



Evidence Summary

Level 1 COUNTER Compliant Vendor Statistics are a Reliable Measure of Journal Usage

A review of:

Duy, Joanna and Liwen Vaughan. "Can Electronic Journal Usage Data Replace Citation Data as a Measure of Journal Use? An Empirical Examination." *The Journal of Academic Librarianship* 32.5 (Sept. 2006): 512-17.

Reviewed by:

Gaby Haddow

Senior Librarian, Humanities, Research Services, Library & Information Service

Curtin University of Technology

Perth, Western Australia, Australia

E-mail: G.Haddow@curtin.edu.au

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Abstract

Objective – To identify valid measures of journal usage by comparing citation data with print and electronic journal use data.

Design – Bibliometric study.

Setting – Large academic library in Canada.

Subjects – Instances of use were collected from 11 print journals of the American Chemical Society (ACS), 9 print journals of the Royal Society of Chemistry (RSC), and electronic journals in chemistry and biochemistry from four publishers – ACS, RSC, Elsevier, and Wiley. ACS, Elsevier, and Wiley journals in chemistry-related subject areas were sampled for Journal Impact

Factors and citations data from the Institute for Scientific Information (ISI).

Methods – Journal usage data were collected to determine if an association existed between: (1) print and electronic journal use; (2) electronic journal use and citations to journals by authors from the university; and (3) electronic journal use and Journal Impact Factors.

Between June 2000 and September 2003, library staff recorded the re-shelving of bound volumes and loose issues of 20 journal titles published by the ACS and the RSC.

Electronic journal usage data were collected for journals published by ACS, RSC, Elsevier, and Wiley within the ISI-defined

chemistry and biochemistry subject area. Data were drawn from the publishers' Level 1 COUNTER compliant usage statistics. These data equate 1 instance of use with a user viewing an HTML or PDF full text article. The period of data collection varied, but at least 2.5 years of data were collected for each publisher.

Journal Impact Factors were collected for all ISI chemistry-related journals published by ACS, Elsevier, and Wiley for the year 2001. *Library Journal Utilization Reports* (purchased from ISI) were used to determine the number of times researchers at the university cited journals in the same set of chemistry-related journals over the period 1998 to 2002. The authors call this "local citation data" (512).

The results from electronic journal use were also analysed for correlation with the total number of citations, as reported in the *Journal Citation Reports*, for each journal in the sample.

Main results – The study found a significant correlation ($p < 0.01$) between the results for print journal and electronic journal usage. A similar finding was reported for correlation between electronic journal usage data and local citation data ($p < 0.01$). No significant association was found between Journal Impact Factors and electronic journal usage data. However, when an analysis was conducted for the total number of citations to the journals (drawn from the Journal Impact Factor calculations in *Journal Citation Reports*) and electronic journal use, significant correlations were found for all publishers' journals.

Conclusion – Within the fields of chemistry and biochemistry, electronic journal usage data provided by publishers are an equally valid method of determining journal usage as print journal re-shelving data. The results of the study indicate this association is valid

even when print journal subscriptions have ceased. Local citation data (the citations made by researchers at the institution being studied) also provide a valid measure of journal use when compared with electronic journal usage results. Journal Impact Factors should be used with caution when libraries are making journal collection decisions.

Commentary

This study is an excellent example of how a local project can inform the wider library community, and encourage further thinking and research on an issue which is relevant to many in that community. Although not radically different to previous journal use studies, the paper brings a range of methods together and presents the research in a form that is readable and easily replicated in other settings. The research question and study objectives are clearly stated; the research methods are appropriate and discussed in sufficient detail; and the authors' conclusions draw directly from the study's findings, while acknowledging a number of limitations.

In their introduction, Duy and Vaughan discuss different methods of measuring journal use and the arguments for and against employing these measures. Questions relating to the accuracy of journal re-shelving data are raised, as are the limitations of using Journal Impact Factors in collection development decisions. This study's findings indicate journal re-shelving data are at least as valid a measure as publisher data for electronic journal use. Two alternative inferences can be drawn from the study's results: re-shelving data and electronic journal use data are equally useful methods to determine use; or neither re-shelving data nor electronic journal use data are valid measures of journal use. The authors' conclusion supports the former, stating their results suggest vendor supplied

electronic journal usage data can replace journal re-shelving studies.

For librarians involved in journal collection decisions, the finding that Level 1 COUNTER compliant statistics are a valid method to determine electronic journal use is very good news indeed. It provides a degree of confidence in using these data for journal collection decisions and it also lends weight to the argument that all publishers of electronic journals conform to this standard.

The finding that local citation data are a useful measure is encouraging and may provide an alternative when publisher usage data are not available or not Level 1 COUNTER compliant. It is an alternative limited by the cost involved in acquiring the data from ISI and in the number of journals indexed by ISI. On the other hand, the study's results showed no correlation between Journal Impact Factors and electronic journal use data which suggests that some caution is required when applying Journal Impact Factors in local collection decisions.

There is one perplexing aspect to the study. The findings for the usage of electronic journals published by the Royal Society of Chemistry are not reported in 2 of the paper's tables, although the authors list this publisher in the methodology section. This is a minor quibble in what is an exceptionally relevant and useful study for librarians grappling with the complexities of electronic journal subscriptions and collection management decisions.

As this study is confined to 1 institution and a limited number of chemistry-related journals, it would be unwise to draw generalisations from it for application in practice. Further research is needed to provide a clearer understanding of the most useful measures of journal usage in different settings and across a range of subject areas. For those interested in adding to this body of knowledge, the study by Duy and Vaughan is an excellent place to start.