

The changes in Japanese researchers' usage and perception of electronic resources: Result of SCREAL Survey 2011

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ABSTRACT

The Standing Committee for Research on Academic Libraries (SCREAL), in cooperation with 45 institutions in Japan, conducted a questionnaire survey from October to December 2011. As a result, 3,922 valid responses across various fields were collected. Following up this survey, we attempt here to clarify how usage and perception of e-journals and scholarly articles among researchers and graduate students in Japan changed. The basic findings were as follows. 1) More than 90% of respondents in natural sciences, including pharmaceutical science, chemistry, biology, physics and medicine, reported that they used e-journals at least once or twice a month. 2) E-journals were not as heavily used in humanities and social sciences as in natural sciences, but the proportion of regular users turned out to be more than 4 times that of the 2001

survey. 3) This difference in e-journals usage by discipline is strongly associated with the degree of dependence on domestic documents written in Japanese. The two groups of respondents, users of international documents and users of domestic documents, showed a statistically significant difference in answering the question concerning "Frequency of e-journals use." 4) Attitude to the necessity of printed version drastically transmuted. 62.3% of respondents in natural sciences and 53.6% in humanities and social sciences thought "printed journals are unnecessary when e-journals are accessible." 5) Use of digital devices for e-books was not popular as yet, but the respondents expressed their high interest in the future use. Some preliminary discussion is made to identify the factors affecting the usage and/or perception of electronic resources by Japanese researchers.

Keywords

online journals, electronic resources, user survey, longitudinal study, users' perception

INTRODUCTION

The Standing Committee for Research on Academic Libraries (SCREAL) conducted a questionnaire survey from October to December 2011. The objective of this

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survey was to reveal the changes in researchers' and graduate students' usage and perception of electronic resources, and their expectation or requirements for academic libraries under such circumstances that the availability of e-journals and other research materials over Internet has been widened. It was also expected to obtain some essential information that would help academic libraries upgrade their e-journal operations.

METHODS

The first SCREAL Survey was held in 2007 (SCREAL 2008), with the questionnaire items partly inherited from three major preceding surveys on e-journals. They all bore the same title, "Survey on Current and Future Use of E-Journals at Universities," and were conducted by the Japan Association of National University Libraries (JANUL) and the Public and Private University Libraries (PULC). The items of the last-reading surveys by Tenopir et al. (Tenopir, Zhou and King, 2006) were incorporated into the 2007 survey, and most items of the 2011 survey were kept the same to keep track of contemporary changes, although a few new elements on e-books were added.

A web-based survey software was used. The participating institutions (21 national universities, 15 private universities, 9 national research institutes) announced the survey by email to their researchers and graduate students, the interested parties of whom responded on the webpage. In three months, 3,922 completed responses were collected from across various subject fields, with 6.04% response rate.

FINDINGS

The basic findings are as follows.

- 1) More than 90% of respondents in natural sciences, including pharmaceutical science, chemistry, biology, physics and medicine, said that they used e-journals at least once or twice a month. Moreover, more than a half of the respondents in pharmaceutical science, chemistry, biology and physics used e-journals almost everyday (See figure 1). While the use of e-journals in these disciplines was already conspicuous in 2007, the 2011 survey underlined this pattern in a wider

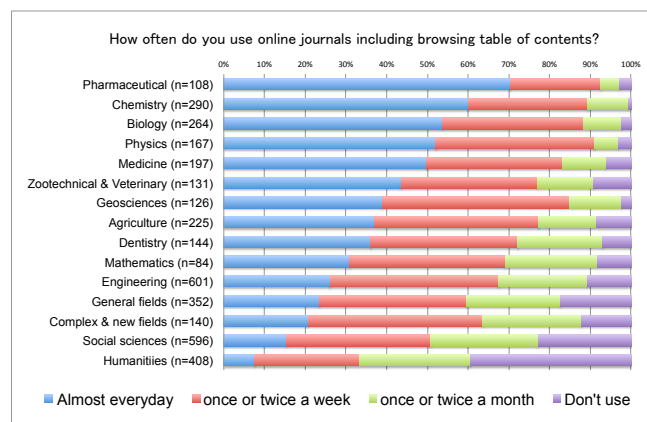


Figure 1. Frequency of EJ use by the discipline

variety of institutions including smaller colleges and national research institutes (See figure 2-1).

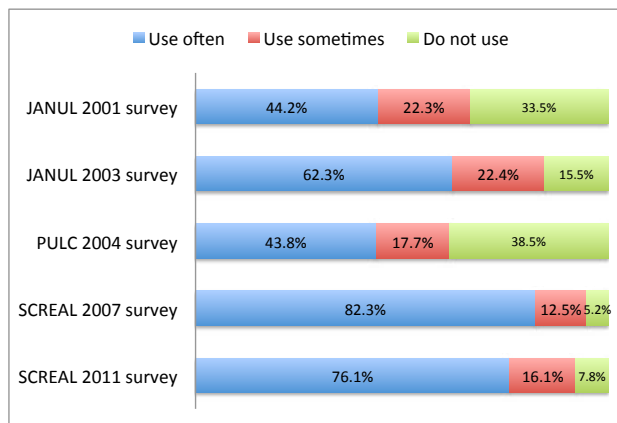


Figure 2-1. Change in e-journal usage in past 5 surveys: natural sciences

- 2) Although, in humanities and social sciences, usage was not as much as in natural sciences, the increase in the proportion of regular users (i.e. "use often" plus "use sometimes" in figures 2-1 and 2-2). They use e-journals at least once or twice a month.) was remarkable, with 16.5% (2001 JANUL survey), 36.0% (2003 JANUL survey), 26.0% (2004 PULC survey), 68.2% (2007 SCREAL survey), and 70.4% (2011 SCREAL survey), suggesting that e-journals were now recognized as essential information resources even outside of STM fields (See figure 2-2).

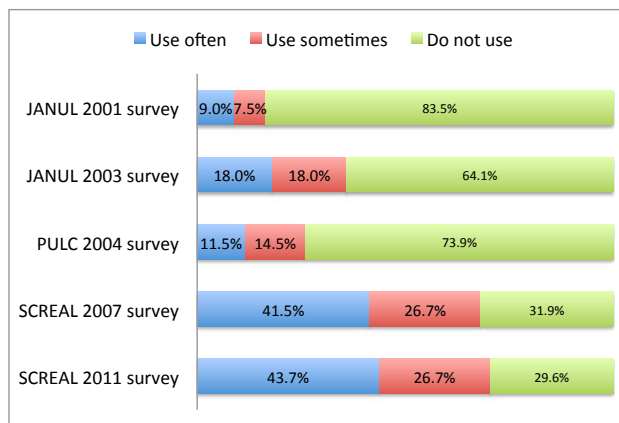


Figure 2-2. Change in e-journal usage in past 5 surveys: humanities & social sciences

- 3) We separated the respondents into two groups, users of international documents and users of domestic documents, according to their responses to the question about the journal titles of the last-reading articles (See Table 1). The proportions of use of international documents and domestic documents vary considerably by discipline. The difference of e-journals usage by discipline is strongly associated with the degree of dependence on domestic documents written in

Japanese. Whereas the respondents in most natural sciences are more likely to use international documents, about a half of the respondents in humanities, social sciences and complex & new fields use domestic documents. Interestingly, the two groups of respondents showed an identifiable difference in answering the question concerning “Frequency of e-journals use.” The differences between the two groups, in natural sciences and humanities/social sciences respectively, are statistically significant by the 1% level according to the p-values from Pearson’s Chi-square test (See Table 2). This seems to reflect the unique situation of information resources in Japan where the digitization of domestic journals has been very slow, even though they are essential in conducting research in some disciplines.

Table 2. Frequency of EJ use between users of international documents and domestic documents

	Almost everyday	Once or twice a week	Once or twice a month	Have used in the past	Don't use / Never heard	Total	Pearson's X2 test
Natural Sciences							
Users of international documents	1,070 46.1%	911 39.3%	277 11.9%	28 1.2%	34 1.5%	2,320 100%	p-value = .000
Users of domestic documents	33 9.2%	112 31.1%	119 33.1%	59 16.4%	37 10.3%	360 100%	
Humanities & Social Sciences							
Users of international documents	81 20.2%	178 44.4%	96 23.9%	26 6.5%	20 5.0%	401 100%	p-value = .000
Users of domestic documents	45 9.8%	113 24.6%	125 27.2%	82 17.9%	94 20.5%	459 100%	

Table 1. Proportion of use of international/domestic documents

	Users of International documents	Users of Domestic documents	Total
Medicine	181 90.5%	19 9.5%	200
Dentistry	113 83.1%	23 16.9%	136
Pharmaceutical	105 99.1%	1 0.9%	106
Agriculture	183 85.9%	30 14.1%	213
Zootechnical & Veterinary	124 95.4%	6 4.6%	130
Biology	255 97.3%	7 2.7%	262
Physics	161 97.6%	4 2.4%	165
Geosciences	118 92.2%	10 7.8%	128
Chemistry	294 99.3%	2 0.7%	296
Engineering	439 81.1%	102 18.9%	541
Mathematics	69 97.2%	2 2.8%	71
General fields	187 60.9%	120 39.1%	307
Complex & new fields	97 79.5%	25 20.5%	122
Social sciences	261 49.0%	272 51.0%	533
Humanities	142 43.0%	188 57.0%	330
Others	22 56.4%	17 43.6%	39
Total	2,751 76.9%	828 23.1%	3,579

4) Demand for print journals has drastically diminished since 2007, when 41.0% of respondents in natural sciences and 19.5% in humanities and social sciences supported “printed journals are unnecessary when e-journals are accessible.” In the present 2011 survey, as many as 54.2% and 29.4% of respondents in the respective fields thought so in the case of the latest and 62.3% and 53.6% respectively concerning back issues (See Table 3). However, the two user groups of international documents and domestic documents show a large divergence. Only 34.6% (natural sciences) and 19.0% (humanities and social sciences) of the domestic document users agree with that print journals are unnecessary when the e-journals are accessible. It should be noted, however, that even the domestic document users show greater preference to e-journal only environment in comparing the results of 2007 and 2011 surveys.

Table 3. Change in necessity of printed journals

Natural Sciences	2007 Survey			2011 Survey - newly published issues			2011 Survey - back numbers		
	Total (n=2,361)	Users of international documents (n=2,161)	Users of domestic documents (n=220)	Total (n=2,680)	Users of international documents (n=2,308)	Users of domestic documents (n=356)	Total (n=2,680)	Users of international documents (n=2,308)	Users of domestic documents (n=356)
Printed journals are unnecessary when e-journals are accessible	41.0%	43.2%	22.7%	54.2%	58.4%	34.6%	62.3%	64.3%	52.5%
Both printed and e-journals are necessary	52.7%	50.7%	70.0%	40.6%	36.7%	59.0%	32.3%	30.4%	42.1%
Only printed journals are necessary	0.4%	0.3%	1.4%	0.6%	0.3%	1.4%	0.3%	0.3%	0.6%
Don't know / Others	5.8%	5.8%	5.9%	4.7%	4.5%	5.1%	5.1%	5.0%	4.8%
Humanities & Social Sciences	2007 Survey			2011 Survey - newly published issues			2011 Survey - back numbers		
	Total (n=351)	Users of international documents (n=172)	Users of domestic documents (n=179)	Total (n=858)	Users of international documents (n=400)	Users of domestic documents (n=458)	Total (n=858)	Users of international documents (n=400)	Users of domestic documents (n=458)
Printed journals are unnecessary when e-journals are accessible	19.5%	30.8%	10.1%	29.4%	44.0%	19.0%	39.8%	52.0%	32.5%
Both printed and e-journals are necessary	73.8%	65.7%	80.4%	62.5%	51.0%	71.4%	53.6%	44.0%	60.3%
Only printed journals are necessary	3.5%	0.6%	5.6%	3.2%	1.8%	4.8%	2.2%	1.0%	3.1%
Don't know / Others	3.2%	2.9%	3.9%	4.9%	3.3%	4.8%	4.4%	3.0%	4.1%

- 5) More than a quarter (25.8%) of respondents answered that they used digital devices which could display e-books such as iPad, Kindle, Sony Reader, GALAPAGOS, iPhone, etc. for research/education purposes, and a higher percentage of respondents (47.5%) showed their interest in such devices, answering “have never used, but want to use.”

DISCUSSION AND CONCLUSIONS

Through an online questionnaire survey, we collected information from a large sample of Japanese researchers concerning their information needs, demands, expectations, perception of library’s and publisher’s services, information behavior, etc. The survey results gained over the past decade showed significant progresses in researchers’ use of online resources and their attitude to information access as shown in their substantially changed views about the “necessity of printed journals.”

Our basic findings bear general similarities to those shown in recent reports in US and European countries, for example Schonfeld, R. C. & Housewright, R (2010). In some cases, though, especially in humanities and social sciences, it appears that the changes in Japan are slow. Our survey result shows that one of the reasons for this slowness is tied with the “traditional” pattern of using domestic printed journals in Japanese, most of which are published by small publishing companies, learned societies, or universities with smaller subscriptions.

However, it is also clarified that the preference for and expectations to e-journals have been steadily increasing regardless of the user’s preference for international or domestic documents. With the growth of Open Access publishing and Open Access self-archiving, a variety of ways to access scholarly information has become visibly greater, and these efforts may promote the transition.

Therefore, we need to keep track of the changes to further investigate the users’ attitudes and behavior in detail.

In addition, there were 3,651 opinions in total, answering to three open-ended questions regarding “function of online journals,” “use of academic information,” and “future services of libraries.” To clarify the structure of users’ interests and/or concerns, we plan to do text-analysis using the descriptions and variables found in the responses.

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REFERENCES

- SCREAL: Standing Committee for Research on Academic Libraries (2008), SCREAL Report : Results of a Survey on Information Access and E-journal Usage of Researchers and Graduate Students, 2007. Retrieved June 8, 2012 from http://www.screal.jp/SCREAL_REPORT_eng8.pdf.
- Tenopir, C., Zhou, X., & King, D. W. (2006). University of New South Wales Academic Staff Journal Reading Patterns: Faculty Summary of Results of the Survey Conducted September-October 2004. The Selected Works of Carol Tenopir. Retrieved June 8, 2012 from http://works.bepress.com/carol_tenopir/87
- Schonfeld, R. C. & Housewright, R (2010). Faculty Survey 2009: Key Strategic Insights for Libraries, Publishers, and Societies. Retrieved June 8, 2012 from <http://www.ithaka.org/ithaka-s-r/research/faculty-surveys-2000-2009/faculty-survey-2009>.