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_1 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:

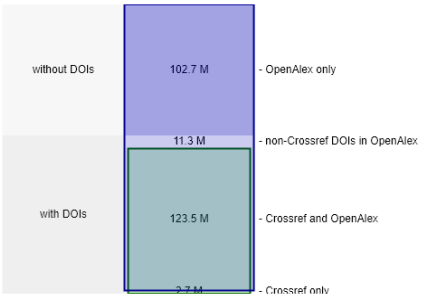
- Crossref: academic-observatory.crossref.crossref_metadata20220807
- OpenAlex: academic-observatory.openalex.Work_snapshots20220828

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_1 in this repository.

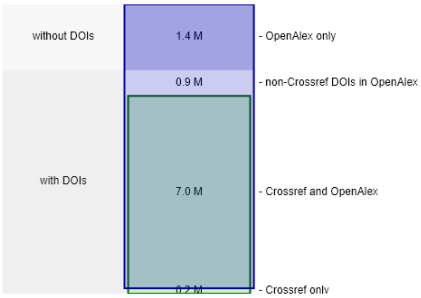
Coverage of OpenAlex vs Crossref

Comparing coverage

Overview

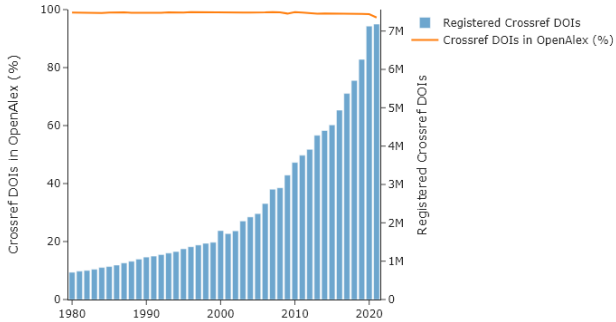


overall comparison - all time

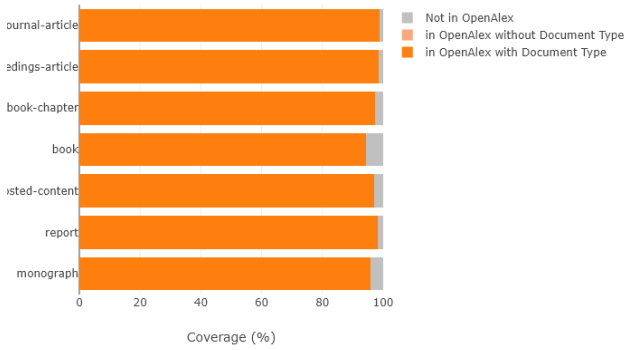


overall comparison - 2021

By year and publication type



coverage by publication date - all time

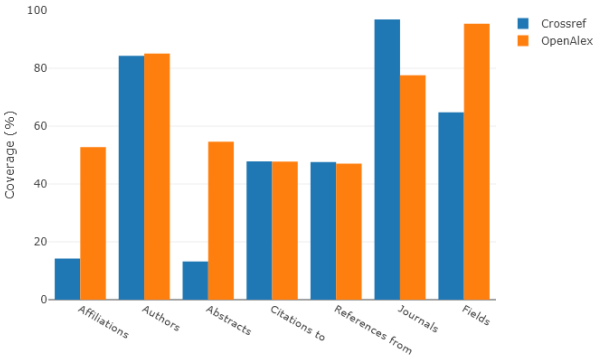


coverage by publication type - all time

Value Add of OpenAlex to Crossref

Overview

Comparing coverage of metadata types in Crossref and OpenAlex



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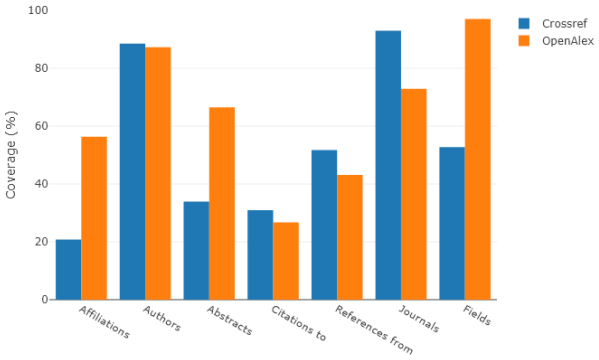

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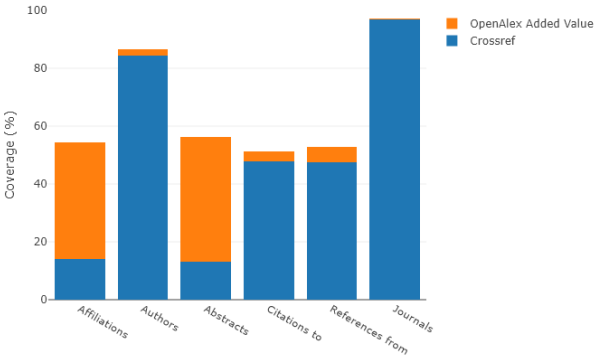

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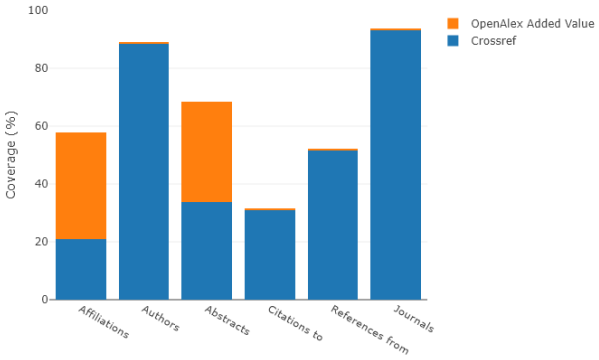
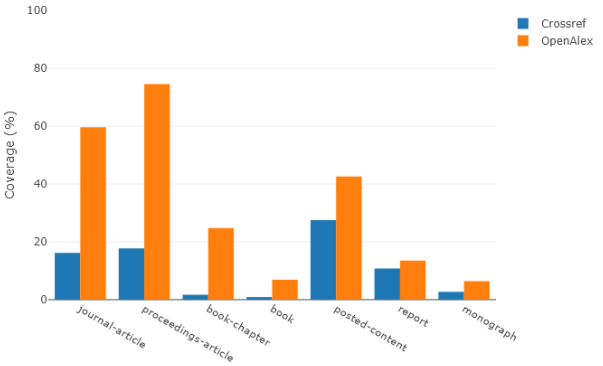


coverage added value - 2021

Details

Metadata coverage in OpenAlex and Crossref by publication type

Affiliations



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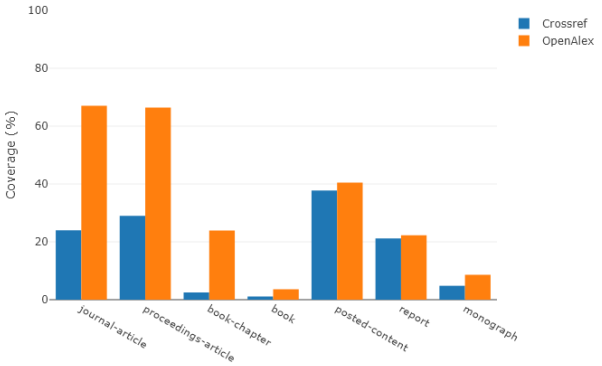

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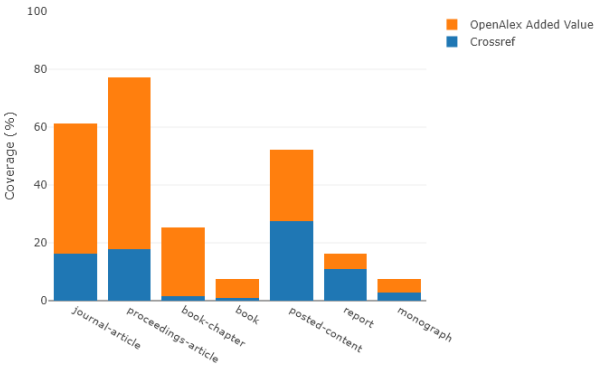

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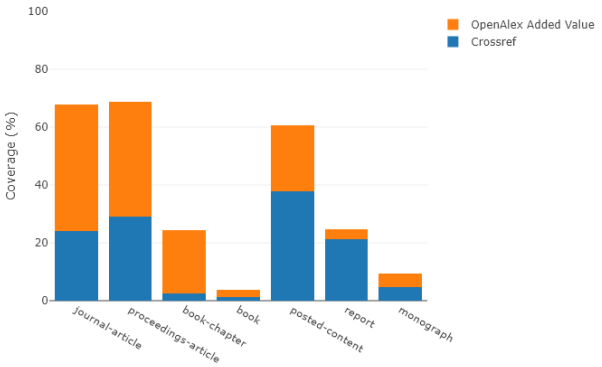

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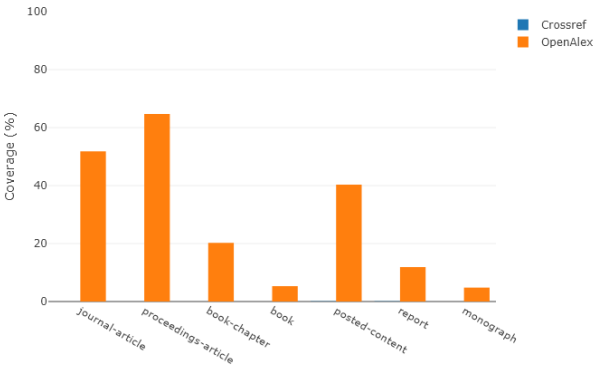
Affiliations ROR



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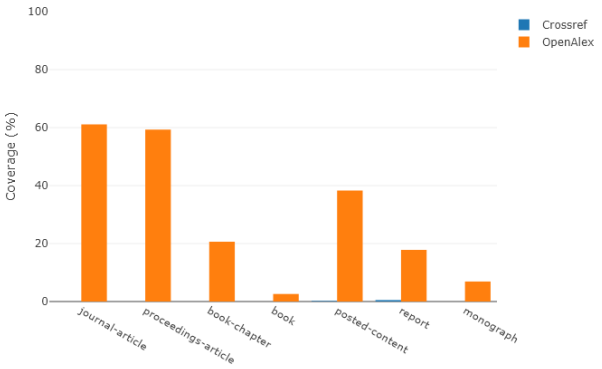

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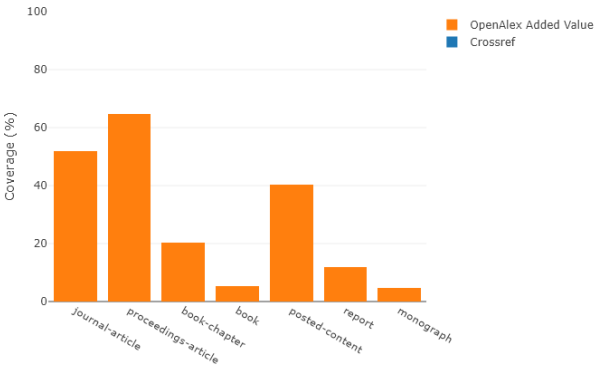

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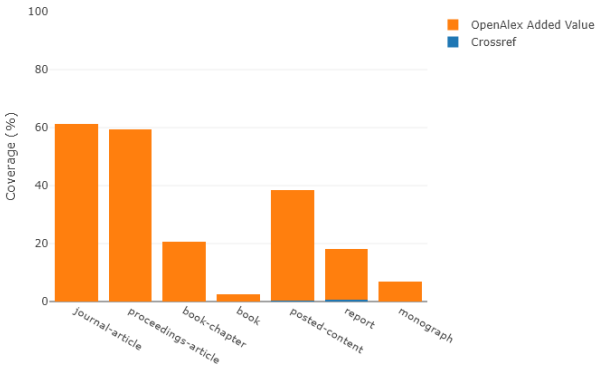

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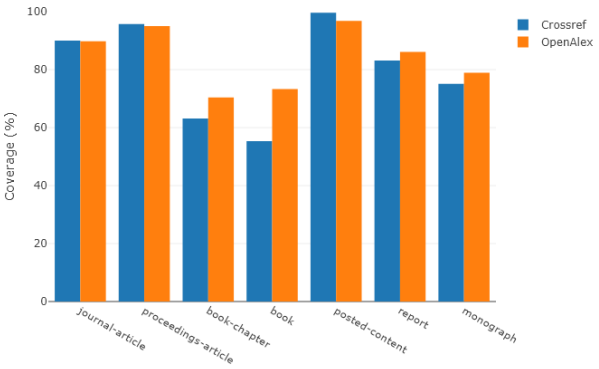
Authors



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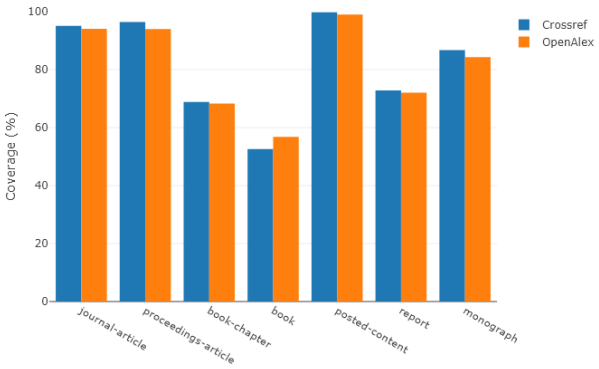

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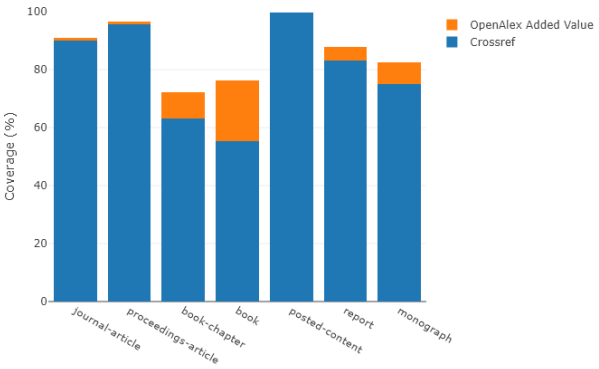

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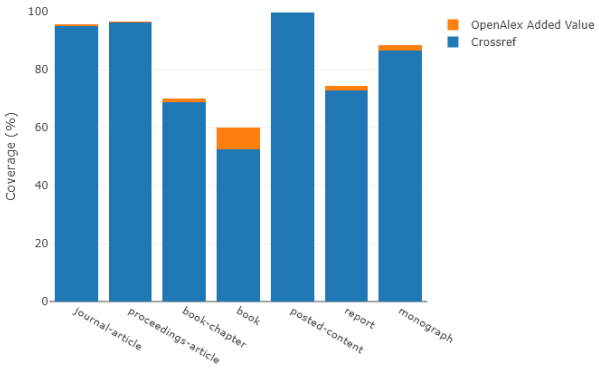

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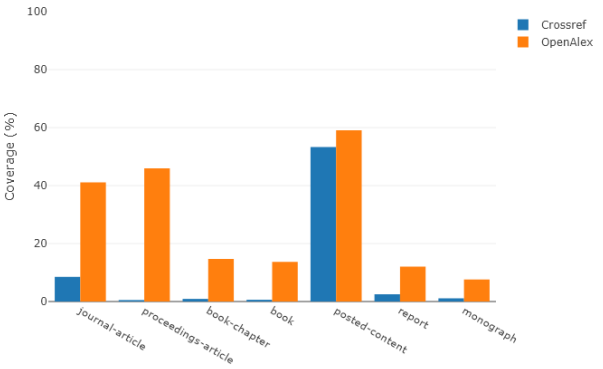

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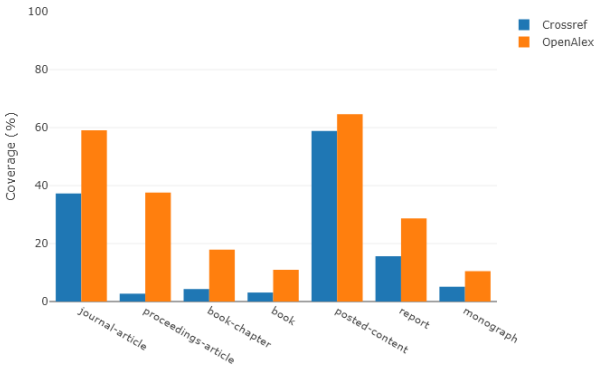

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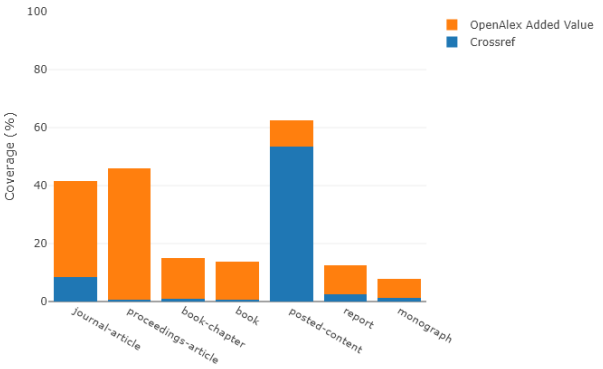

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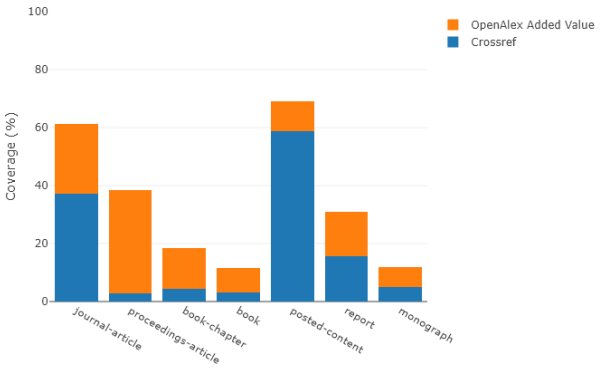

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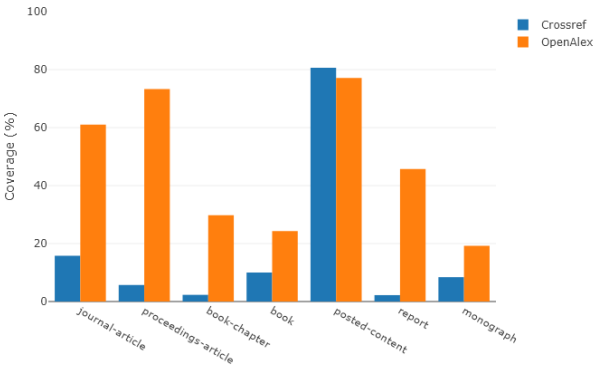
Abstracts



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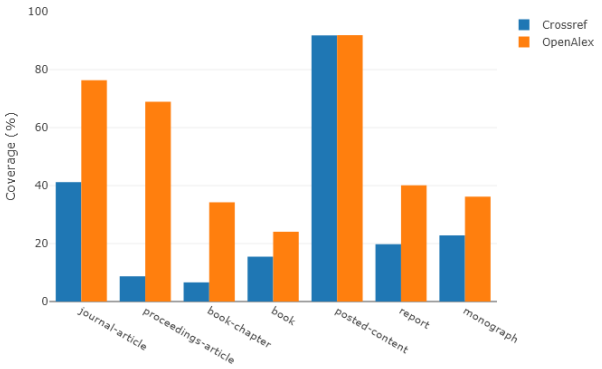

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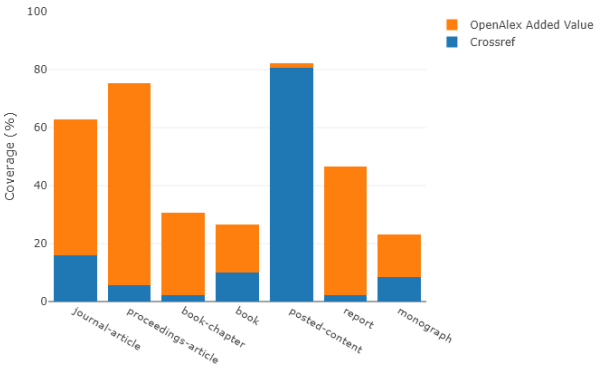

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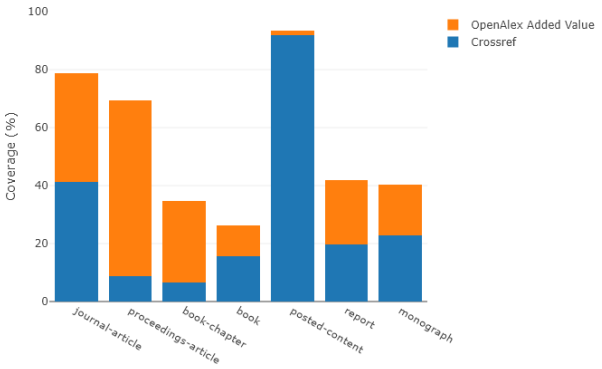

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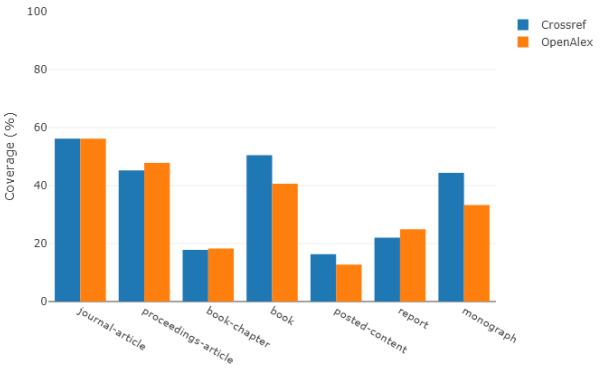

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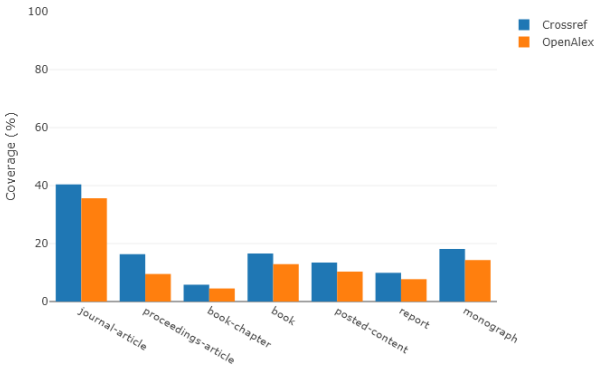

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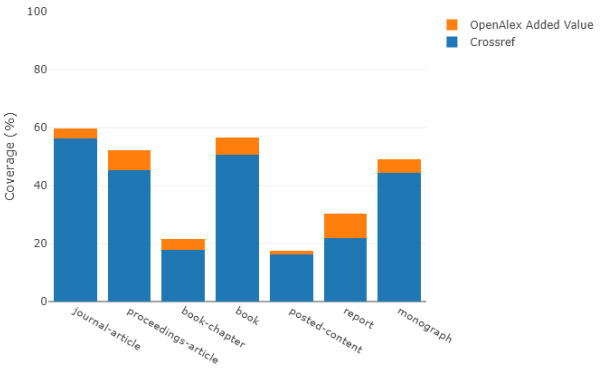

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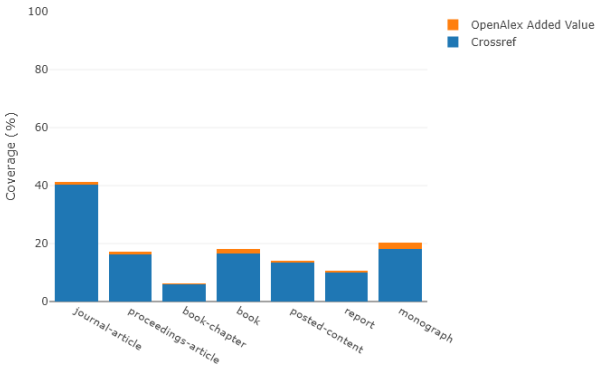

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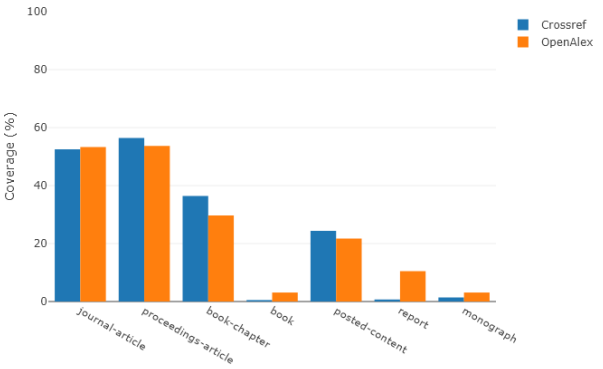

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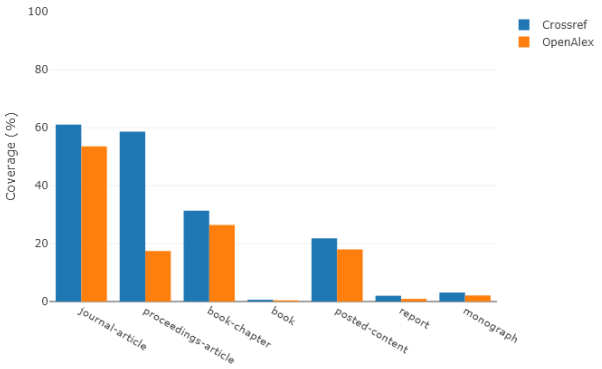

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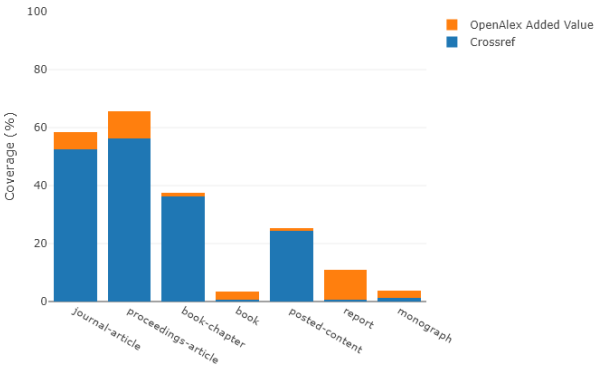

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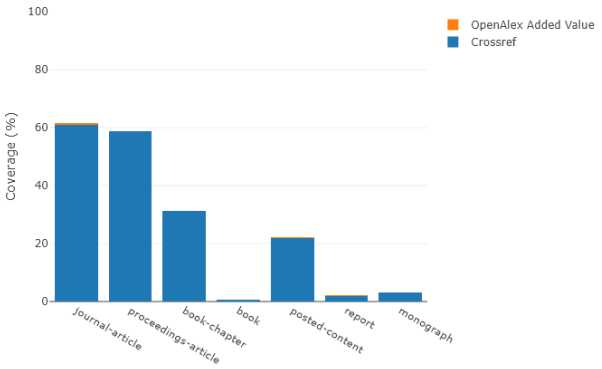

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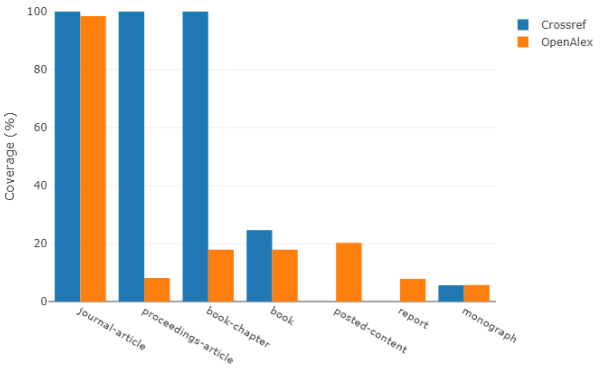
Journals



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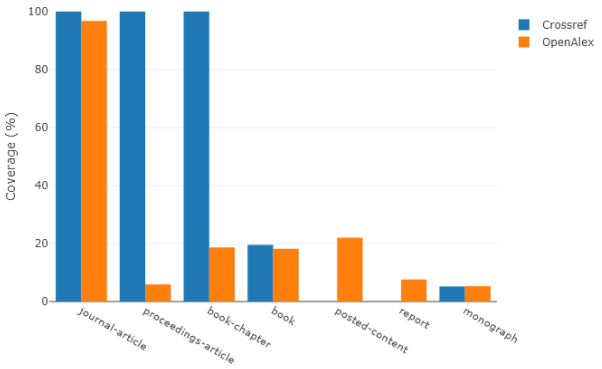

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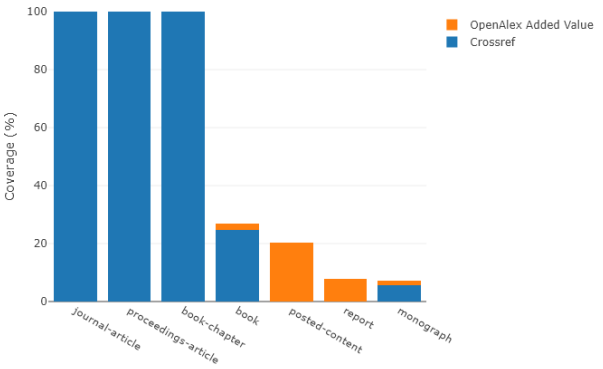

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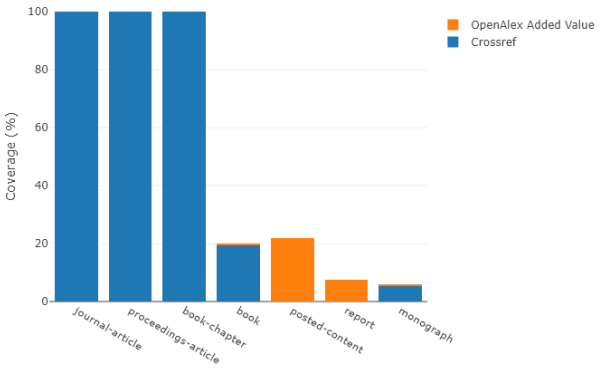

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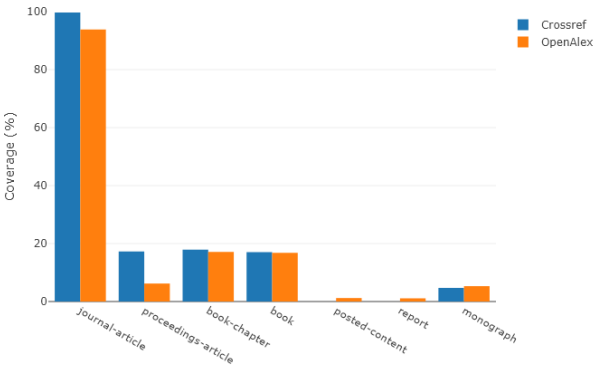

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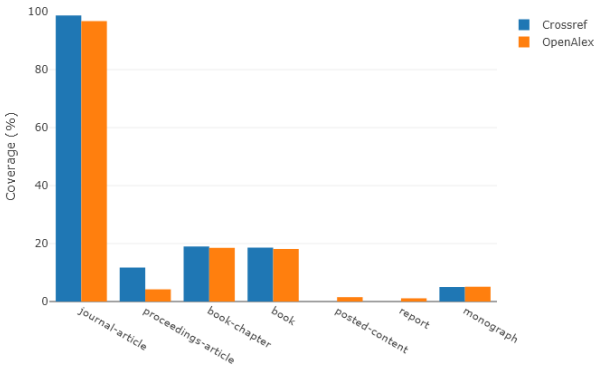

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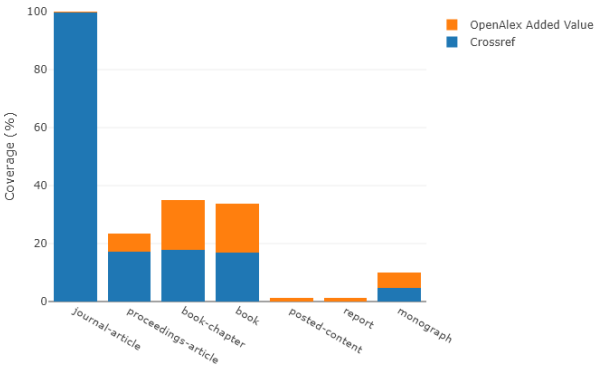

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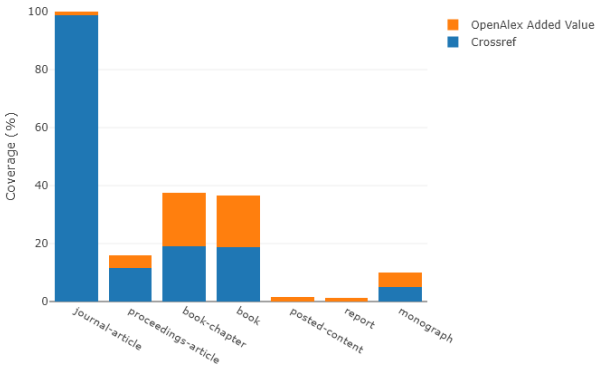

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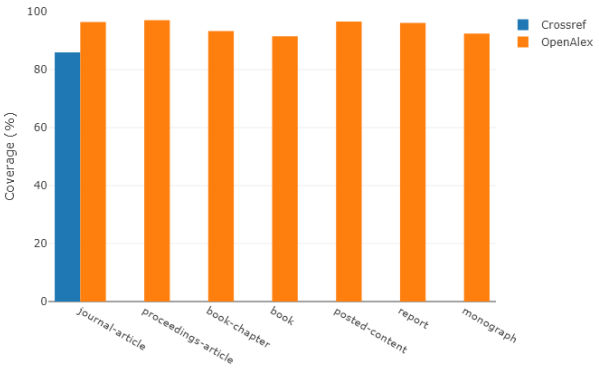

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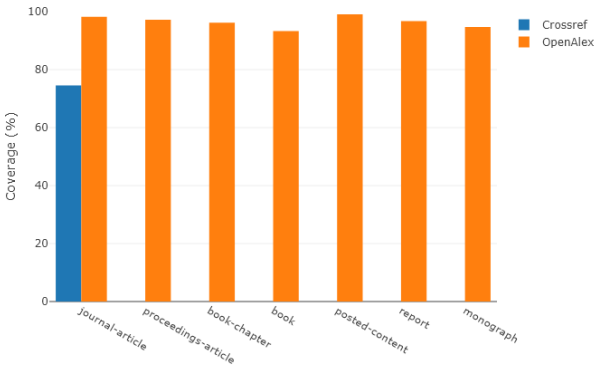

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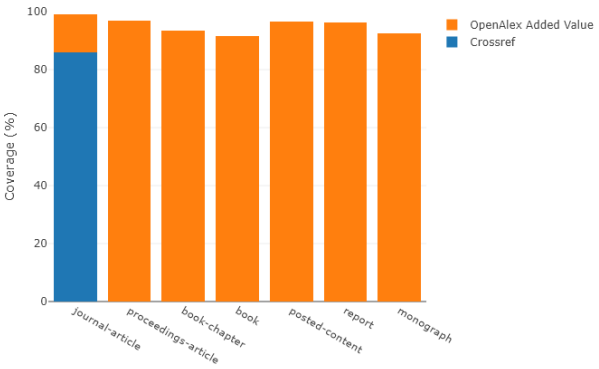

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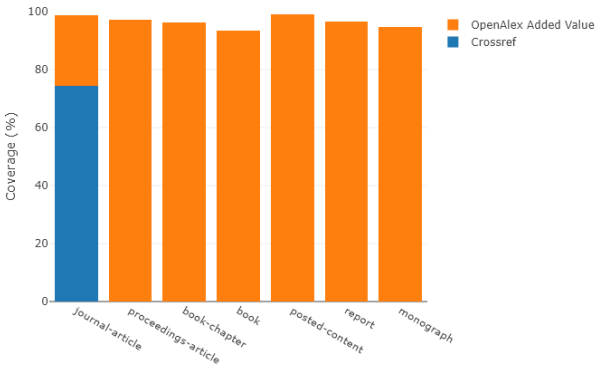
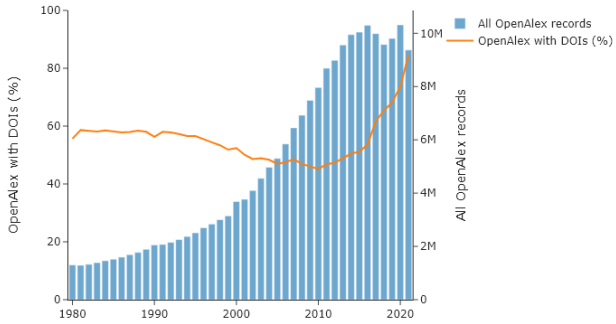


coverage added value - 2021

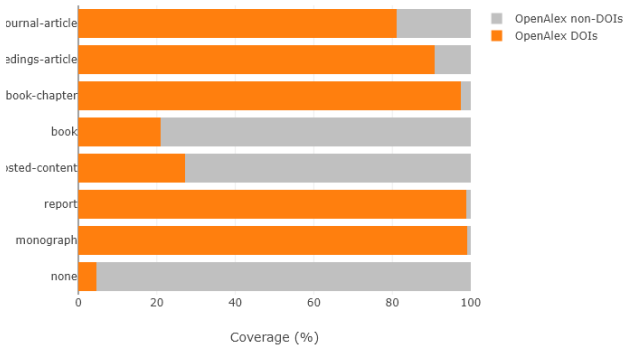
OpenAlex Coverage Beyond Crossref

DOIs vs non-DOIs

By year and publication type



coverage by publication date - all time

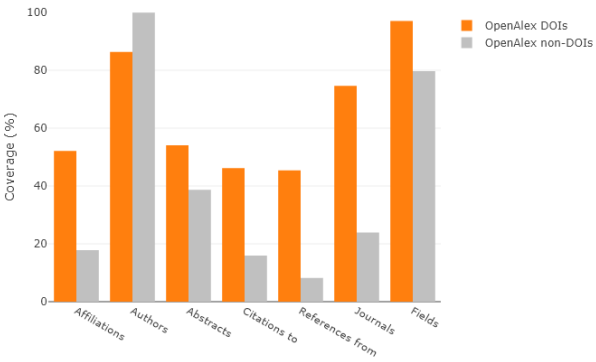


coverage by publication type - all time

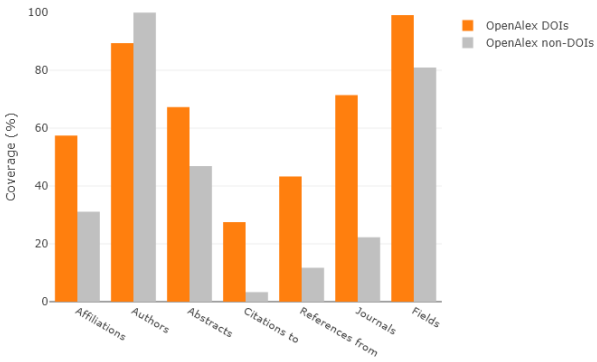
Metadata Coverage

Overview

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



coverage comparison - all time

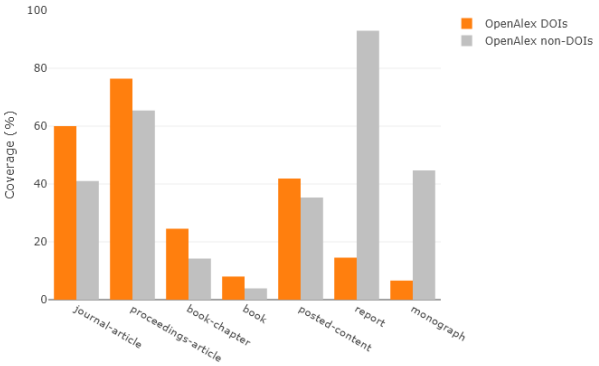


coverage comparison - 2021

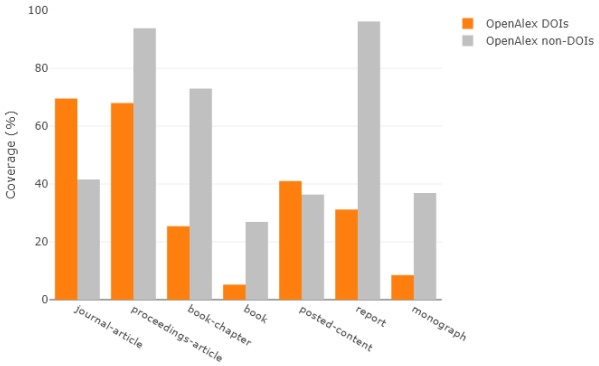
Details

Metadata coverage for DOIs and non-DOIs by publication type

Affiliations

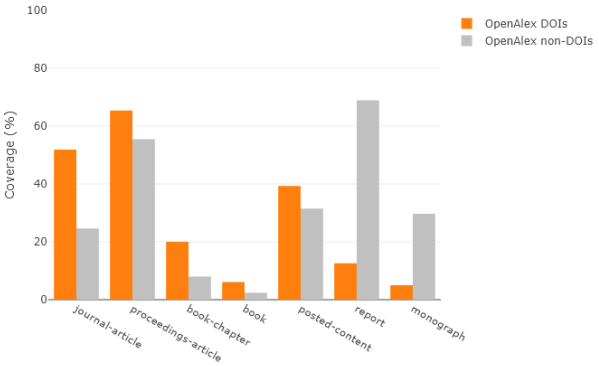


coverage comparison - all time

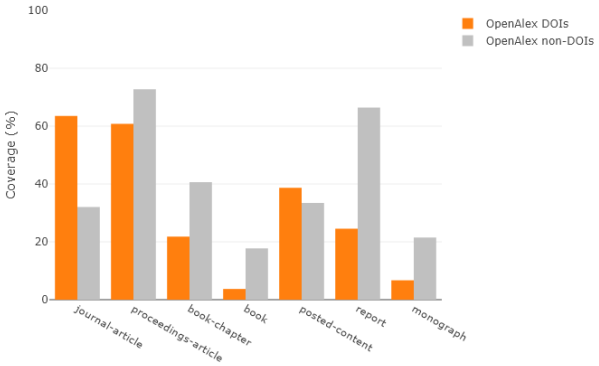


coverage comparison - 2021

Affiliations ROR

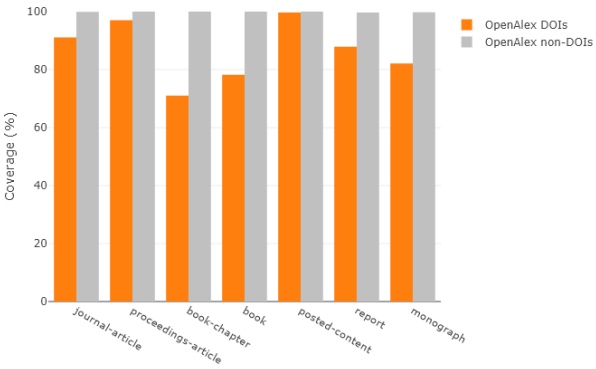


coverage comparison - all time

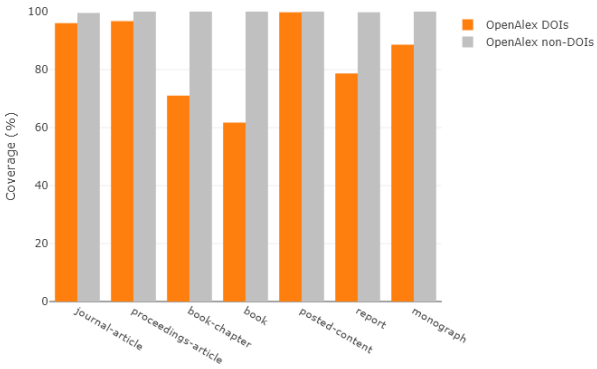


coverage comparison - 2021

Authors

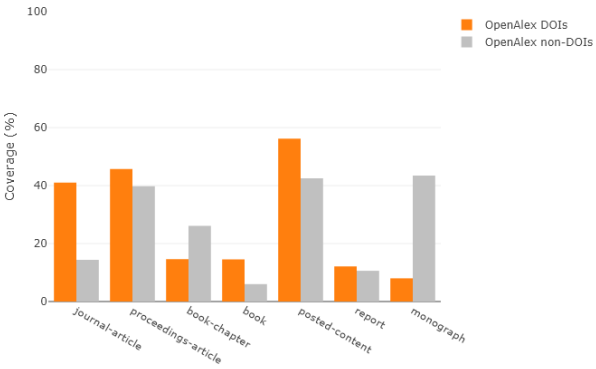


coverage comparison - all time

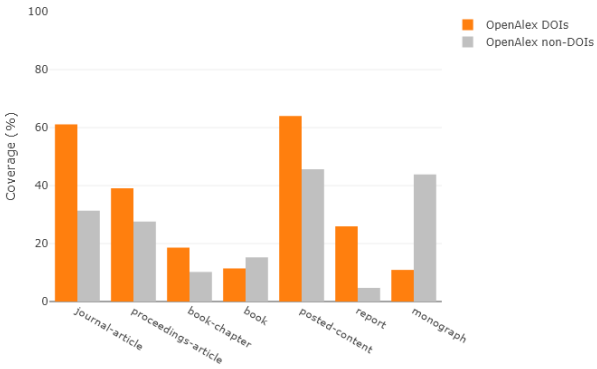


coverage comparison - 2021

Authors ORCIDs

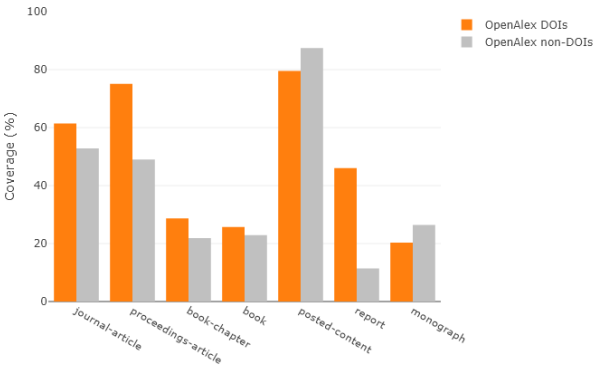


coverage comparison - all time

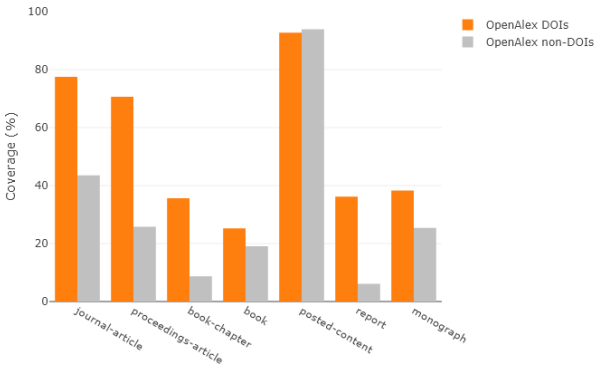


coverage comparison - 2021

Abstracts

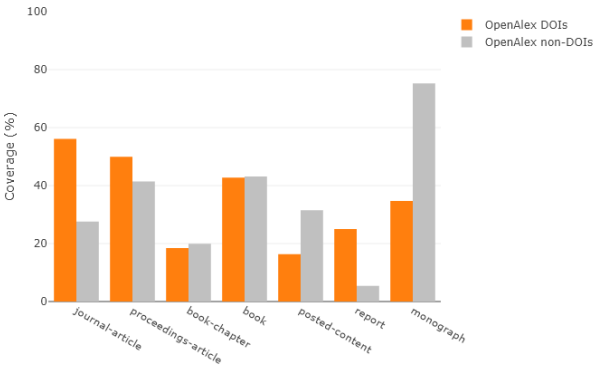


coverage comparison - all time

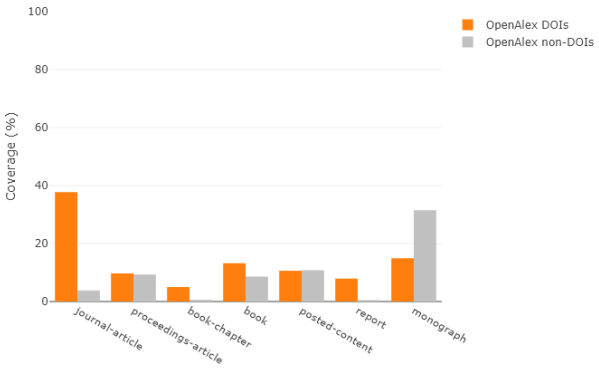


coverage comparison - 2021

Citations to

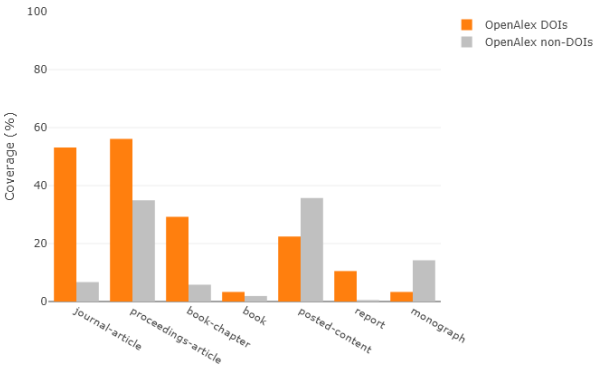


coverage comparison - all time

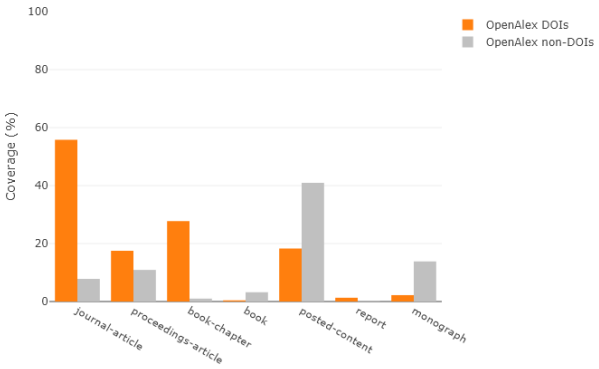


coverage comparison - 2021

References from

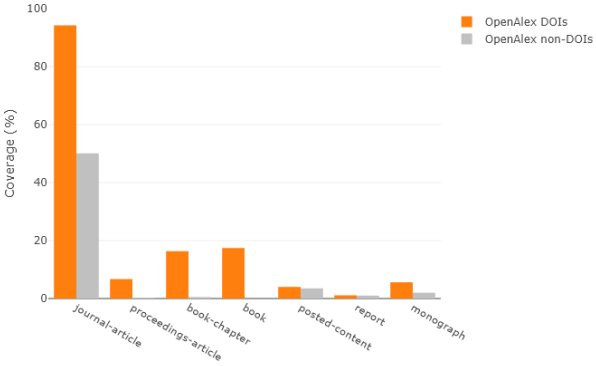


coverage comparison - all time

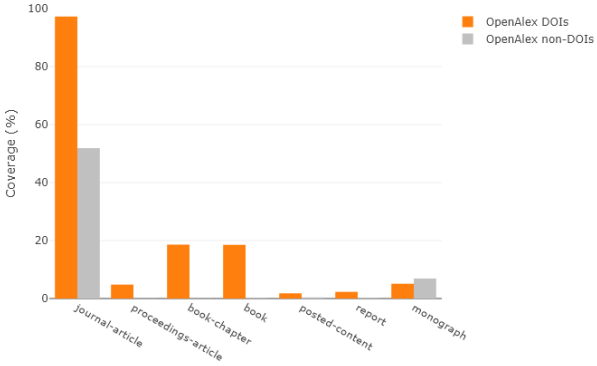


coverage comparison - 2021

Journals ISSN

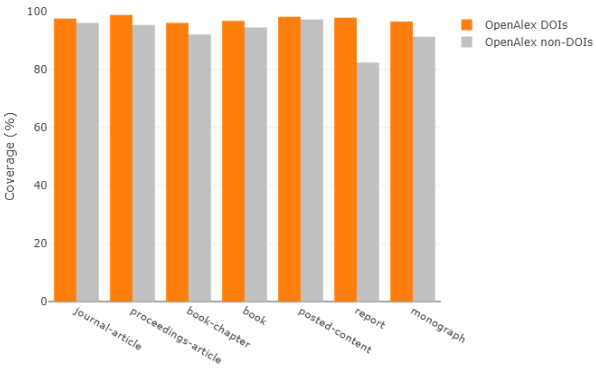


coverage comparison - all time

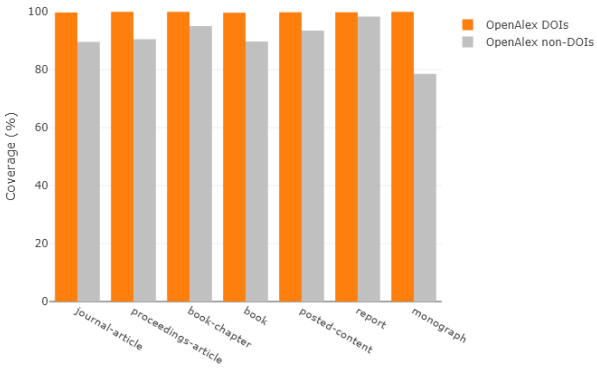


coverage comparison - 2021

Fields



coverage comparison - all time



coverage comparison - 2021

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 = 2021

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	7180913	6985335

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	7180913	6353115	2098567	1490653	1785	2437399	3781734	6680290	5301604