

DEMONSTRATING LIBRARY VALUE

A PRACTICAL APPLICATION OF CITATION ANALYSIS AND WEB-SCRAPING TECHNIQUES

We analyzed the references that Pacific University authors used in their research and whether they are available through the Pacific University Libraries.

MISSION TO VALUE

What is the Libraries' value? We consider our mission to be central to the Libraries' value.

To advance critical inquiry, collaborative learning, and **KNOWLEDGE CREATION** through dynamic services, spaces, and **COLLECTIONS**.

We took a close look at how the Libraries advance knowledge creation through collections.

WEB-SCRAPING

Web-scraping uses automation to collect data from websites. We used **Ruby**, a coding language, and **Watir**, a library of code which allows you to program a browser (in Ruby) to do things like click links, enter text in search boxes, and copy data from a webpage. Using Ruby and Watir together, we created a program which can read search terms from a spreadsheet, go to a specific page to run the search with those terms, and collect information about the search results in a spreadsheet.

DATA SOURCES

We used two main sources. **Web of Science** was used for data about Pacific publications and the works cited in those publications. **Primo**, our discovery layer, was used for data about library holdings. By using web-scraping on two different data sources, we were able to ask (and answer) more sophisticated questions about resource use and availability. **CAVEAT:** The accuracy of our results depends on the accuracy of our source data.

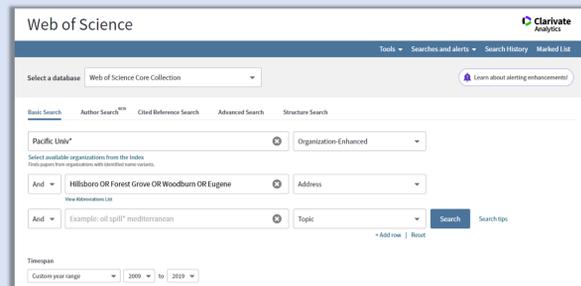


Pacific University Libraries
Laura Baird, Systems & Applications Librarian
Lynda Irons, Research & Instruction Librarian

DO WE ADVANCE KNOWLEDGE CREATION?

1 What knowledge does Pacific create?

Search **Web of Science** for publications



List of Pacific publications

2 What is used for creation?

Web-scraping with Ruby & Watir



For each Pacific publication
Search Pacific publication
Get reference citations for publication
Add citations to master list

List of works used in Pacific publications

3 Do we make it available?

Web-scraping with Ruby & Watir



For each work used
Find publication in Primo
Collect availability data

List of works used in Pacific publications
available thru the library

This data was collected Fall 2019. Holdings and publications may have changed.

RESULTS

For Pacific University

Most of the works cited by Pacific authors are available through the Libraries.

78% of cited works available

The most commonly used journals, databases, or platforms provide the majority of cited articles.

6,632 references came from **2,123** sources

80% of available articles from top **20** databases

A large number of journals or books were used infrequently.

56% were cited only once

71% were cited twice or less

Open source or free journals or databases account for some availability, but probably not enough to support research without additional subscriptions.

17% of available works were free

83% of cited works available were provided via subscription

CONCLUSION

We found that we **do** advance knowledge creation by providing online access to articles, books, and more, at an unexpectedly high availability rate. The use of these resources, cited in published scholarship, demonstrates the value of the library collection.