# OPEN METADATA SOURCES

## COMPARING OPENALEX TO CROSSREF

DATE: 08 OCTOBER 2022

[PRELIMINARY VERSION]

# Executive Summary

In January 2022, OpenAlex was launched as a source of open bibliographic metadata. Intended both as a replacement of and improvement on Microsoft Academic, it provides structured data on publications, authors, institutions and publication venues.

In this project, we assess and compare the value added by OpenAlex to Crossref metadata, both in coverage of publications and other research output (with and without DOIs) as well as in coverage of metadata (including identifiers) for authors, institutions, publication venues and disciplines.

The report currently contains all the graphs comparing metadata coverage of OpenAlex compared to Crossref, and of DOIs vs non-DOIs in OpenAlex, as well as some basic tables. More explanatory text and interpretation of findings will be added in a later version.

Complete data and code are available on Github:
https://github.com/Curtin-Open-Knowledge-Initiative/open-metadata-report
All images and data belonging to this report are located in the directory reports\run_20221008_2 in this repository.

# Introduction and Background

In January 2022, OpenAlex was launched as a source of open bibliographic metadata. Intended both as a replacement of and improvement on Microsoft Academic, it provides structured data on publications, authors, institutions and publication venues.

Many tools, projects and services relied on Microsoft Academic as source of largely open metadata, and might consider switching to OpenAlex. More broadly, the launch of OpenAlex has increased interest in the potential of open metadata to enable discovery, linking and integration of data on research processes and outputs.

Unlike metadata from closed sources, open metadata can be combined and enriched to provide a rich open metadata landscape. Transparency and provenance allow identifying and addressing existing gaps and biases in coverage and quality.

In this project, we assess and compare the value added by OpenAlex to Crossref metadata, both in coverage of publications and other research output (with and without DOIs) as well as in coverage of metadata (including identifiers) for authors, institutions, publication venues and disciplines.

# Data sources

This report was run using the following tables as source data:

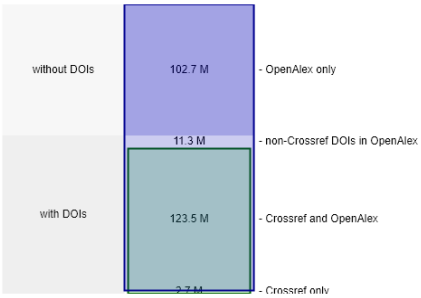
- Crossref: academic-observatory.crossref.crossref_metadata20220807
- OpenAlex: academic-observatory.openalex.Work_snapshots20220828

Complete data and code are available on Github:
https://github.com/Curtin-Open-Knowledge-Initiative/open-metadata-report
All images and data belonging to this report are located in the directory reports\run_20221008_2 in this repository.

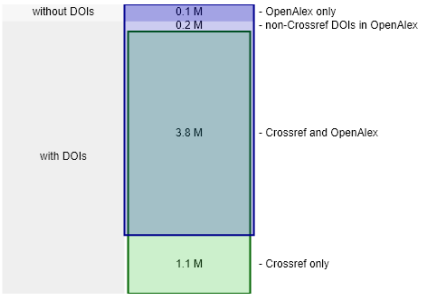
# Coverage of OpenAlex vs Crossref

## Comparing coverage

### Overview

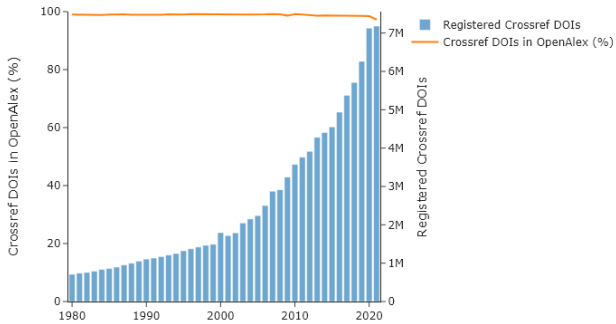



overall comparison - all time

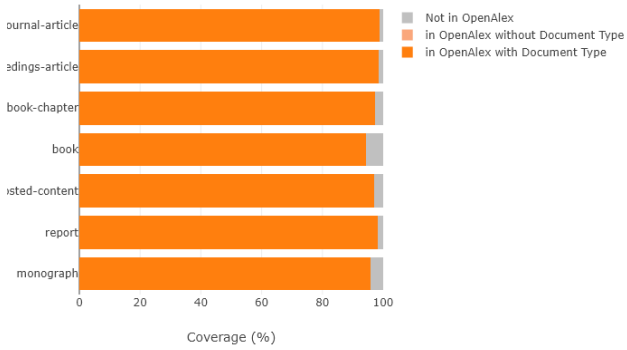



overall comparison - 2022

### By year and publication type




coverage by publication date - all time

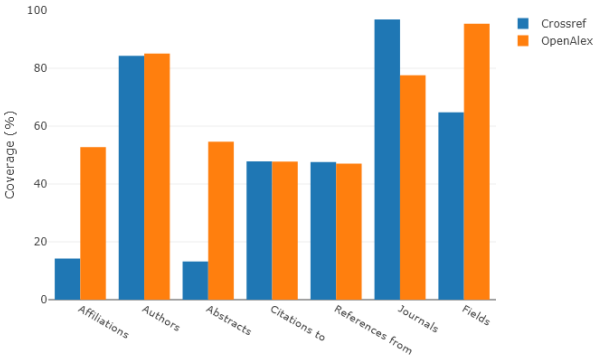



coverage by publication type - all time

# Value Add of OpenAlex to Crossref

**Overview**

Comparing coverage of metadata types in Crossref and OpenAlex

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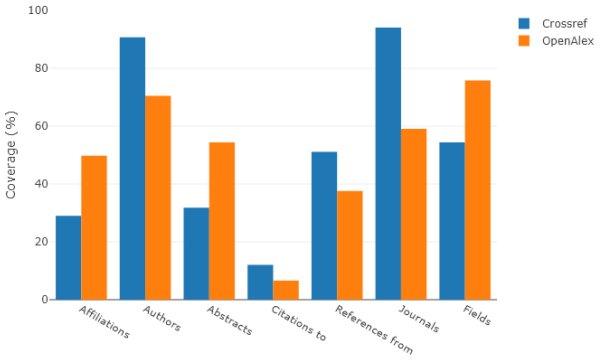


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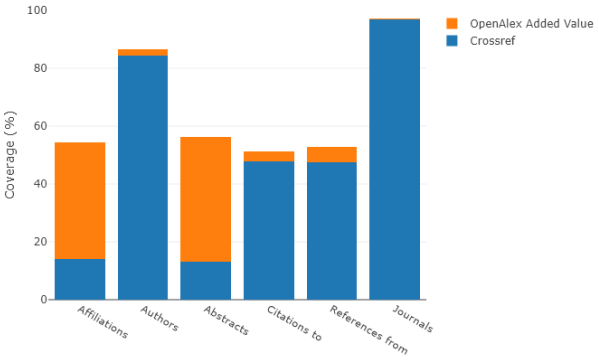


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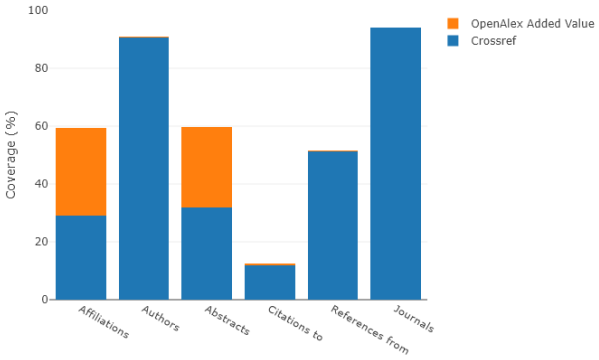


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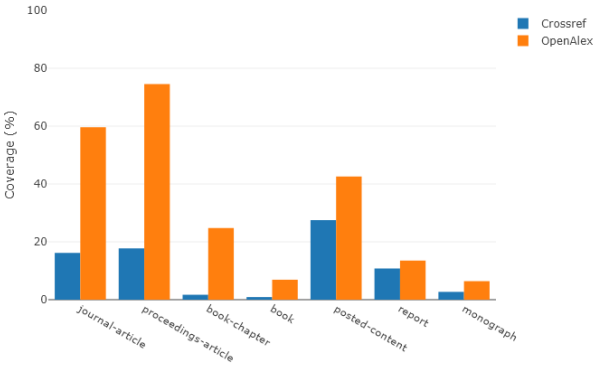
## Details

Metadata coverage in OpenAlex and Crossref by publication type

## Affiliations

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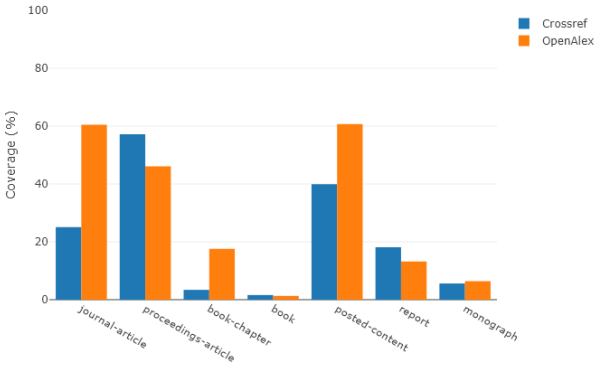


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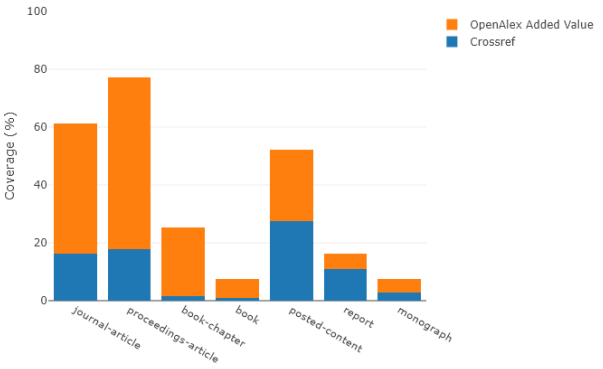


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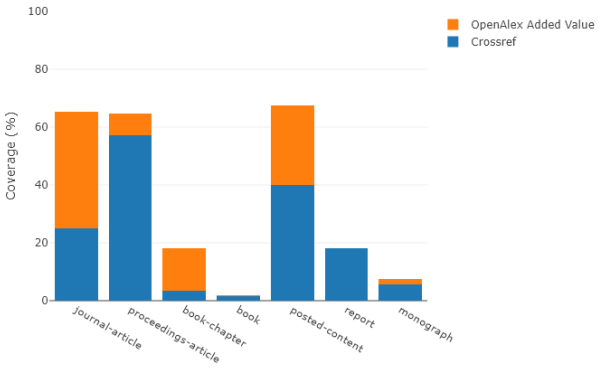


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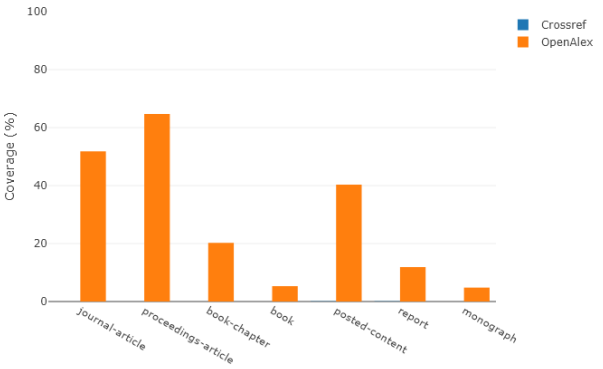


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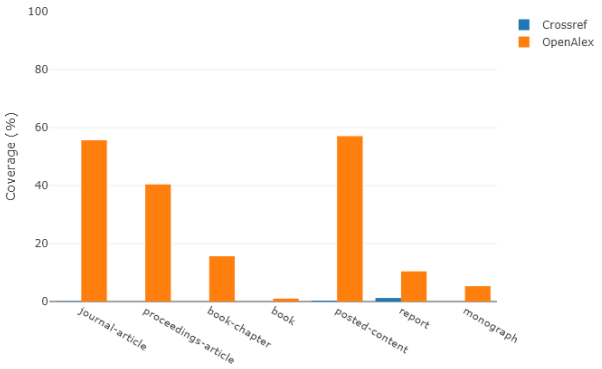


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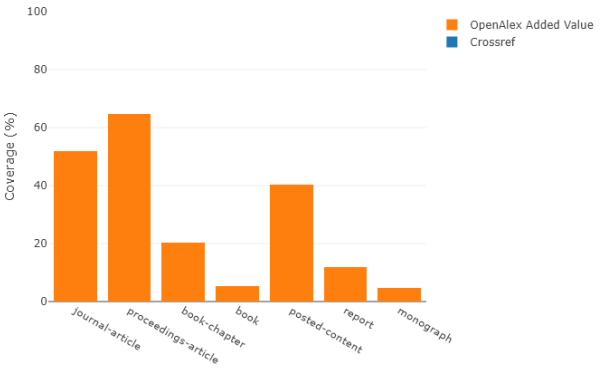


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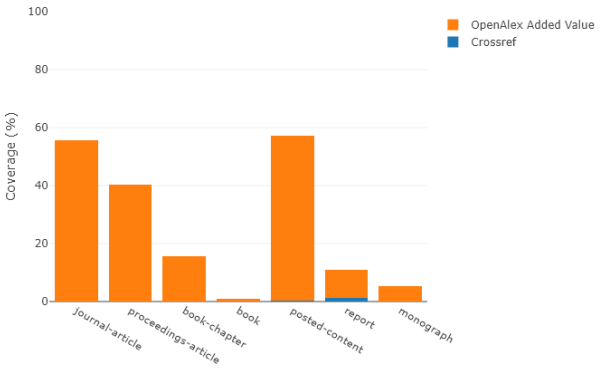


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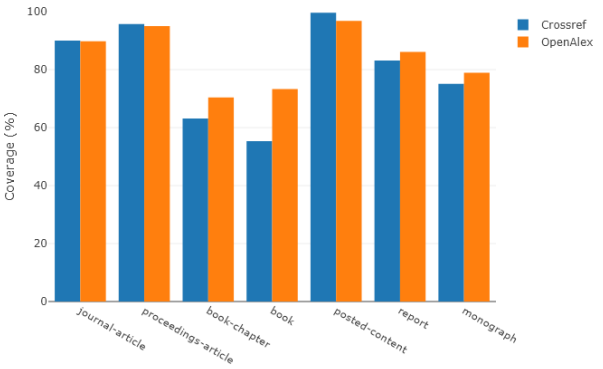
## Authors

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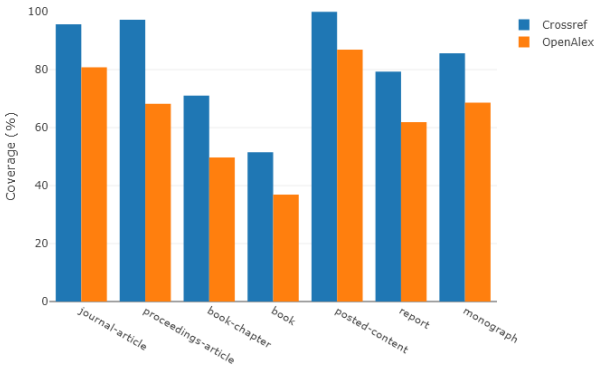


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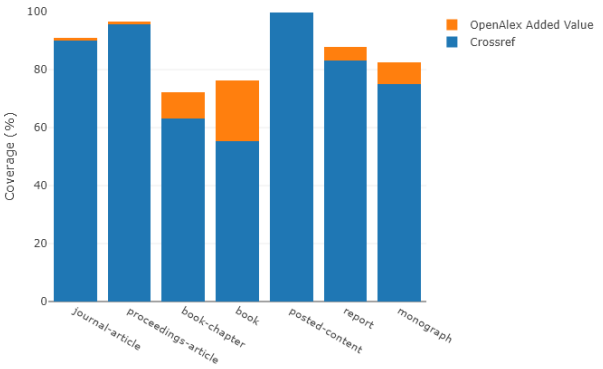


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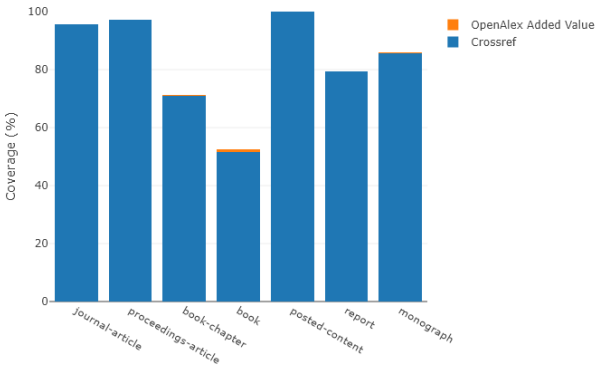


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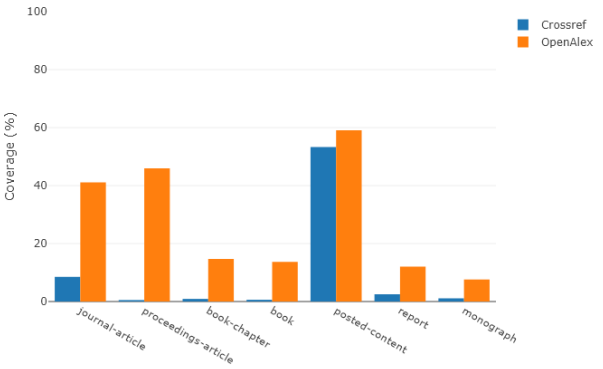
## Authors ORCIDs

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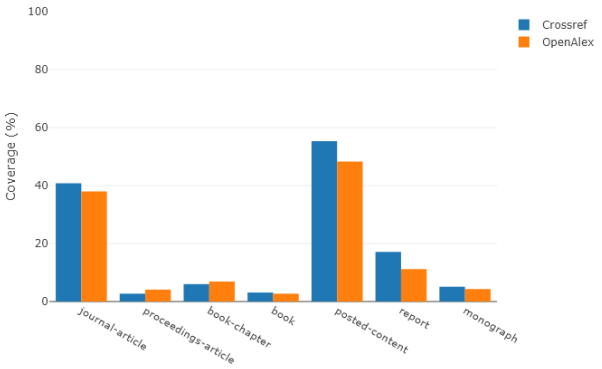


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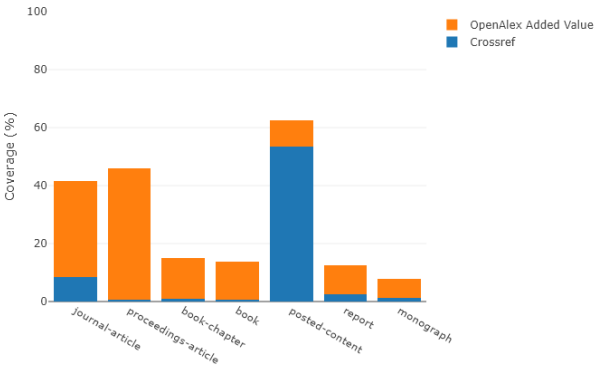


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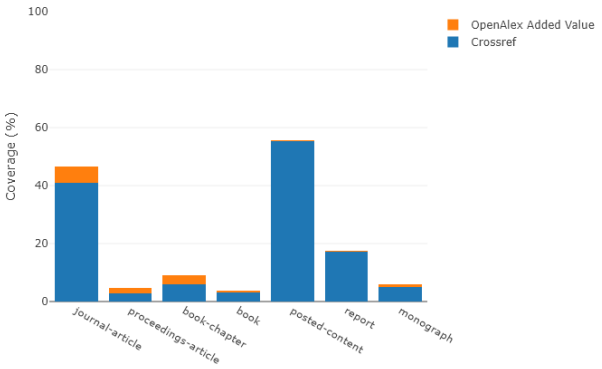


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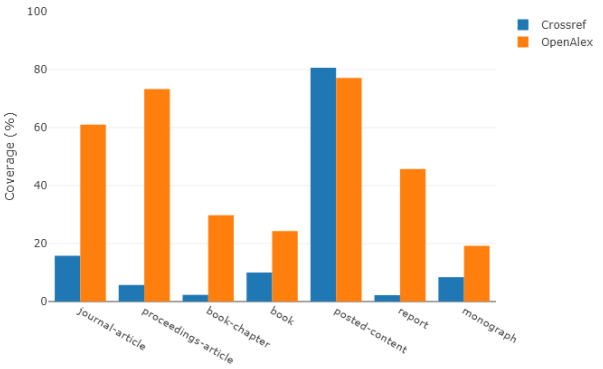
## Abstracts

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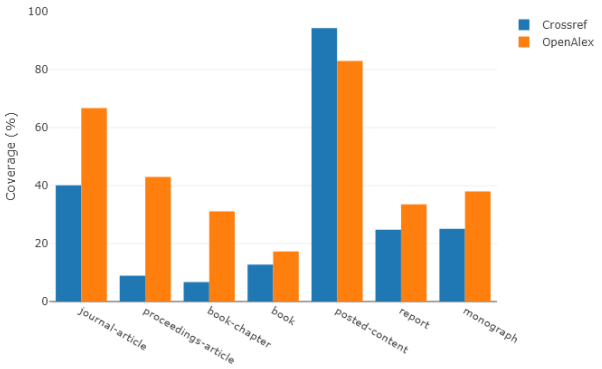


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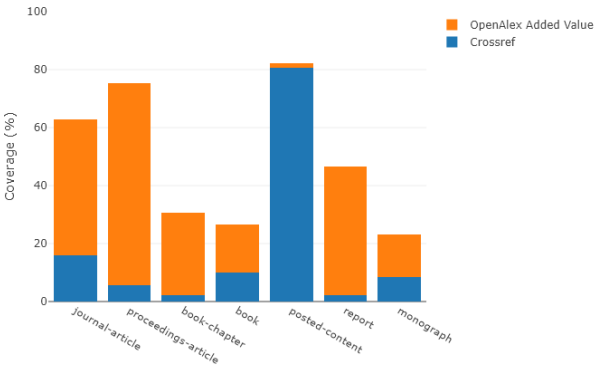


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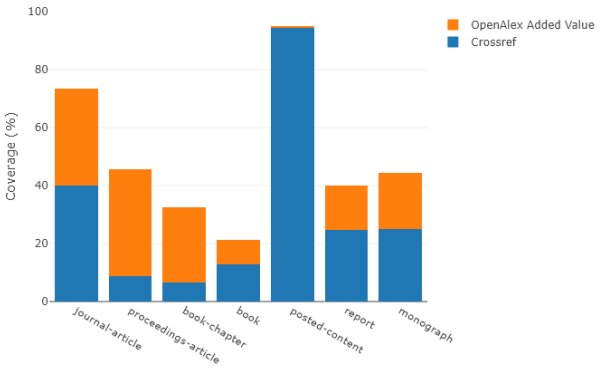


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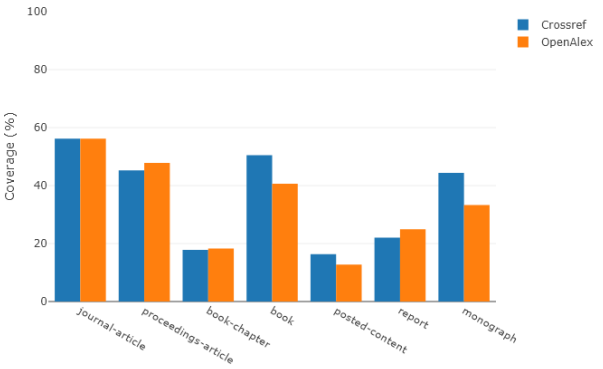


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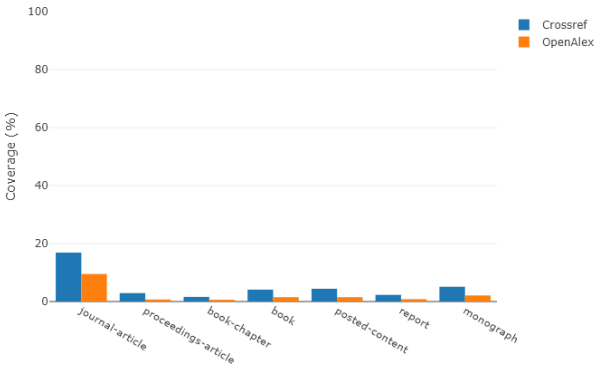


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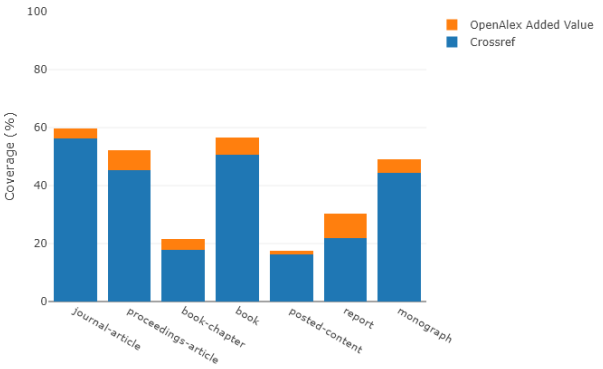


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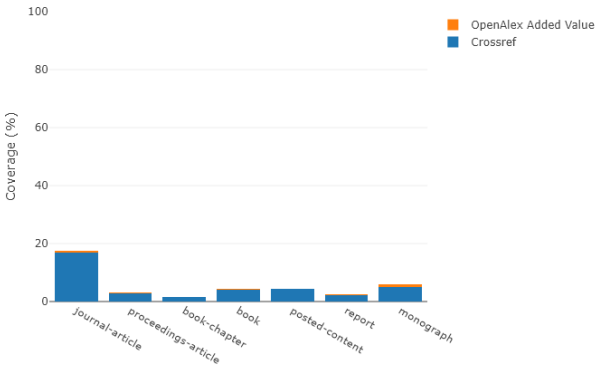


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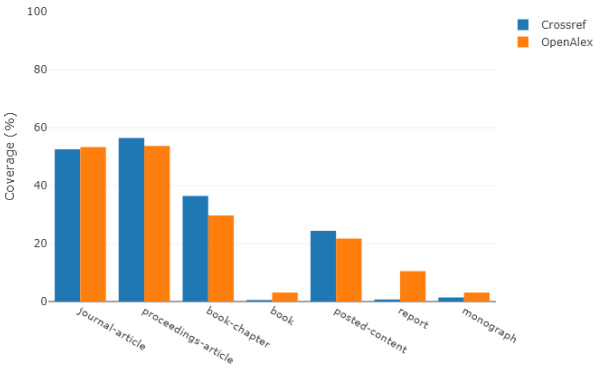


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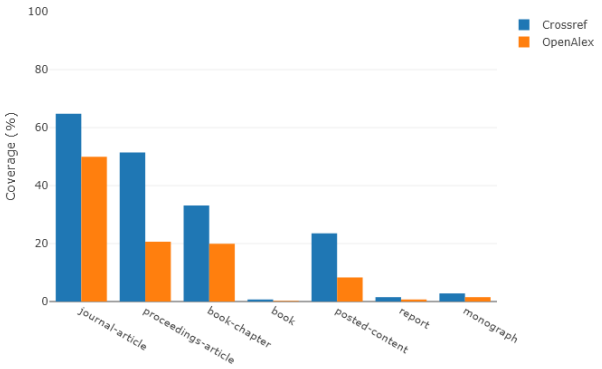


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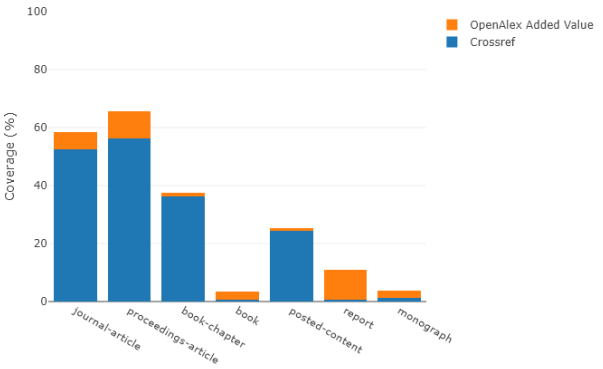


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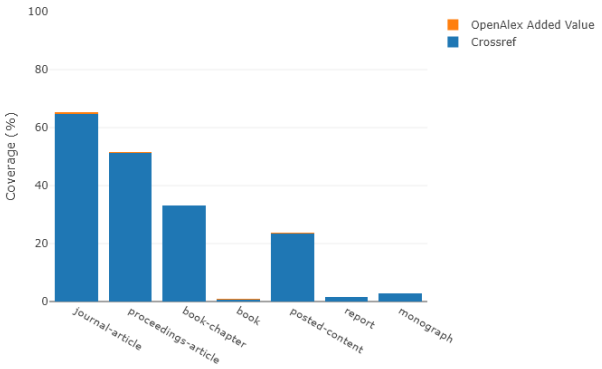


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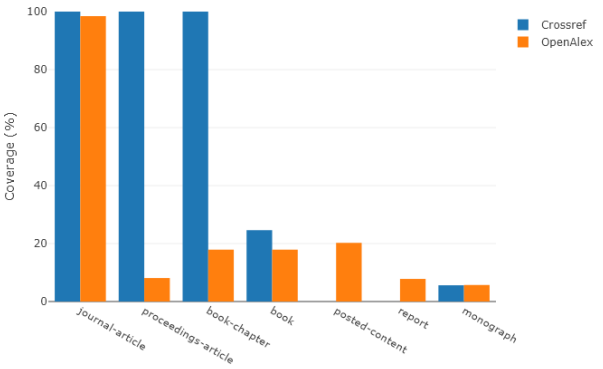
## Journals

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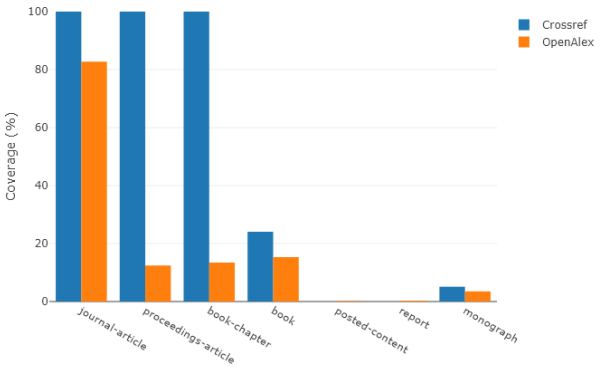


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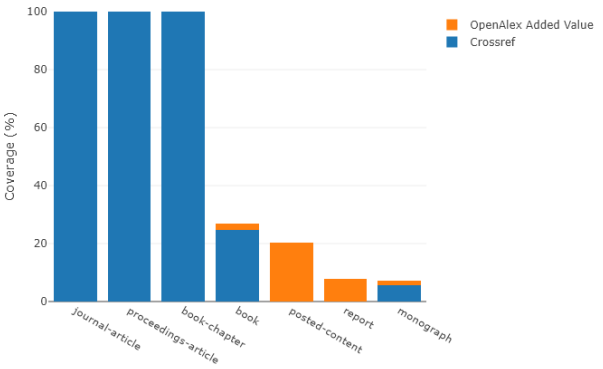


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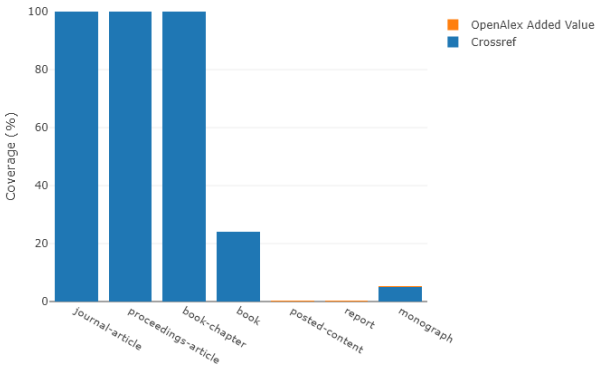


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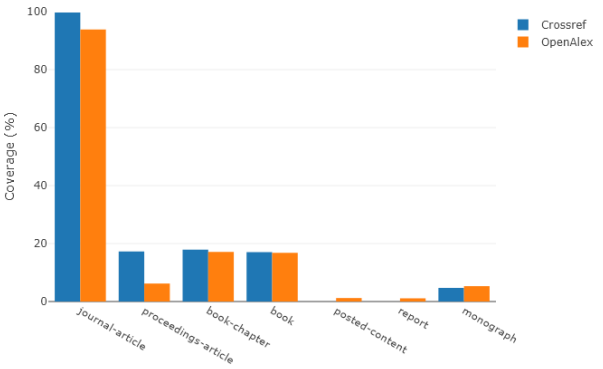
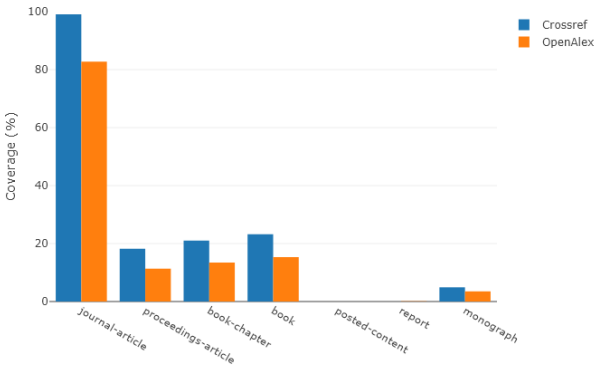



coverage comparison - all time

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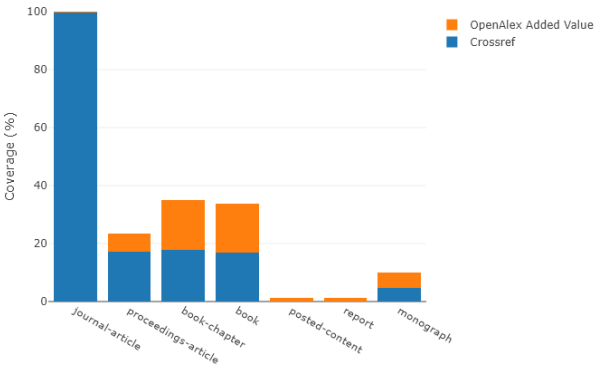


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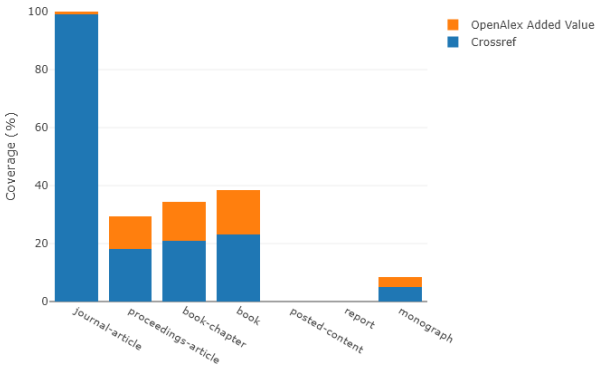


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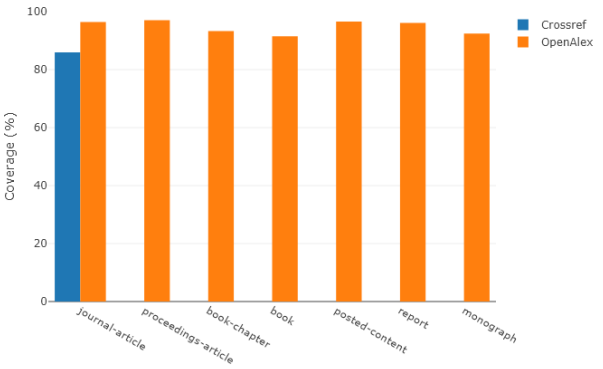
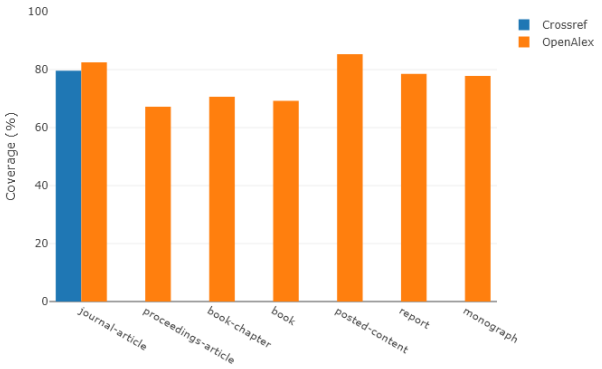
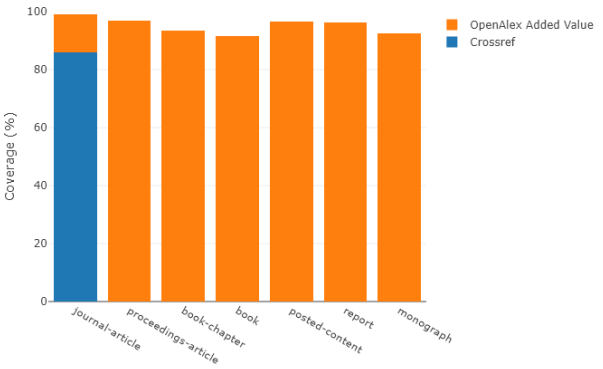


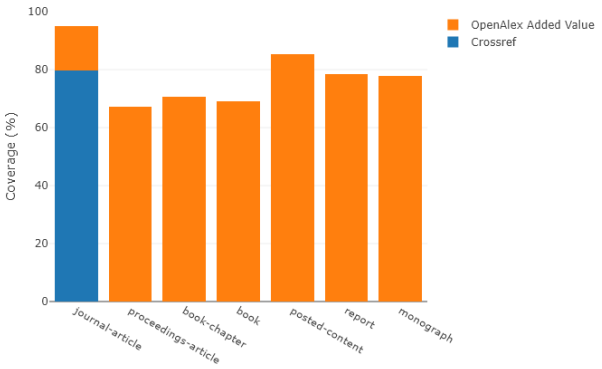

coverage comparison - all time




coverage comparison - 2022




coverage added value - all time

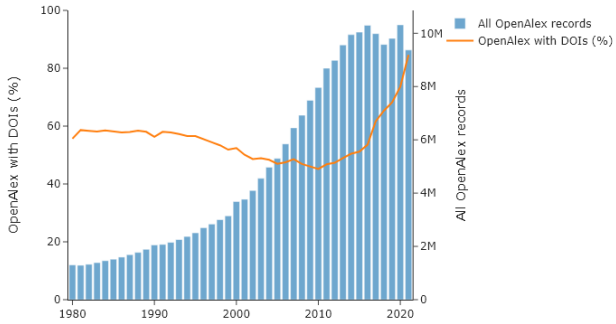



coverage added value - 2022

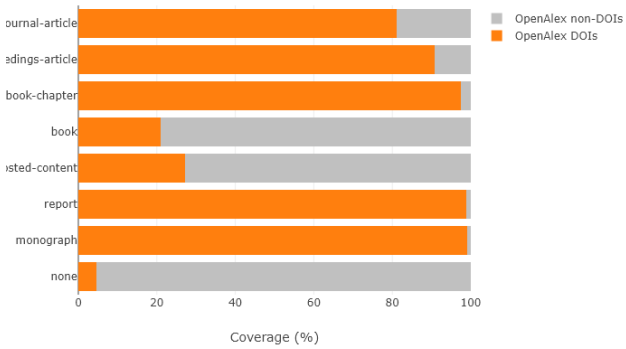
# OpenAlex Coverage Beyond Crossref

## DOIs vs non-DOIs

**By year and publication type**




coverage by publication date - all time

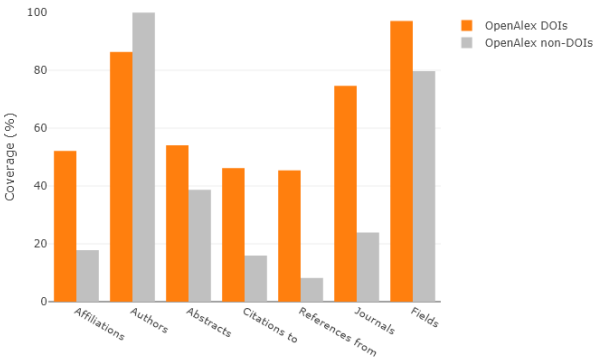



coverage by publication type - all time

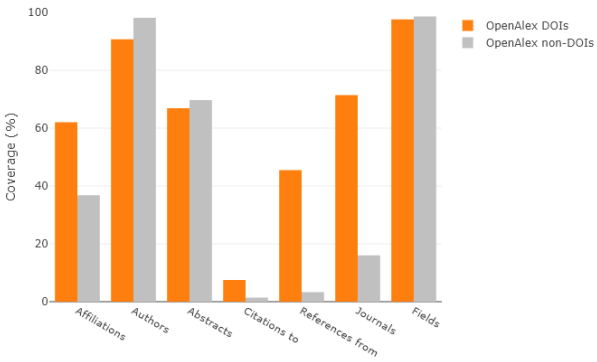
# Metadata Coverage

**Overview**

Comparing coverage of metadata types for DOIs and non-DOIs in OpenAlex




coverage comparison - all time

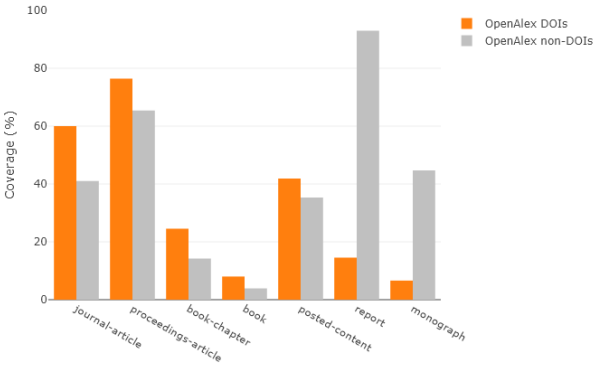



coverage comparison - 2022

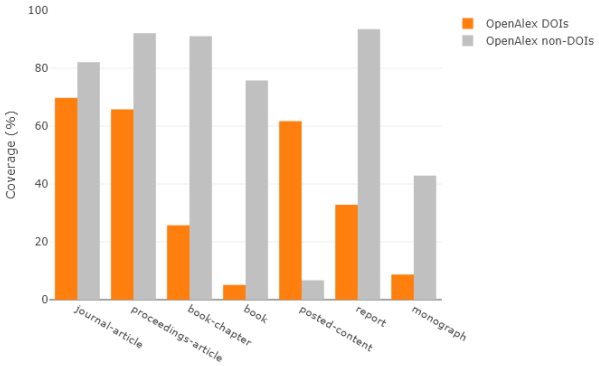
## Details

Metadata coverage for DOIs and non-DOIs by publication type

## Affiliations

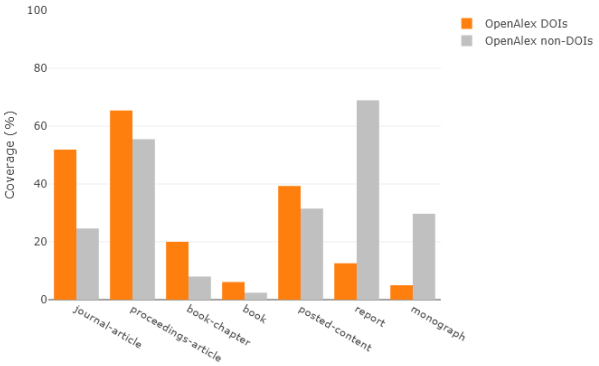



coverage comparison - all time

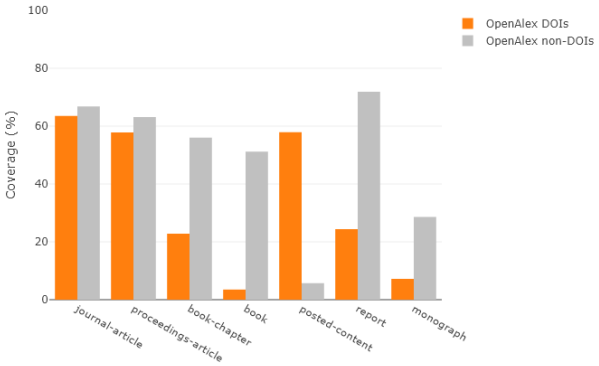



coverage comparison - 2022

## Affiliations ROR

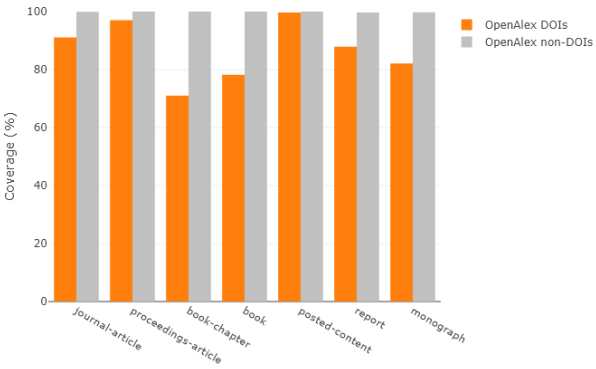



coverage comparison - all time

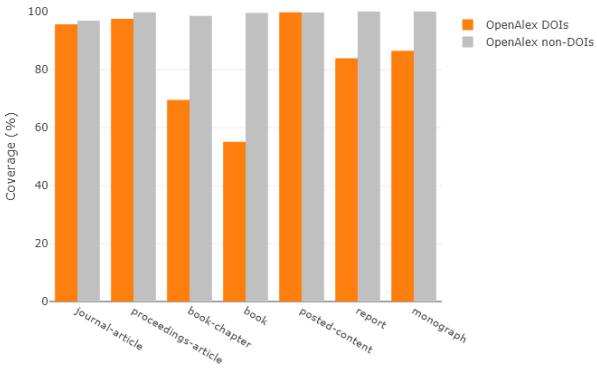



coverage comparison - 2022

## Authors

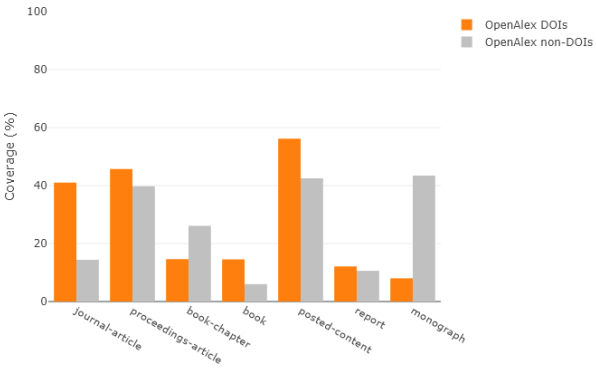



coverage comparison - all time

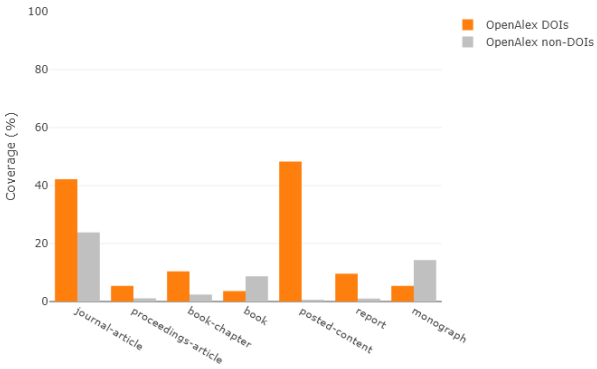



coverage comparison - 2022

## Authors ORCIDs

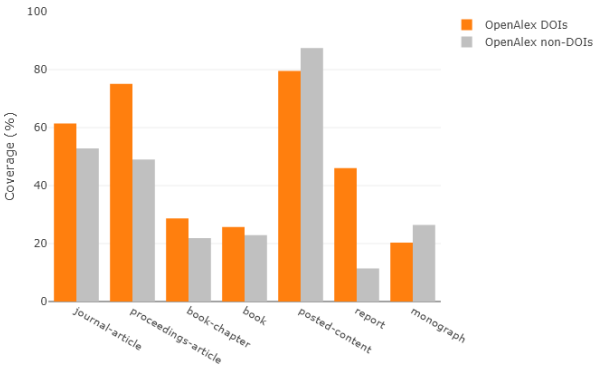



coverage comparison - all time

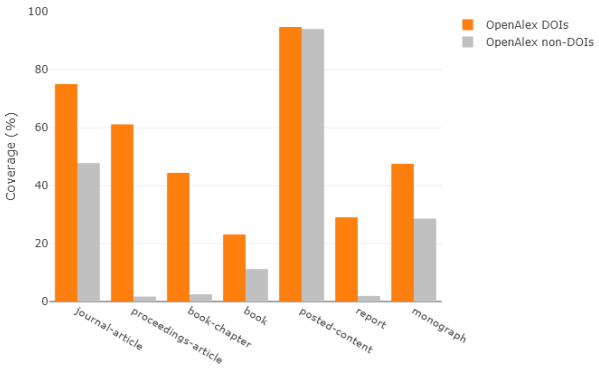



coverage comparison - 2022

## Abstracts

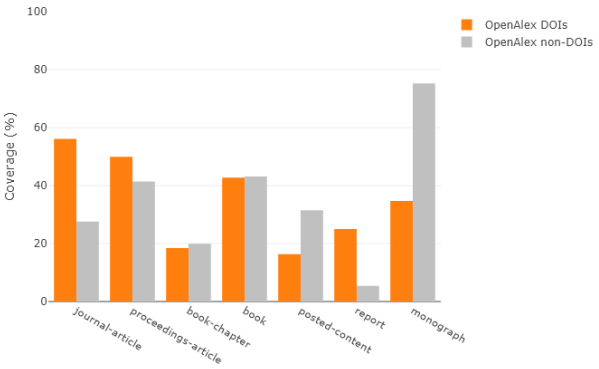



coverage comparison - all time

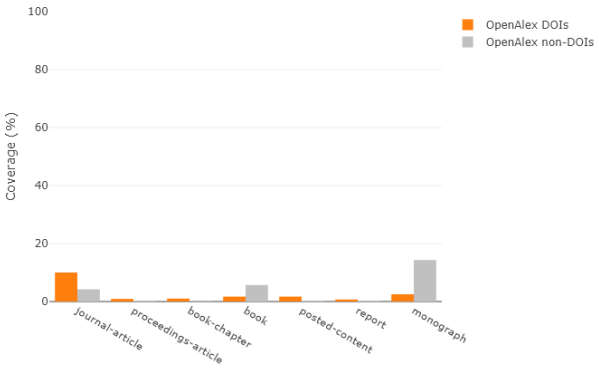



coverage comparison - 2022

## Citations to

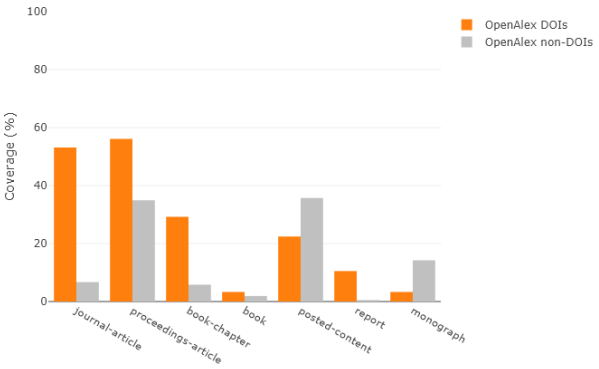



coverage comparison - all time

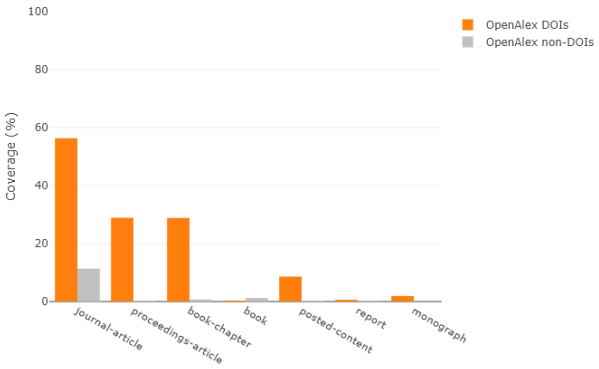



coverage comparison - 2022

## References from

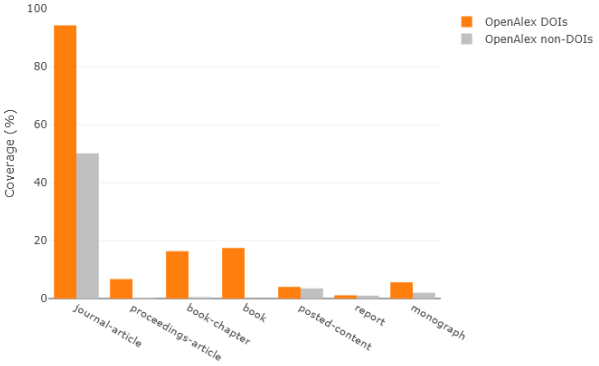



coverage comparison - all time

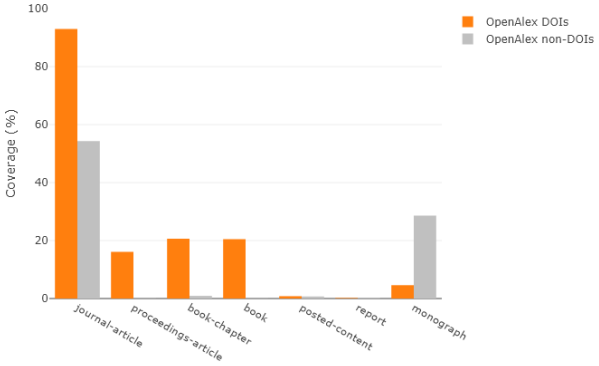



coverage comparison - 2022

## Journals ISSN

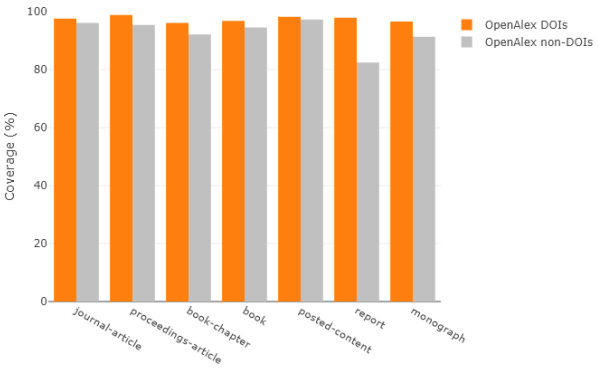



coverage comparison - all time

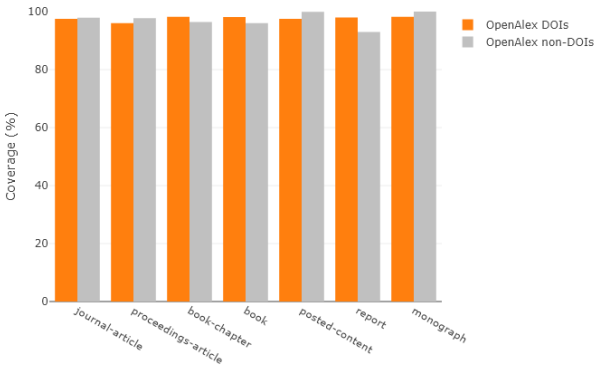



coverage comparison - 2022

## Fields




coverage comparison - all time




coverage comparison - 2022

# Appendix A - Tables

This section contains tables with summary counts. More tables will be added in a later version.

Crossref Current = 2020-2022
Focus Year = 2022

### OpenAlex Coverage

**Table 1.** OpenAlex Metadata Coverage of Crossref DOIs

| Time Frame | Crossref DOIs | OpenAlex Coverage of DOIs |
|---|---|---|
| All Time | 126195148 | 123523915 |
| Crossref Current | 19167370 | 17775131 |
| Focus Year | 4858002 | 3775195 |

### Crossref Coverage

**Table 2.** Crossref Metadata Coverage of Crossref DOIs

| Time Frame | Crossref DOIs | Author Strings | Author ORCIDs | Affiliation Strings | Affiliation RORs | Abstracts | Field Classification | Venue Names | ISSNs |
|---|---|---|---|---|---|---|---|---|---|
| All Time | 126195148 | 106418102 | 8956313 | 17939433 | 8728 | 16710024 | 81738305 | 122254962 | 99454053 |
| Crossref Current | 19167370 | 16867676 | 5352151 | 4329959 | 7038 | 5957525 | 10046004 | 17898609 | 13789738 |
| Focus Year | 4858002 | 4408487 | 1484271 | 1410576 | 4990 | 1546615 | 2642670 | 4570259 | 3480544 |