

Do online library collections impact faculty productivity?

Sandra De Groote, Jung Mi Scoulas,
Paula Dempsey, and Felicia Barrett
University of Illinois Chicago, University Library

BACKGROUND

Over the past 25 years, how faculty search for and access information has changed greatly. Where once faculty had to enter the physical library to access information, now online databases and journals dominate the information landscape in many disciplines. This research seeks to demonstrate how the availability and use of online library collections has affected faculty publication patterns and increased and impacted faculty productivity.

OBJECTIVES / About UIC

Objectives

This research aims to examine:

- In what ways do faculty publication patterns change as the library's collection size changes over time?
- To what degree do faculty publication patterns differ by discipline?
- Are there correlations among faculty collection use and their productivity?
- In what ways do patterns of faculty productivity and publication patterns vary over time?
- What other variables (e.g., faculty demographics, co-authorship and grant funding) influence faculty productivity?

About UIC

This study took place at the University of Illinois Chicago (UIC), a large urban Research 1 university with 16 colleges.

Journal Collections & Databases

- Between 1995 and the library had approximately 15,948 active print journal subscriptions.
- Late 1990s, library began to license online journals
 - 1998 - 15 biomedical journals
 - 1999 - 204 online journals
 - 2000 - more than 3,000 online journals
 - 2008 - 25,000 online journals
 - 2019 - 28,000 online journals

Databases & OA Resources

- 1996 – Internet Grateful Med (public)
- 1998 - PubMed (public)
- 2004 – Google Scholar (public); Scopus (licensed)
- Also increase in OA journals and repositories

METHODS

Faculty publication data source: To retrieve the publication of each faculty member, publications for each identified faculty member were retrieved from Scopus. Faculty had to be at UIC for 5 to 25 years to be included. Publications in Scopus were limited to Document Type “articles.” 803 faculty from applied health science, business administration, medicine, dentistry, education, engineering, library, natural sciences, nursing, pharmacy, public health, social sciences, social work, and urban planning & public affairs were included in the study.

Data collection

The following information was captured for each faculty member's publications:

- Full citation (authors, title, publication year, journal name, page numbers)
- Number of references in the publications
- Grant funding (measured by whether the article was funded)
- Co-authorship size (measured by number of co-authors)

The following information was captured for each faculty member:

- Faculty productivity (measured by number of publications per faculty member) in 5-year increments
- Average references per article in 5-year increments
- Average citations per article in 5-year increments
- Average authors per article in 5-year increments
- Faculty demographics (e.g., college, rank, years at the institution)

RESULTS

Table 1. Publication demographics over time

	1995-1999	2000-2004	2005-2009	2010-2014	2015-2019
Total publications	1178	1972	3967	6827	10758
No. authors studied	118	224	376	582	803
Aver. pub / author	10	8.8	10.55	11.7	13.4
Avg. co-authors / pub	4.5	5	5.47	6.66	12.76
Avg. references / pub	29.52	35.24	37.5	40.87	44.32
Avg. citations first 5 years / pub	10.64	12.65	13.76	14.26	n/a

- Negative non-significant correlation between faculty productivity and publications

Figure 1. Average No. References and Average No. of Authors by Productivity Level

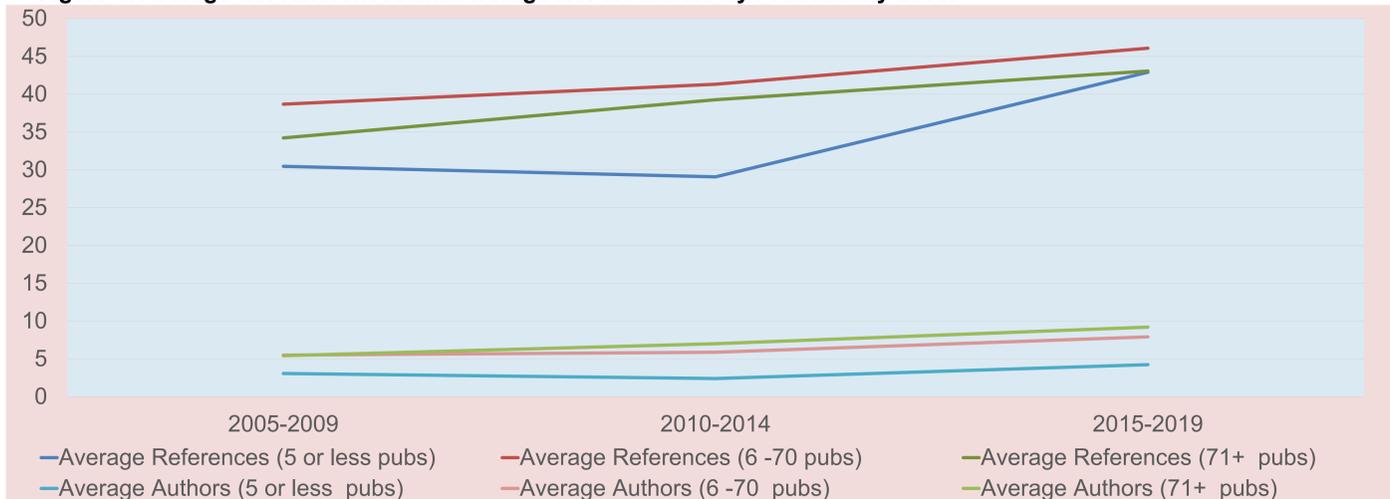
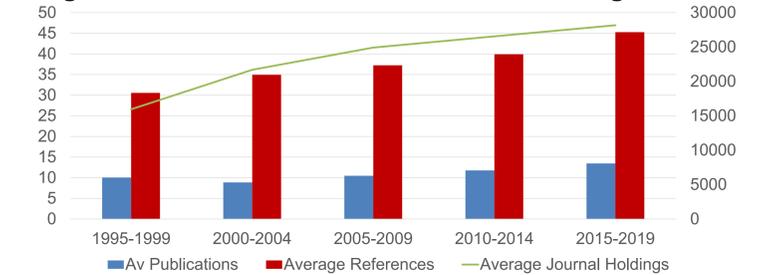


Figure 2. Publication Data and Journal Holdings



Publication Patterns by Discipline

- Most colleges saw an increase in publications over time
- All disciplines, except for nursing, increased references in publications over time

Other Variables Influencing Publications Patterns

- More productive authors have more co-authors
- Articles with more co-authors cited more
- Articles with more references cited more
- Grant-funded articles include more references and are cited more

CONCLUSIONS AND RECOMMENDATIONS

- Correlation between increasing online journal collections and increased references in articles.
- Many confounding variables that also likely played a role in increased references in articles – Open access journals, open access repositories, OA funding mandates, increased online databases to find articles and improved seamless between searching and access to full-text.
- Faculty productivity is related to use of the collection; prolific faculty use less references in publications than productive faculty; productive faculty use the most references in publication; less productive faculty use the least references in publications.
- Faculty productivity and co-authorship is increasing.
- Understanding the change in faculty publication patterns and disciplinary differences can provide insight into how faculty use the collections and growing participation in team science.