



Open Access Archiving and Article Citations Within Health Services and Policy Research

Purpose

This study describes open access (OA) archiving practices within journals containing Canadian health services and policy research, and examines the association between OA status and citations to an article.

Data

Journals included were ones in which Canadian Health Services and Policy researchers publish most frequently and which have copyright policies allowing “green” OA archiving but no “gold” OA publishing.

For each of four core journals, we exported citation reports for all original articles from the years 2003-2005 from ISI’s Web of Science. These lists were validated against PubMed’s MEDLINE database resulting in a final set of 1,923 articles.

Using article titles, we searched in Google and PubMed in July 2007 in order to locate any OA archived copies. Articles for which archived copies could be found online were classified as OA (n=357, or 18.6%); all other articles were classified as non-OA.

We further classified articles into subject areas within health services and policy research by using the EBSCO interface to MEDLINE to retrieve subject headings deemed to be major topics of each article in our set (MeSH MAJR).

Analysis

We used descriptive statistics to describe archiving practices, and a two-stage analytic approach designed to test whether OA is associated with:

- likelihood that an article is cited at all, and
- total number of citations that an article receives, conditional on being cited at least once.

How does open access status correlate with citations?

Open access increased the likelihood that articles are cited at least once

Article attributes	Odds ratio	95% conf. interval
Open access	1.64	(1.11, 2.45)
Number of authors	1.20	(1.06, 1.36)

Journal		
Social Science & Medicine (reference)	1	
Health Economics	0.41	(0.14, 1.22)
Health Policy	0.24	(0.10, 0.58)
Journal of Health Politics, Policy & Law	0.47	(0.10, 2.18)

After adjusting for several potential confounders, OA archived articles were 64% more likely than non-OA articles to be cited at least once.

Among cited articles, open access articles were cited more often than non-open access articles

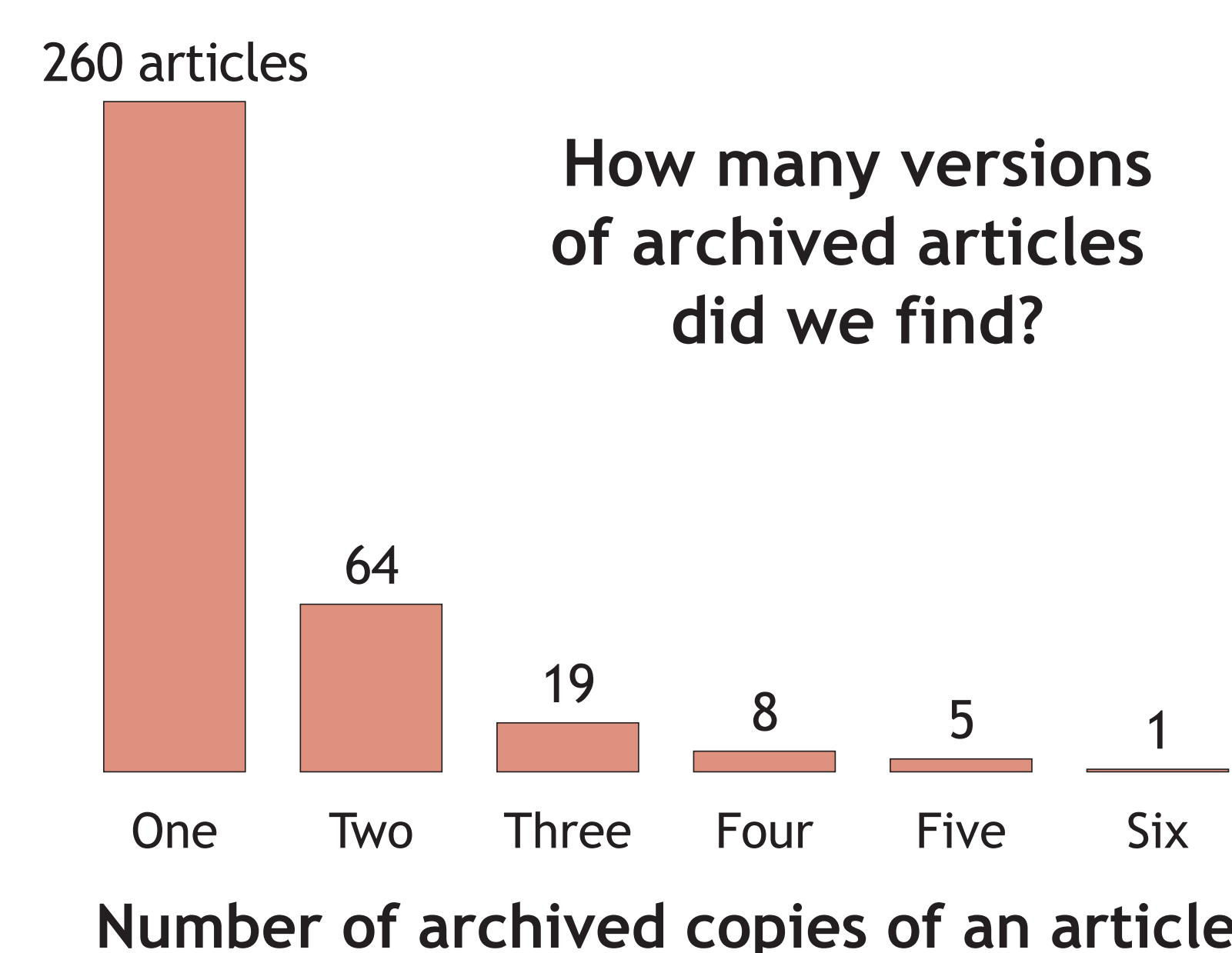
Article attributes	Regression coefficient	95% conf. interval
Open access	1.67	(0.61, 2.70)
Number of authors	0.84	(0.45, 1.24)

Journal		
Social Science & Medicine (reference)	1	
Health Economics	-2.02	(-4.07, -0.23)
Health Policy	-5.98	(-8.09, -3.87)
Journal of Health Politics, Policy & Law	-5.83	(-9.35, -2.32)

Cited open access had 1.67 more citations than cited non-OA articles. Given that the average number of citations was 5.71, OA articles were cited 29% more than comparable non-OA articles.

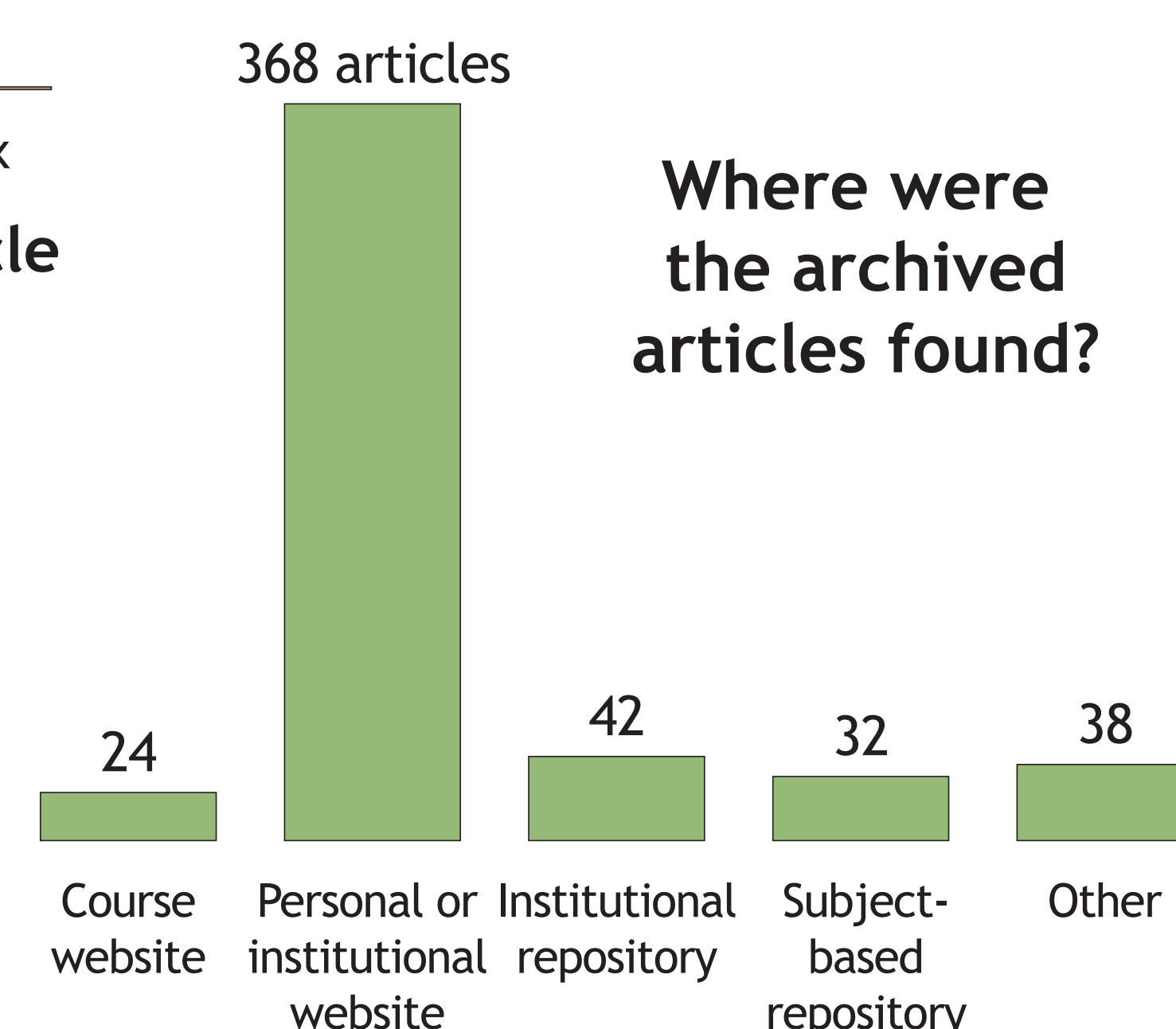
Where were the open access articles archived?

Archiving practices among the open access articles in our sample



Most open access archived articles were archived in only one location, although 28% were found in multiple locations online.

The majority of these archived copies (76%) were found on personal or institutional websites, with only 17% found in institutional or subject-based open access repositories.



Percentage of articles archived in different locations by journal

Location of archived copy	Social Science & Medicine	Health Economics	Health Policy	J Health Politics, Policy & Law
Course website	11%	3%	0%	4%
Personal or institutional website	77%	83%	80%	30%
Institutional repository	11%	15%	7%	4%
Subject-based repository	2%	21%	4%	4%
Other	6%	1%	16%	65%

Version of archived copy

Version of archived copy	Social Science & Medicine	Health Economics	Health Policy	J Health Politics, Policy & Law
Post-print version	49%	20%	48%	39%
Pre-print version	20%	70%	25%	13%
Unknown	45%	17%	38%	57%

Disciplinary culture and norms likely explain the different versions of archived copies, despite similar publisher policies. For example, economists have a strong tradition of sharing working papers, and Health Economics had a relatively high level of pre-prints and subject-repository archiving.

Results

After adjusting for factors related to the journal, subject matter and article, OA status is associated with a statistically significant 64% increase in the likelihood that an article will be cited at least once.

Controlling for journal, number of authors (one, two, three, or four or more authors), time since publication, and subject, cited OA articles had 1.67 more citations than cited non-OA articles.

The majority of articles that were made OA were archived in just one location, and archived copies were found primarily on websites rather than in institutional or subject-based repositories.

Limitations

- Cross-sectional, retrospective design; no data on data of archiving
- JCR/ISI citation data alone used; other measures of impact might add dimensions
- Three-year window; limited follow-up
- Additional author information might help investigate “quality bias” theory of OA archiving

Discussion

It appears that there may be a citation “advantage” associated with articles made OA in this field. Whether this advantage is solely a result of OA status cannot be confirmed from this data alone.

It is concerning that the vast majority of archived copies appear to be on websites, as findability and preservation of these archived copies may be inferior to those in centralised institutional or subject-based repositories.

►► Acknowledgements

Project supported by the Centre for Health Services and Policy Research (CHSPR). CHSPR is supported in part by the BC Ministry of Health. Views presented here are solely those of the authors and not necessarily those of CHSPR or the BC Ministry of Health. Special thanks to Desy Wahyuni for her assistance with the data collection and subject mapping.