareness of copyright law is an important issue that should be considered in the near future by academics and their institutions. What is clear is that academics current view on open access is strongly rooted in the world of print, and we still have quite a long road ahead.