Data mining of Citations in Theses:
a workflow for automated analysis of Open Access and library holdings coverage

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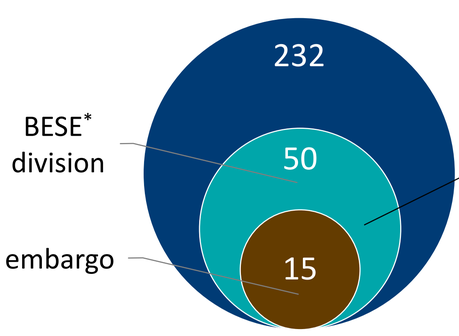
KAUST theses 2016 - 2018



* Biological and Environmental Science and Engineering

sample of 35

determined librarian

Metadata from Crossref

7,429 citations…

…to **7,107 resources**

Objectives

- Assess library collection coverage of resources used in doctoral dissertations
- How many of those resources are Open Access?
- Complete and compare with other resource usage metrics

Book, book chapter, conference: 462

38% DOI

62% no DOI

✓ in holdings?
✗

✓ 15 **Summon** DOI?

Crossref add ISBN

✓ 10 ebooks static list?

✓ 102 **Summon**
✗ 31 ISBN?

✓ 23 **Summon**
✗ 125 title + 2 authors?

total:
✓ 150
✗ 156
? 156

Journal articles: 6,416

91% DOI

9% no DOI

✓ 5,213 **Summon**
✗ 809 title + 2 authors?

Crossref add ISSN

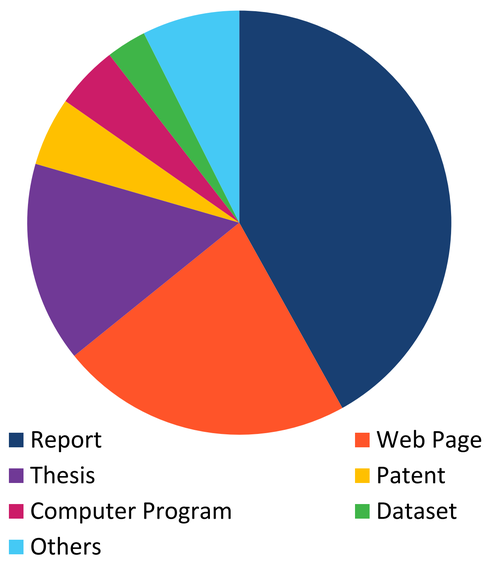
✓ 199 **Summon**
✗ 53 ISSN + year?

CORE

unpaywall

total:
✓ 5,412
✗ 862
? 142

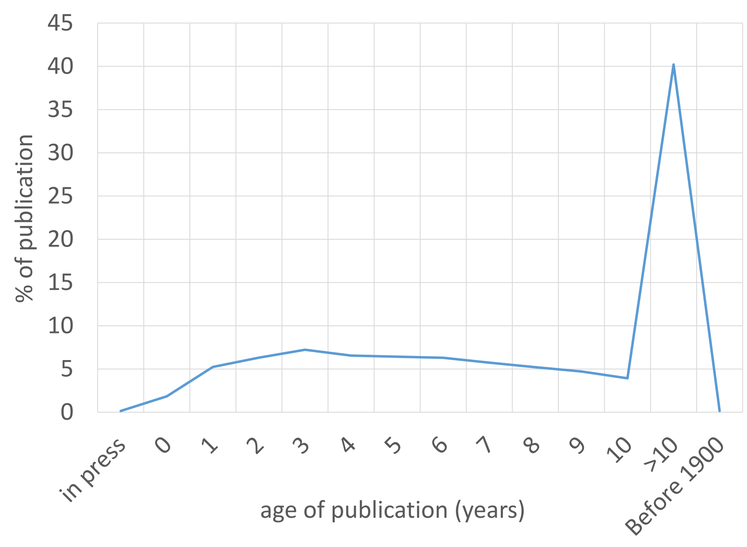
Others: 229



Findings

- Library holdings cover:
  - 84% of journal articles cited
  - 49% of the matched books, book chapters and conference proceedings (51% remained without conclusive coverage outcome)
- OA coverage of resources with DOI:
  - 49,8% of journal articles
  - 17,6% of books, book chapters and conference proceedings
- 20% of journal titles account for 73.6% of article citations (80/20% rule)
- Difficult to obtain accurate coverage information from the API of the discovery platform
- CORE and Unpaywall invaluable for OA versions and complement each other nicely (32% overlap for journal articles and 6% for books)
- Nearly 70% of cited resources published > 5 years ago

Age of Publication Cited



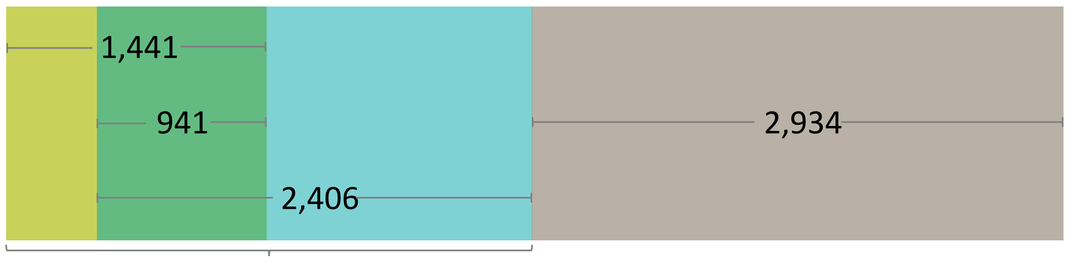
Open Access coverage

CORE Unpaywall not OA

Book, book chapter, conference with DOI: 176

31 (17.6%)

Journal articles with DOI: 5,840



2,906 (49.8%)

Future work

- Automation of Metadata extraction from Crossref
- Refine workflow to increase accuracy and minimize false matches
- Expand OA coverage analysis to resources without DOI using other metadata
- Extend study to all doctoral dissertations and other scholarly output