

OPEN METADATA SOURCES

COMPARING OPENALEX TO
OPENAIRE

DATE: 11 OCTOBER 2023

[PRELIMINARY VERSION]

Executive Summary

In this project, we assess and compare OpenAlex to OpenAIRE 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 OpenAIRE, and of DOIs vs non-DOIs in openaire. More explanatory text, tables 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_20231011_crossref_openalex_openaire_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 OpenAlex to OpenAIRE 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:

- OpenAlex: `academic-observatory.openalex.works20231002`
- OpenAIRE: `academic-observatory.openaire.publication20230817`

Complete data and code are available on Github:

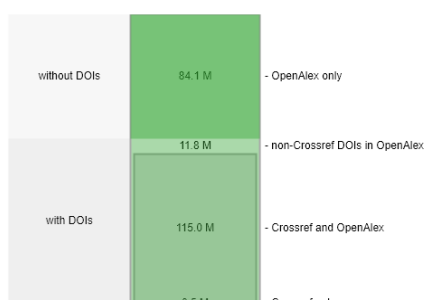
<https://github.com/Curtin-Open-Knowledge-Initiative/open-metadata-report>

All images and data belonging to this report are located in the directory [reports/run_20231011_crossref_openalex_openaire_1](#) in this repository.

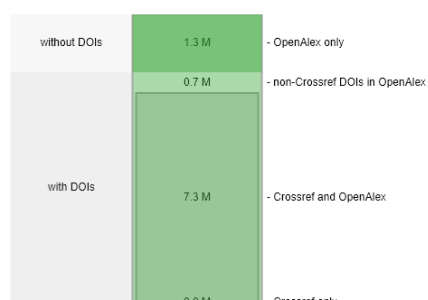
Coverage of OpenAlex and OpenAIRE

Comparing coverage

Overview - OpenAlex

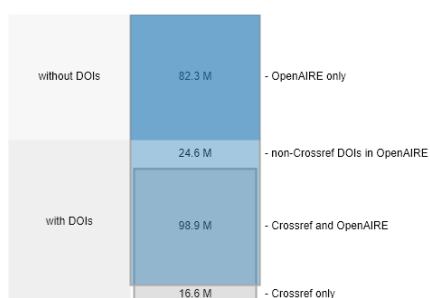


overall comparison - all time

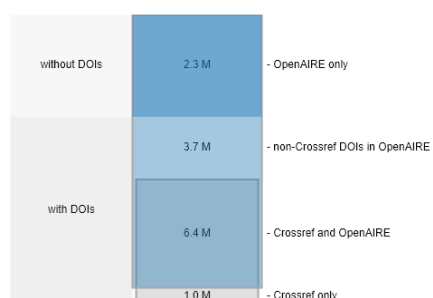


overall comparison - 2021

Overview - OpenAIRE

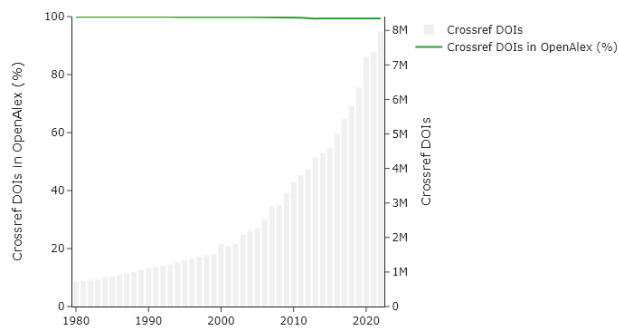


overall comparison - all time

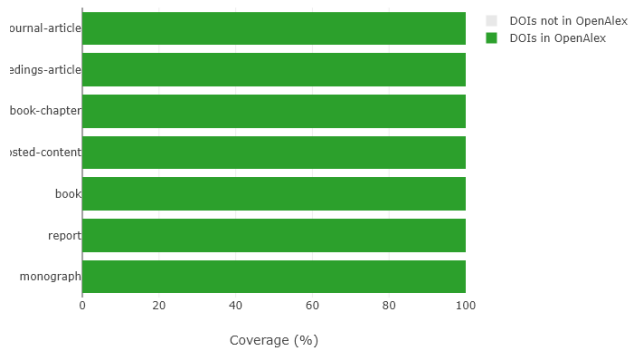


overall comparison - 2021

By year and publication type - OpenAlex

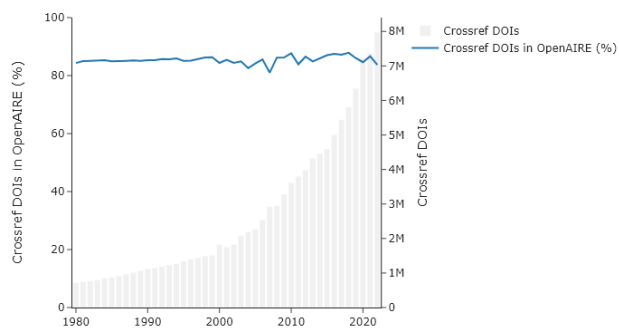


coverage by publication date - all time

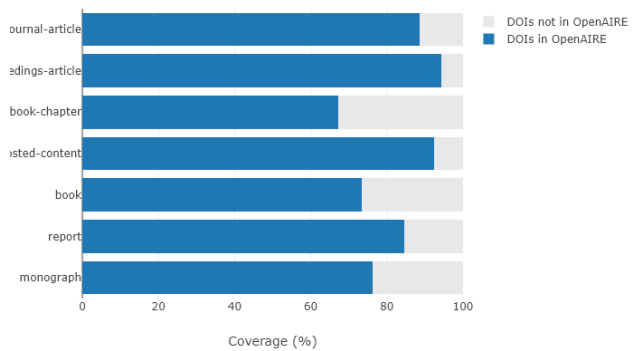


coverage by publication type - all time

By year and publication type - OpenAIRE



coverage by publication date - all time

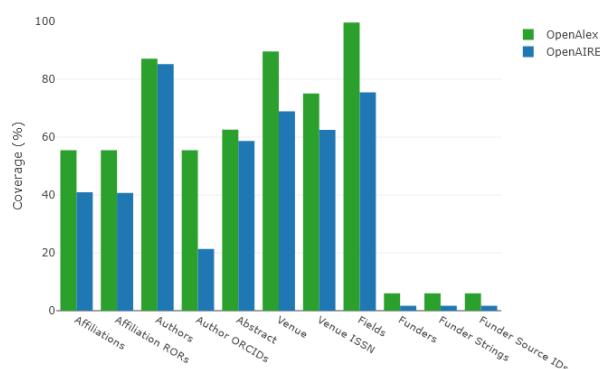


coverage by publication type - all time

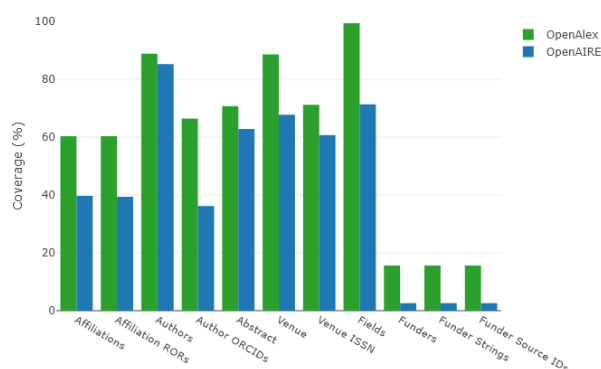
Comparing OpenAlex and OpenAIRE

Overview

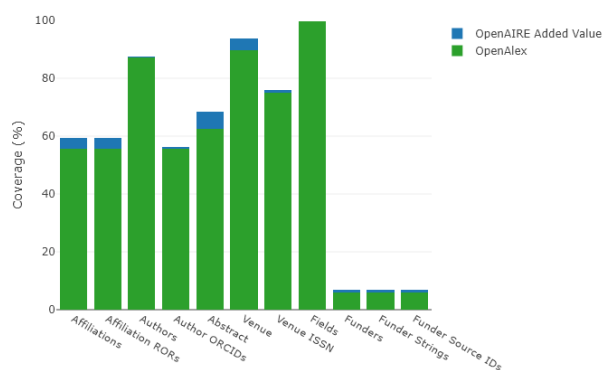
Coverage of metadata types in OpenAlex and OpenAIRE (for Crossref DOIs)



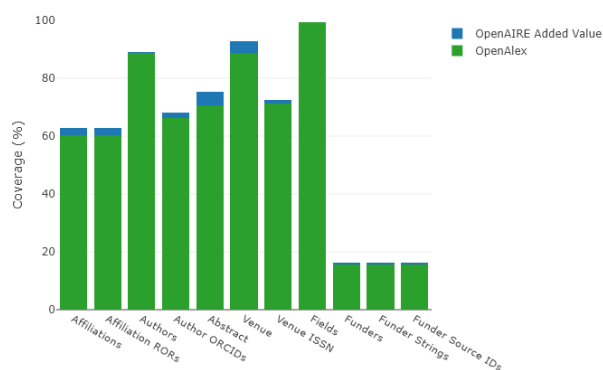
coverage comparison - all time



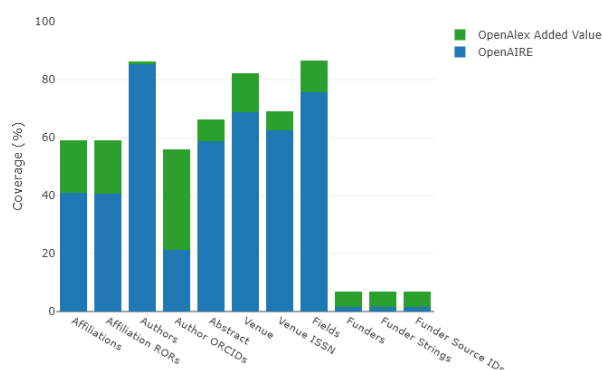
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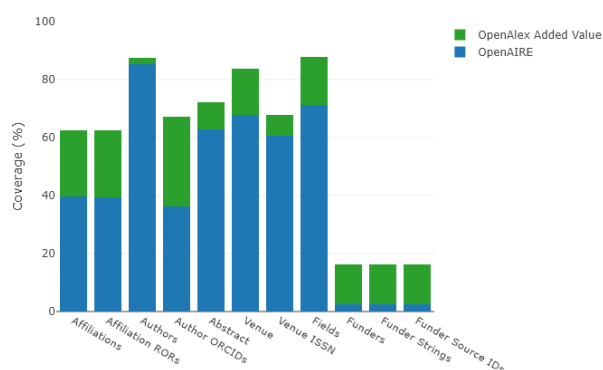
coverage added value - all time



coverage added value - 2021



coverage added value - all time

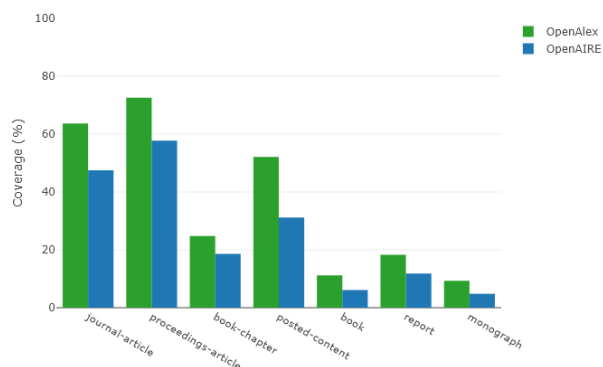


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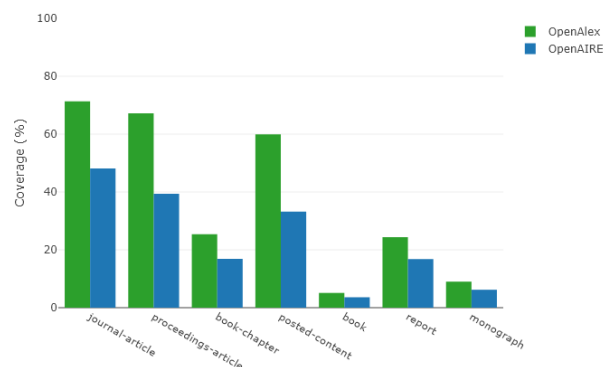
Details

Metadata coverage in OpenAlex and OpenAIRE by publication type (for Crossref DOIs)

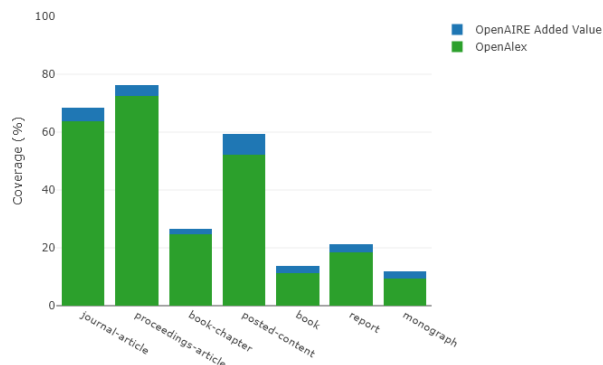
Affiliations



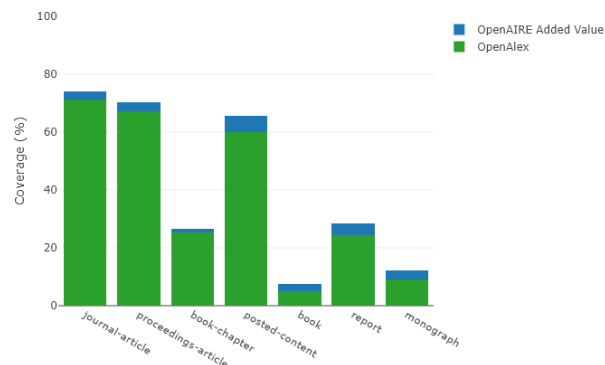
coverage comparison - all time



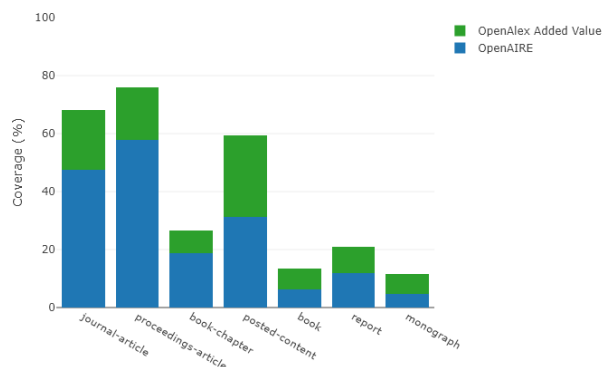
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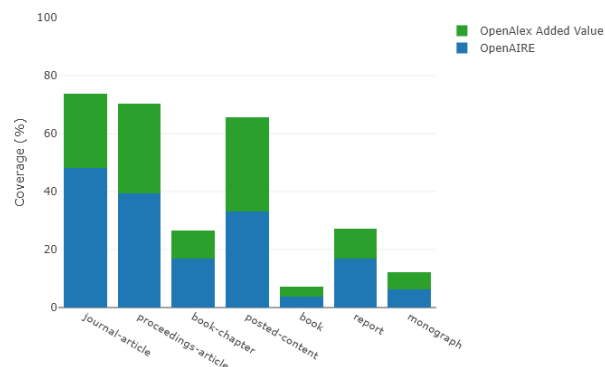
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coverage added value - 2021

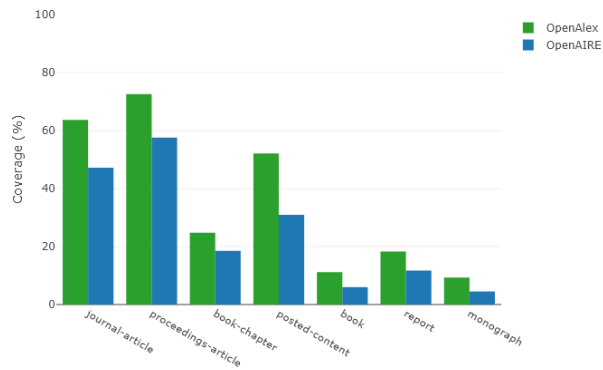


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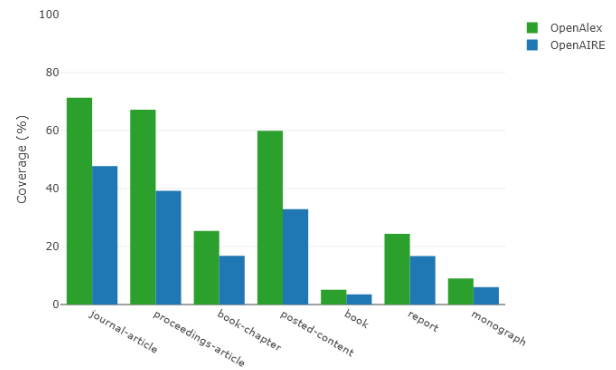


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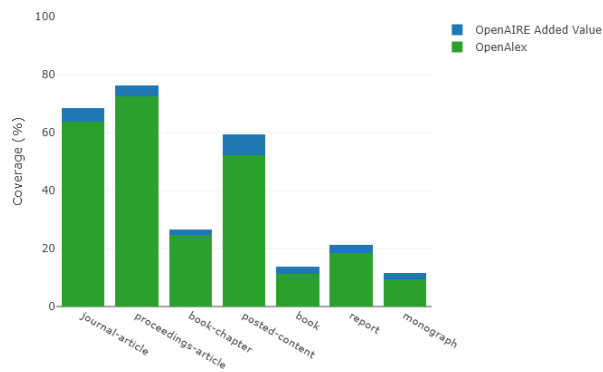
Affiliation RORs



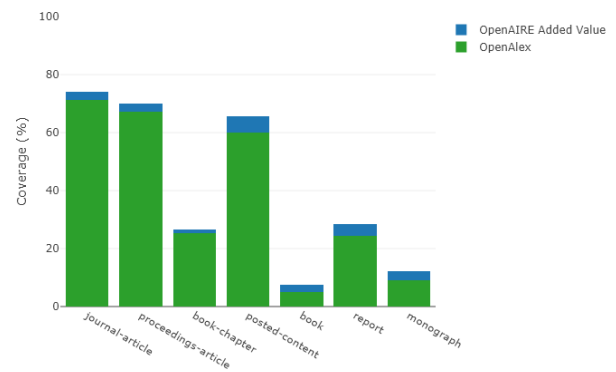
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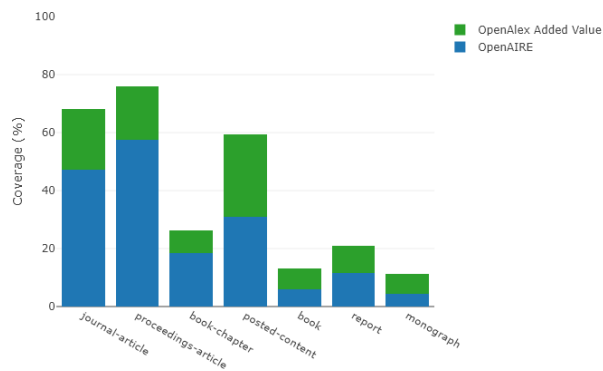
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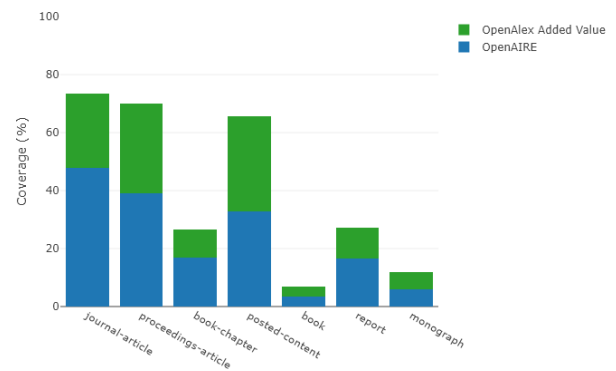
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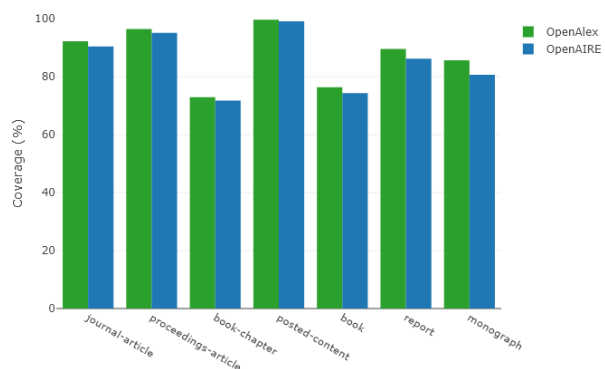


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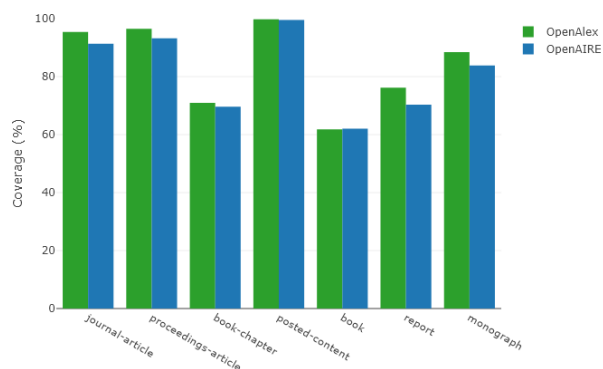


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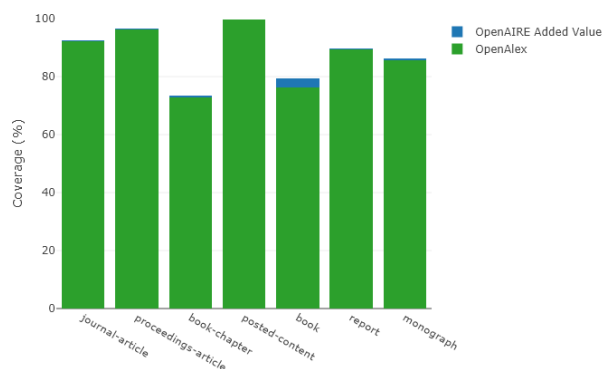
Authors



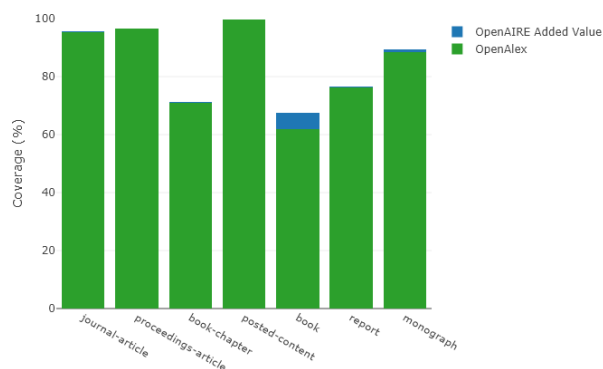
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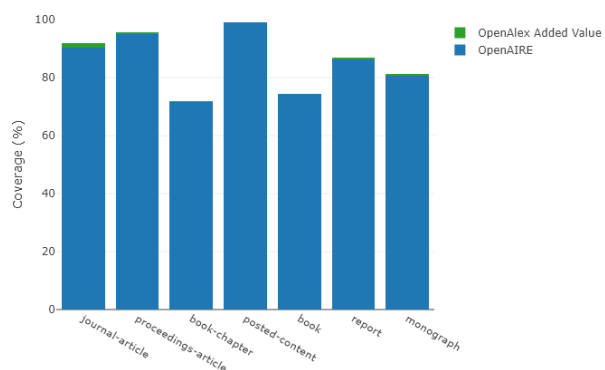
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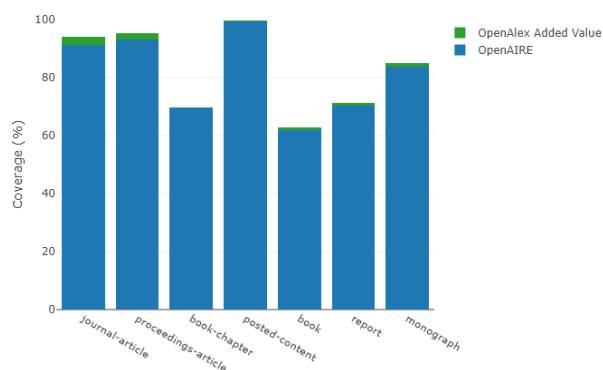
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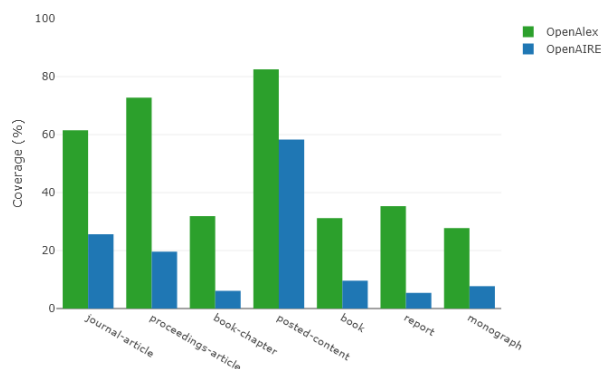


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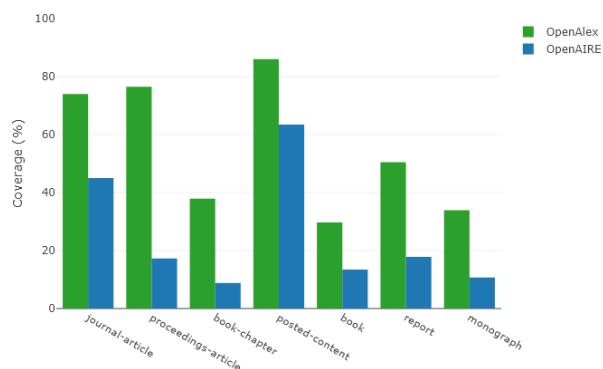


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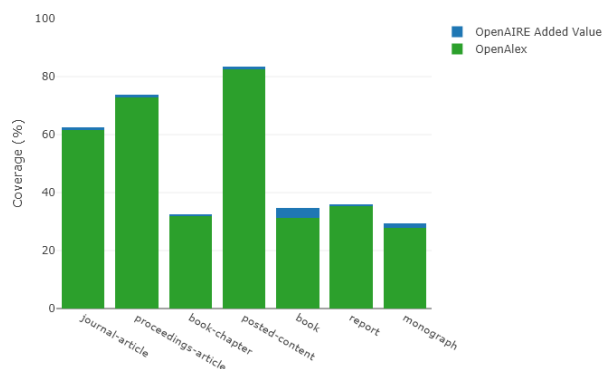
Author ORCIDs



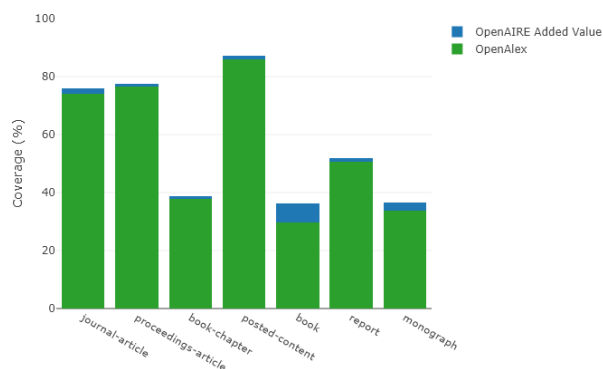
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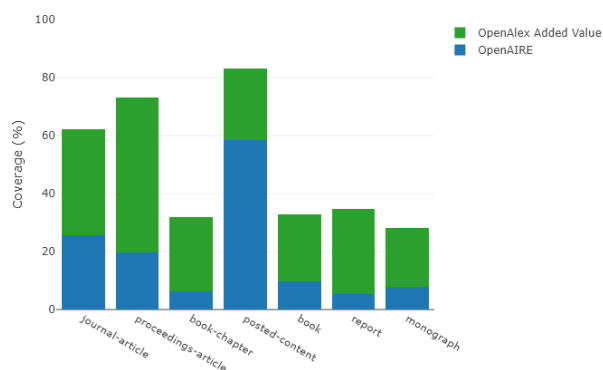
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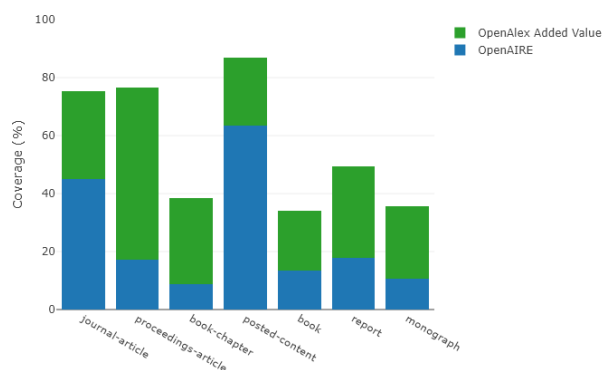
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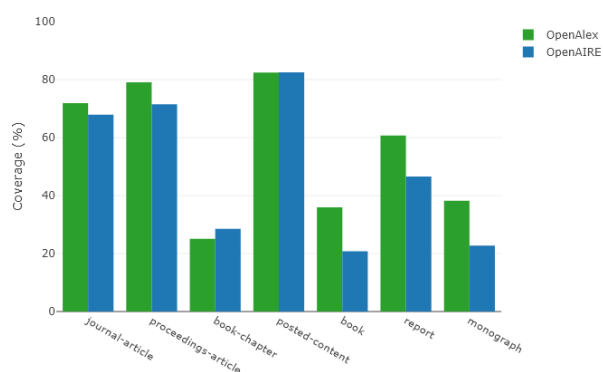


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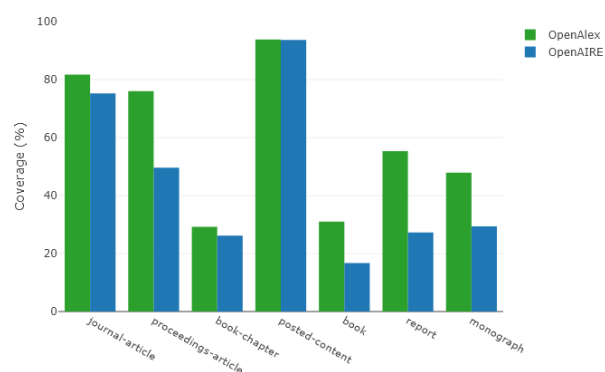


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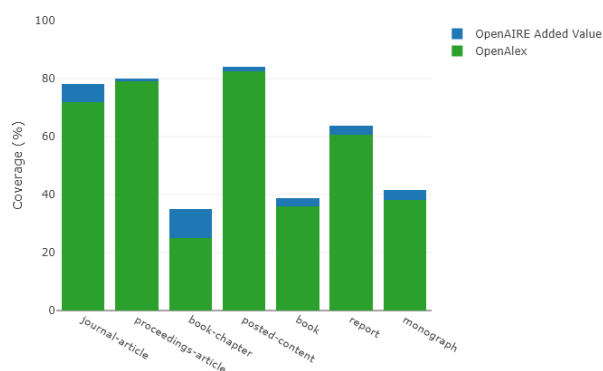
Abstract



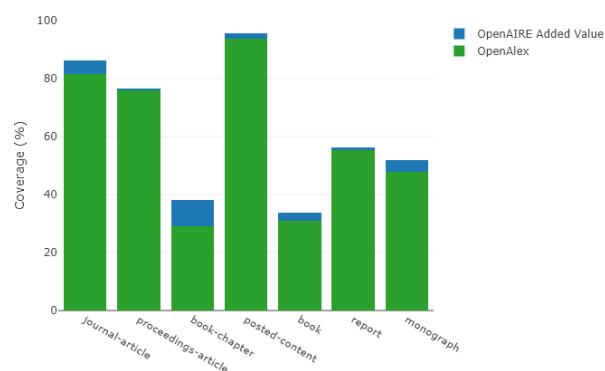
coverage comparison - all time



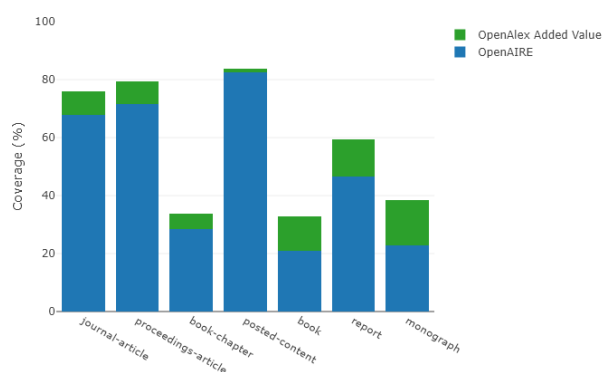
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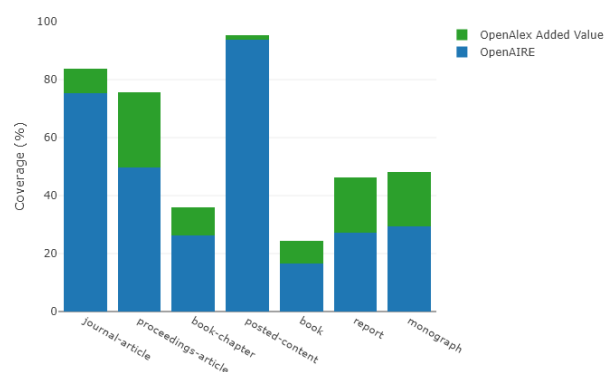
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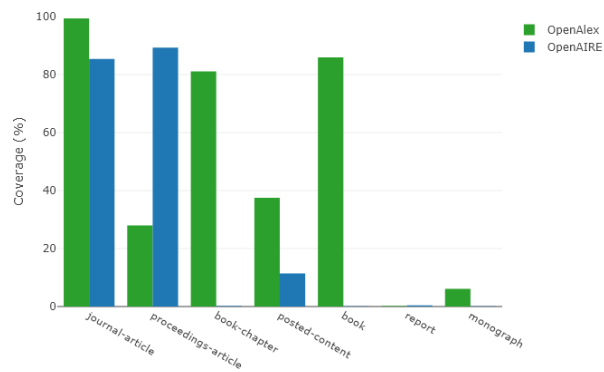


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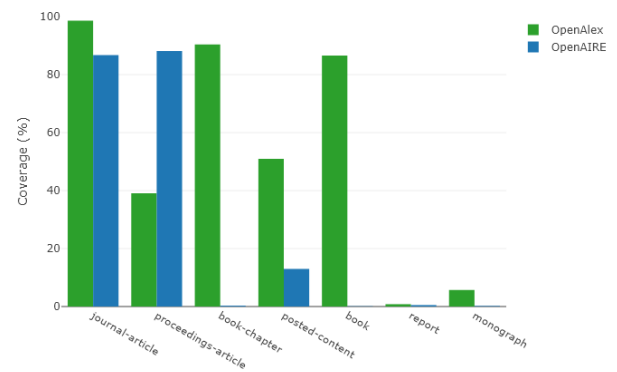


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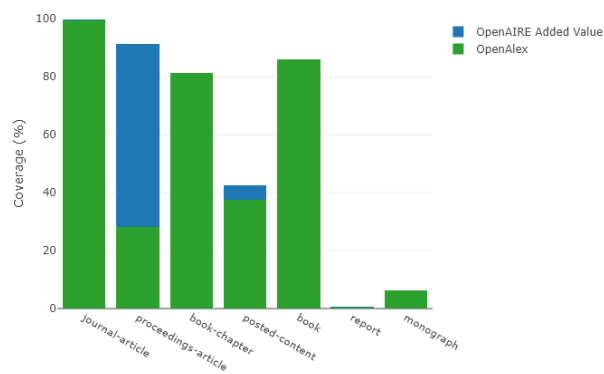
Venue



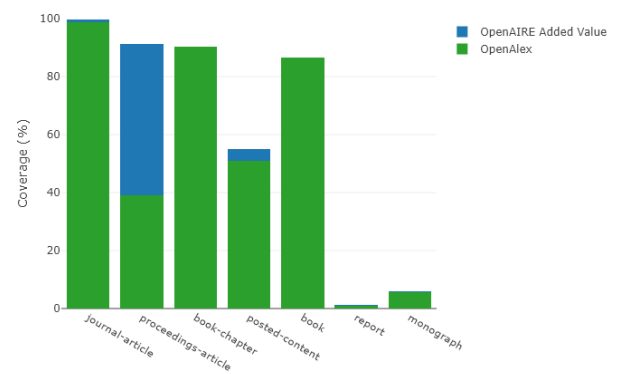
coverage comparison - all time



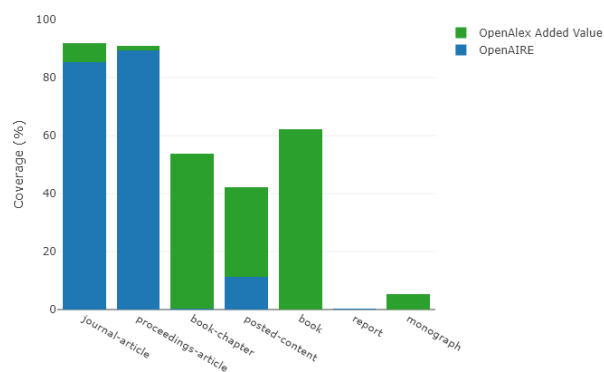
coverage comparison - 2021



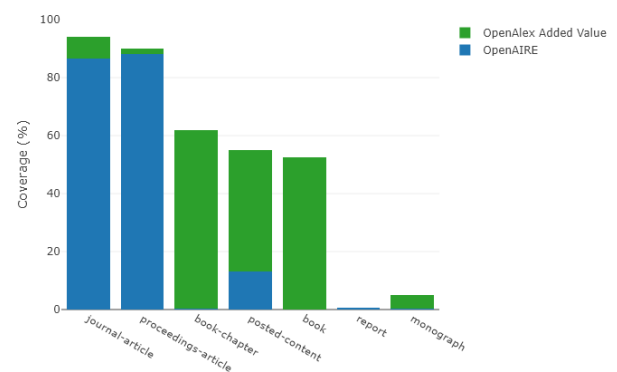
coverage added value - all time



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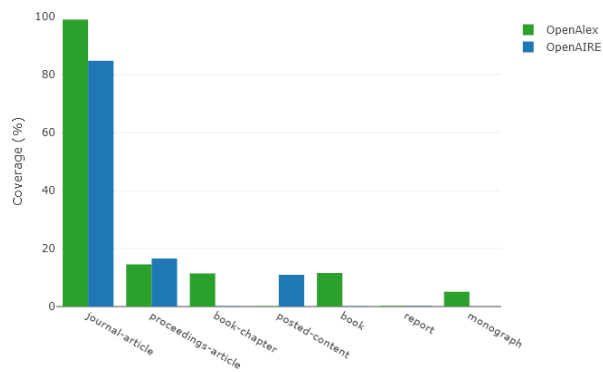


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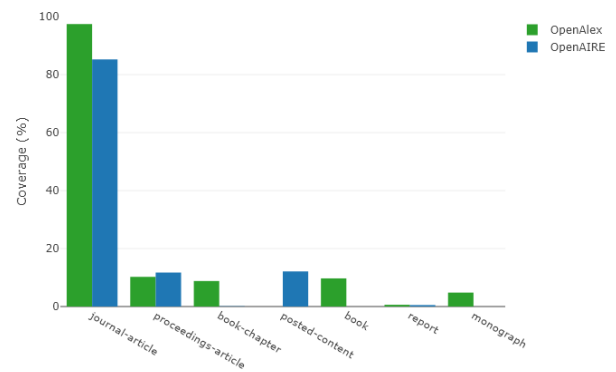


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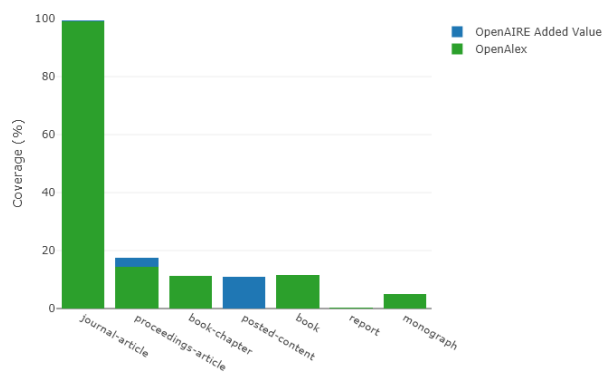
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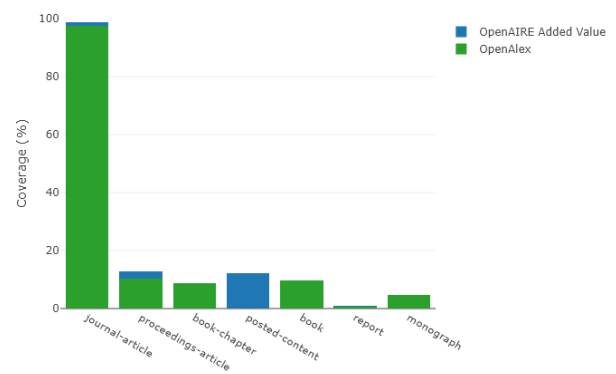
coverage comparison - all time



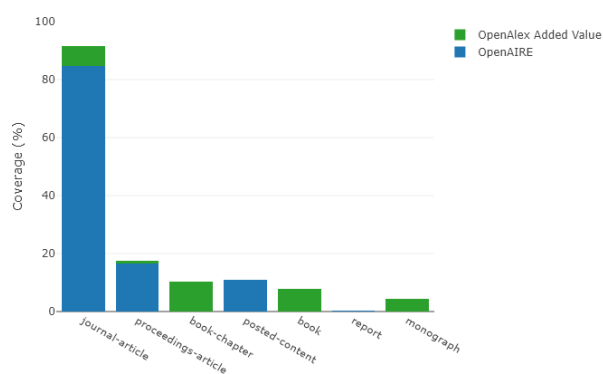
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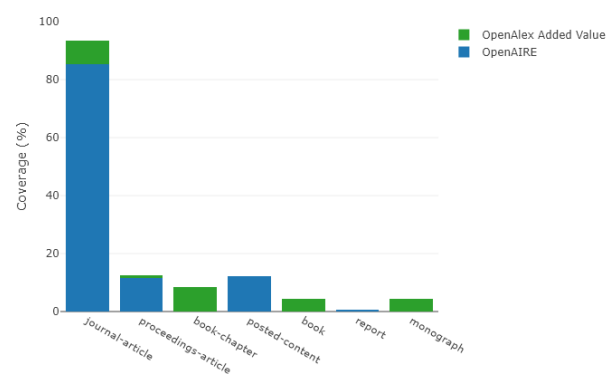
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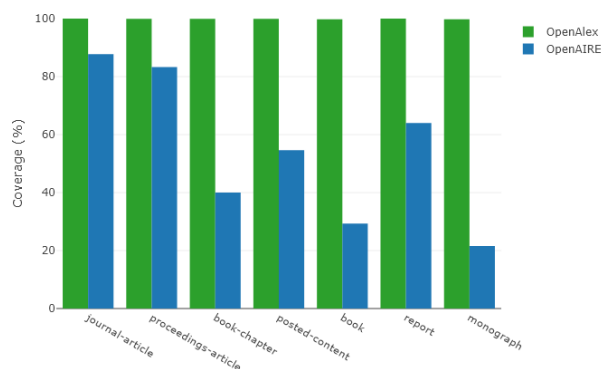


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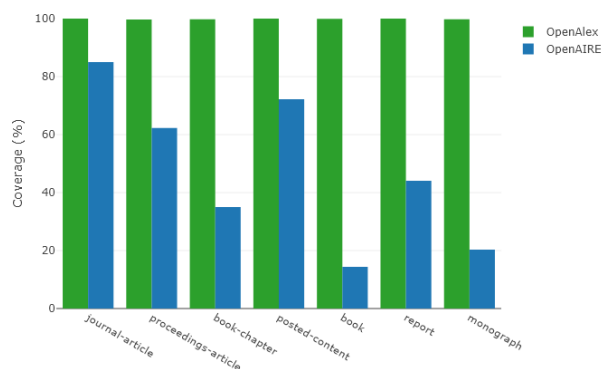


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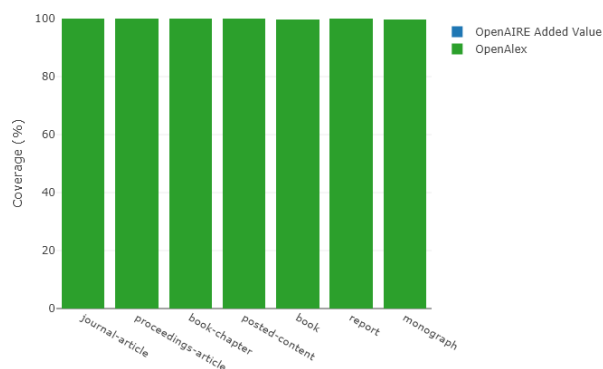
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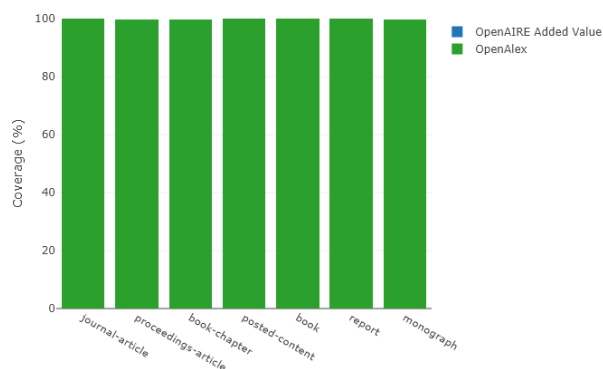
coverage comparison - all time



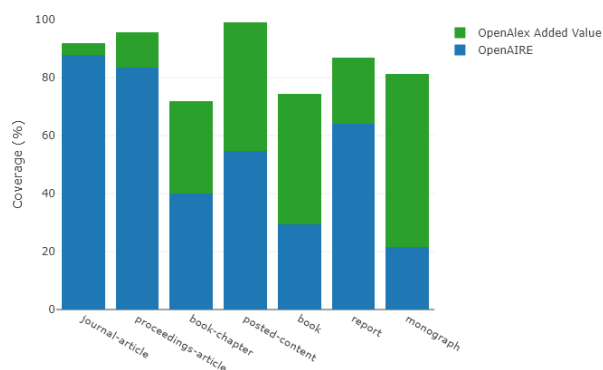
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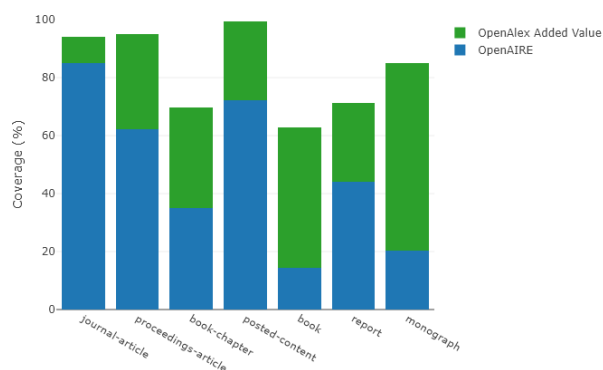
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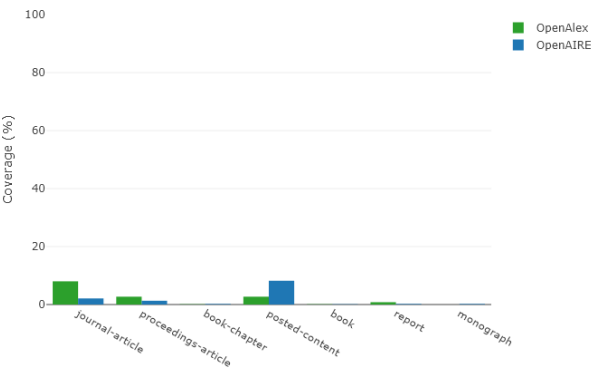


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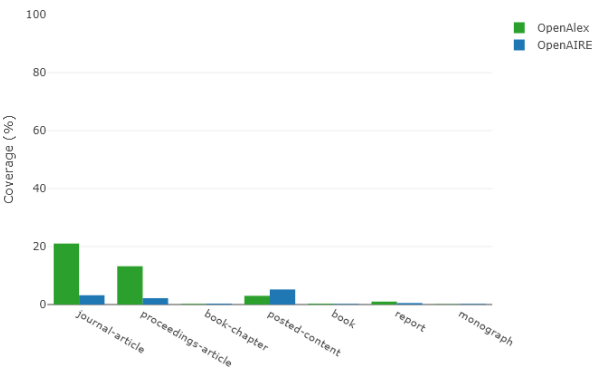


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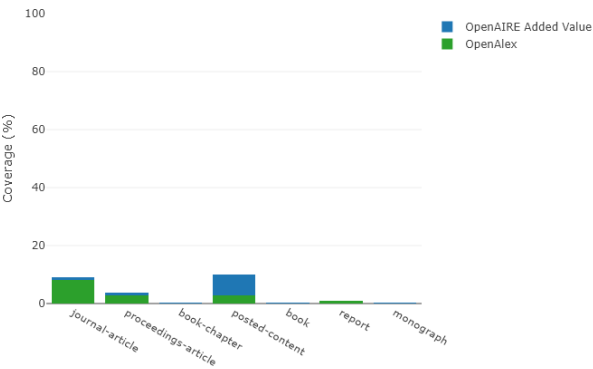
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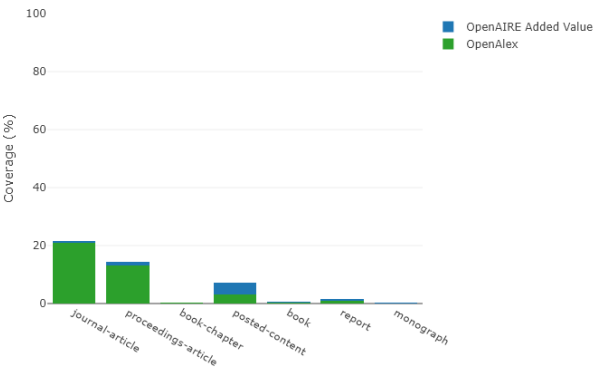
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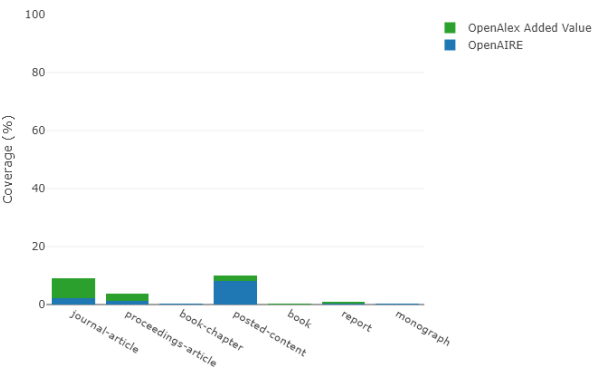
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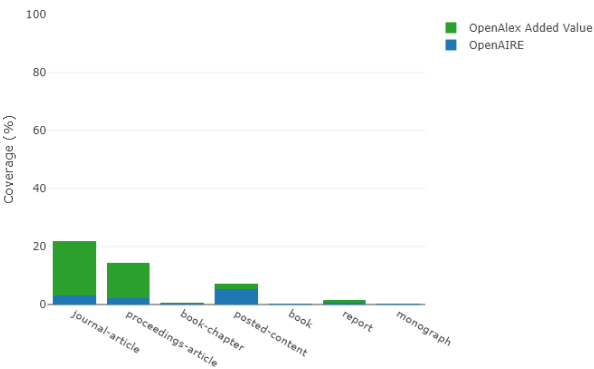
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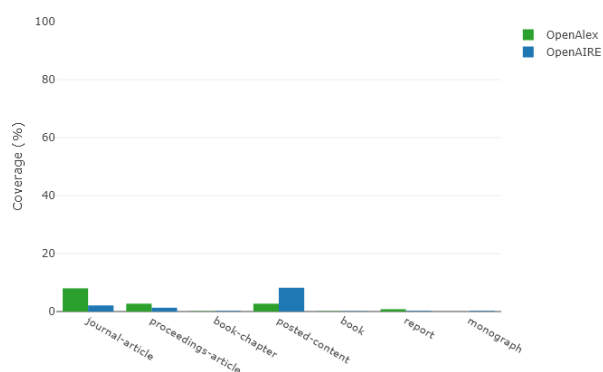


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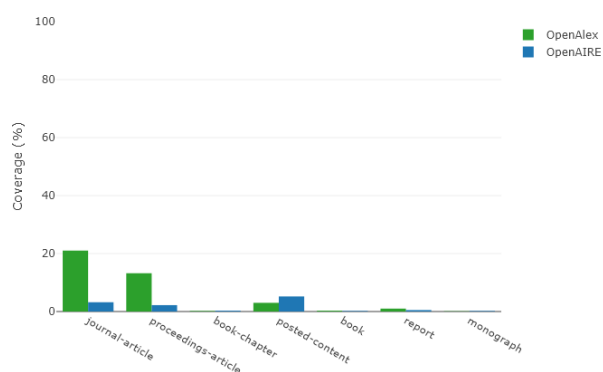


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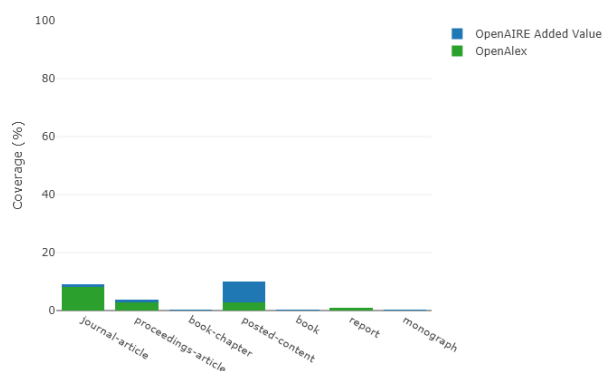
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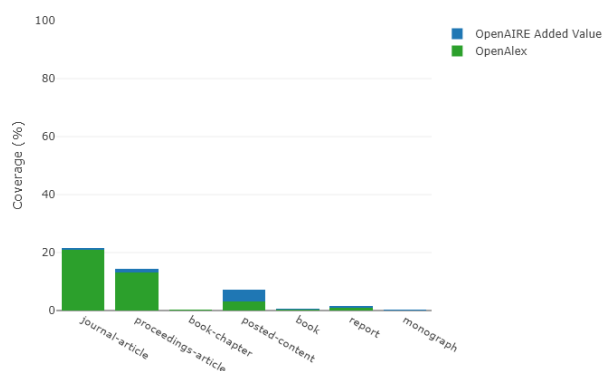
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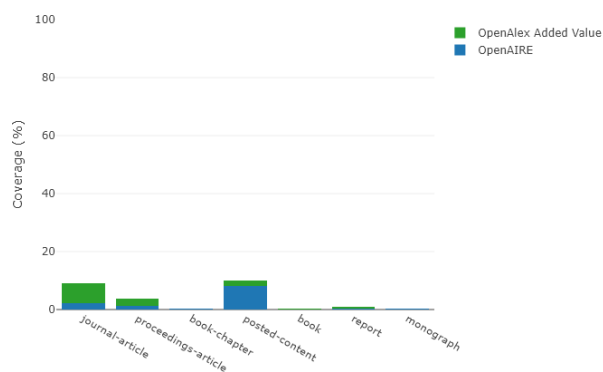
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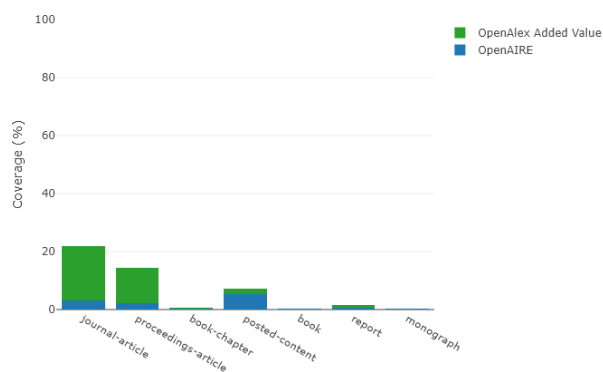
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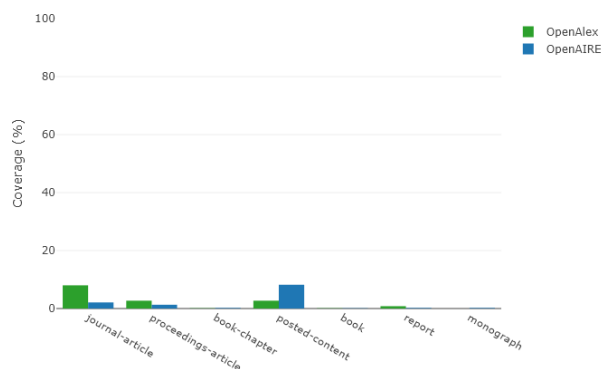


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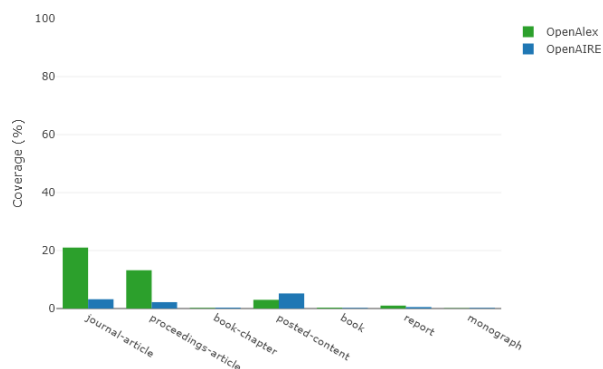


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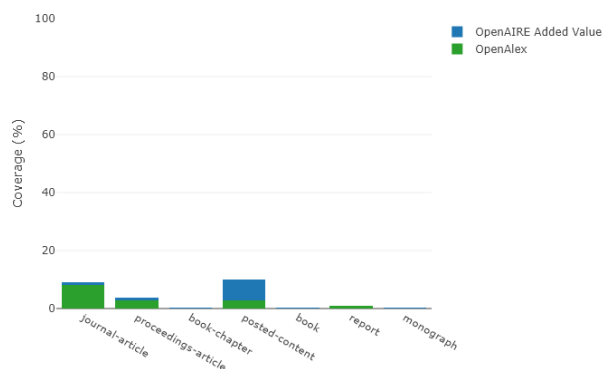
Funder Source IDs



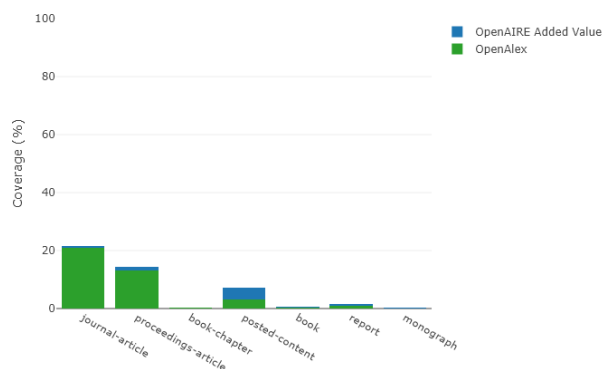
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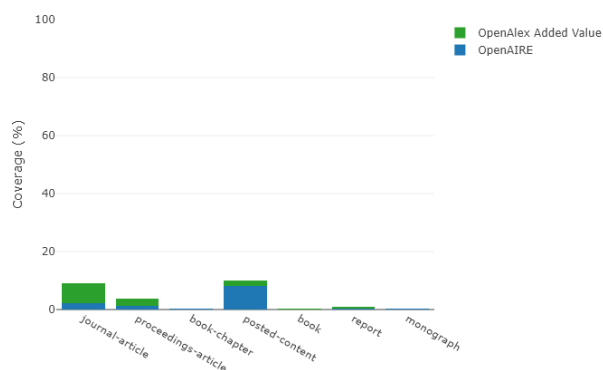
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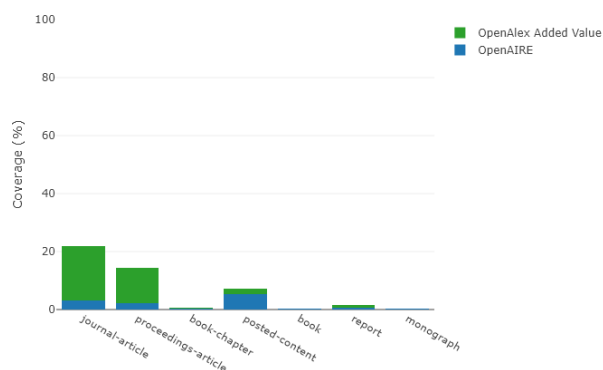
coverage added value - all time



coverage added value - 2021



coverage added value - all time

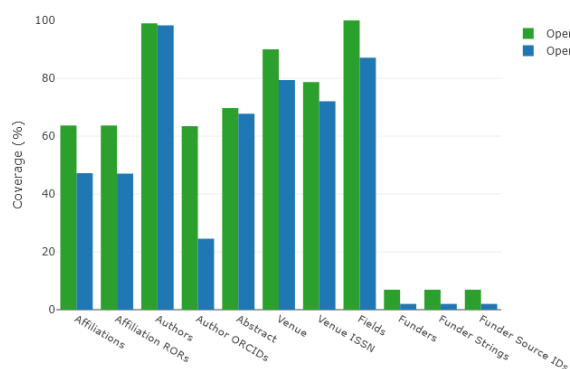


coverage added value - 2021

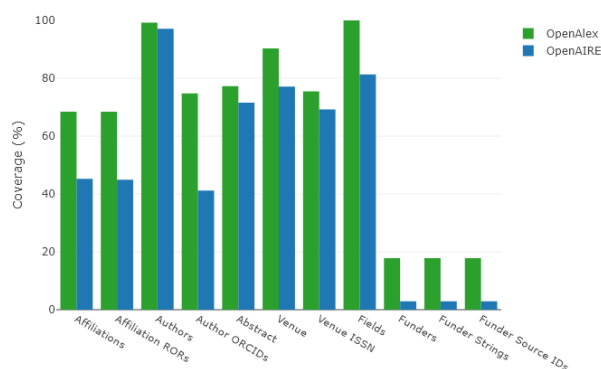
Comparing OpenAlex and OpenAIRE (overlap)

Overview

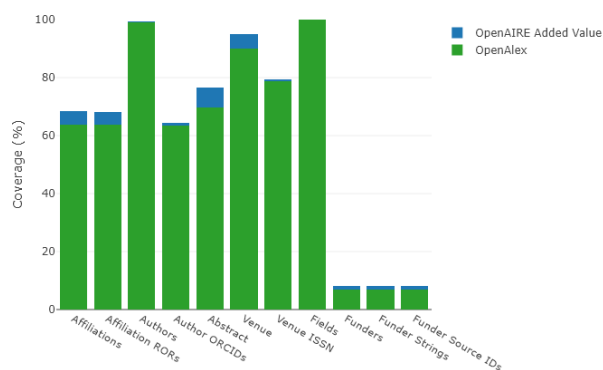
Coverage of metadata types in OpenAlex and OpenAIRE (overlap only)



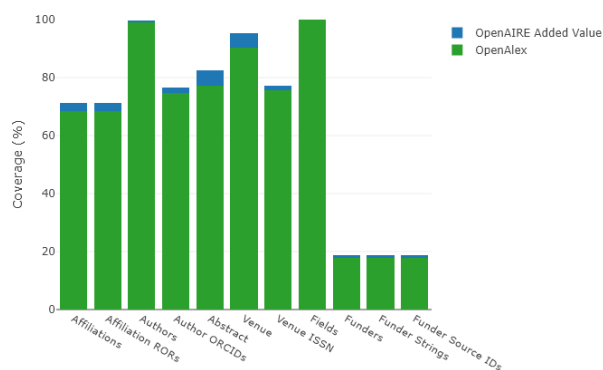
coverage comparison - all time



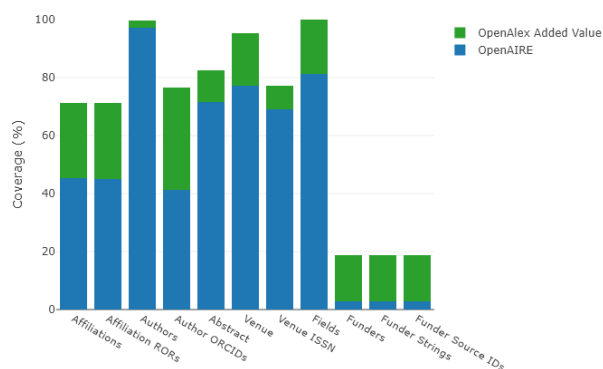
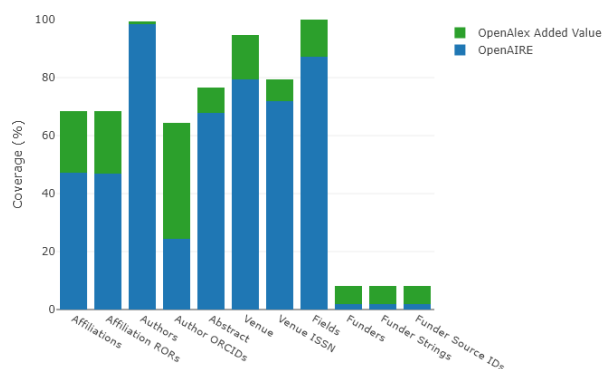
coverage comparison - 2021



coverage added value - all time



coverage added value - 2021



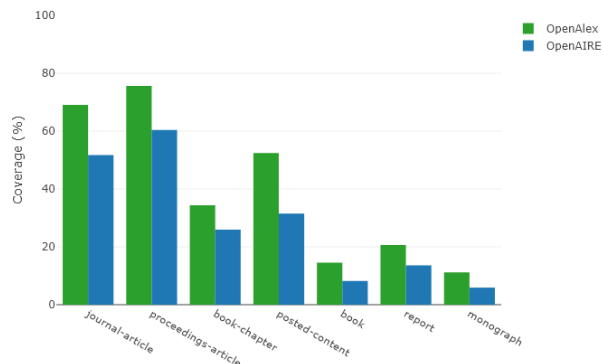
coverage added value - all time

coverage added value - 2021

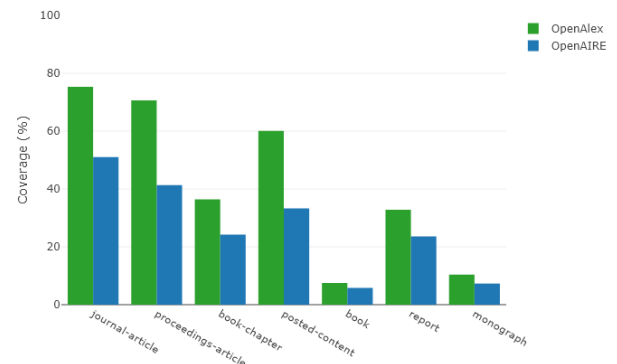
Details

Metadata coverage in OpenAlex and OpenAIRE by publication type (overlap only)

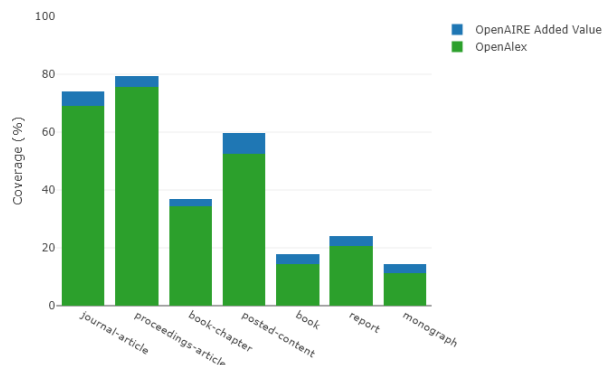
Affiliations



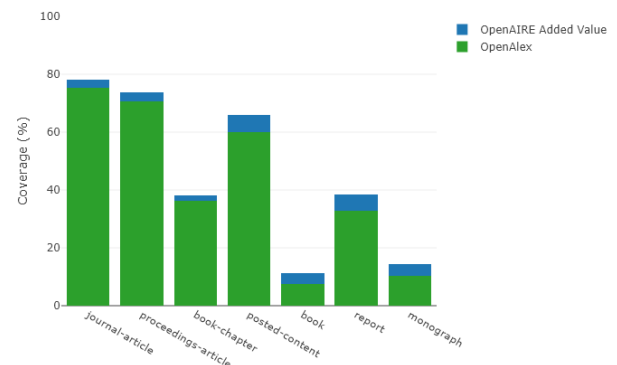
coverage comparison - all time



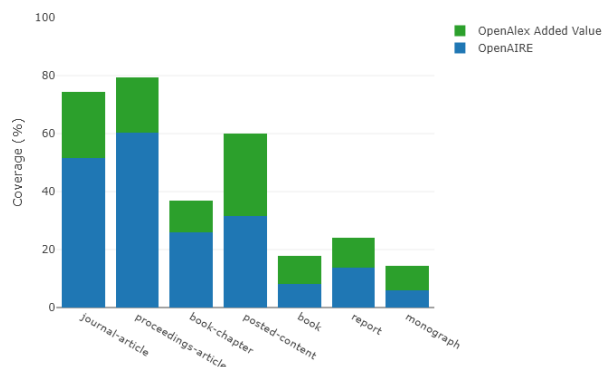
coverage comparison - 2021



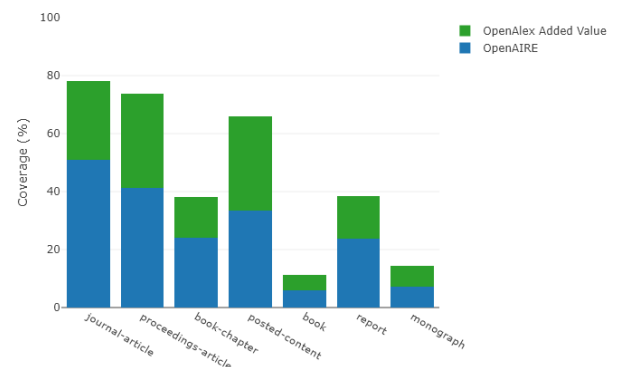
coverage added value - all time



coverage added value - 2021

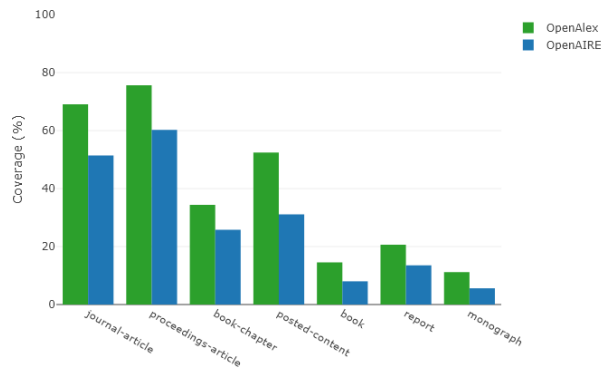


coverage added value - all time

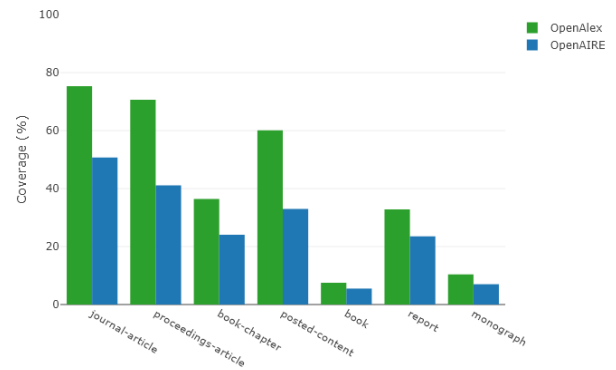


coverage added value - 2021

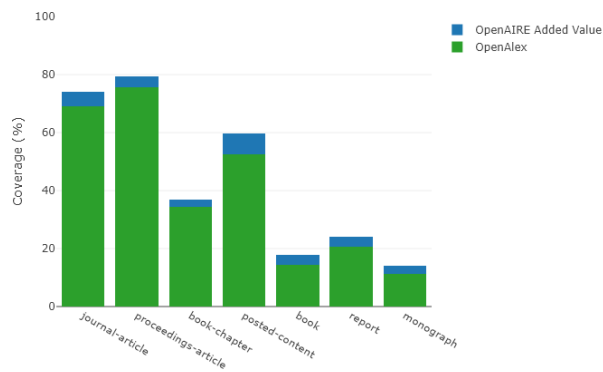
Affiliation RORs



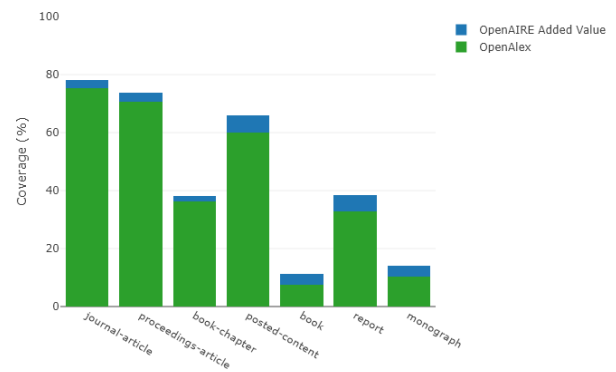
coverage comparison - all time



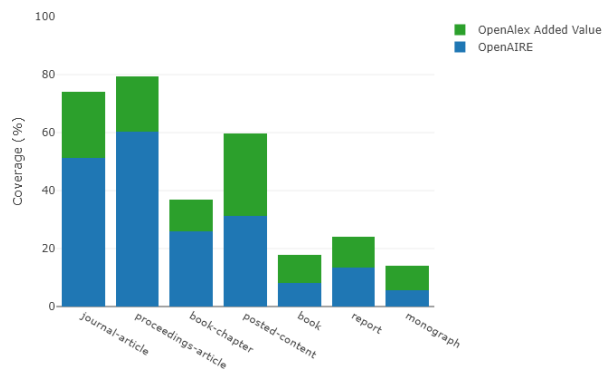
coverage comparison - 2021



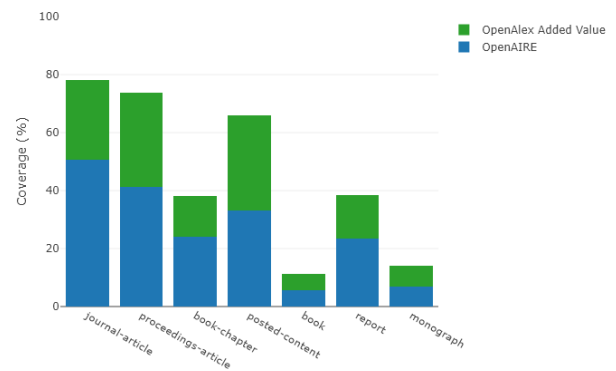
coverage added value - all time



coverage added value - 2021

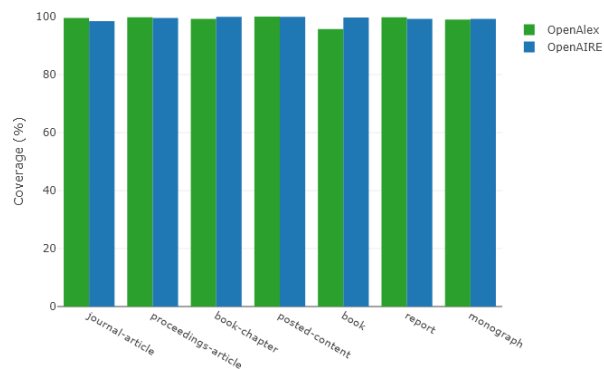


coverage added value - all time

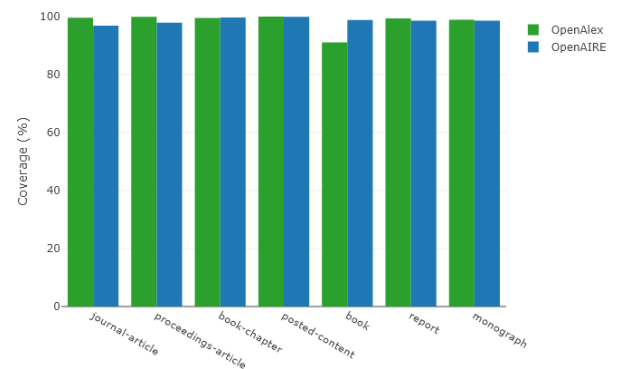


coverage added value - 2021

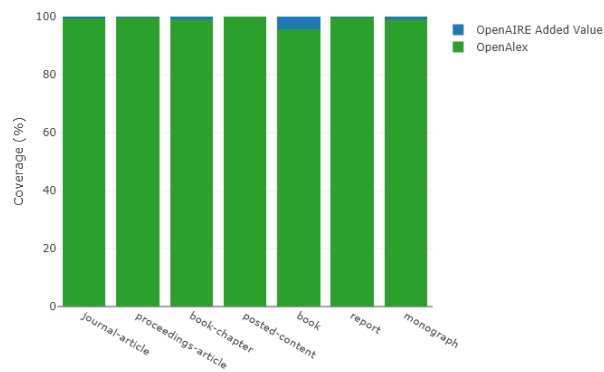
Authors



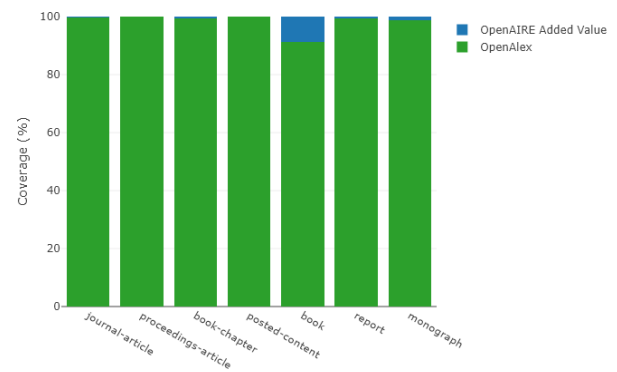
coverage comparison - all time



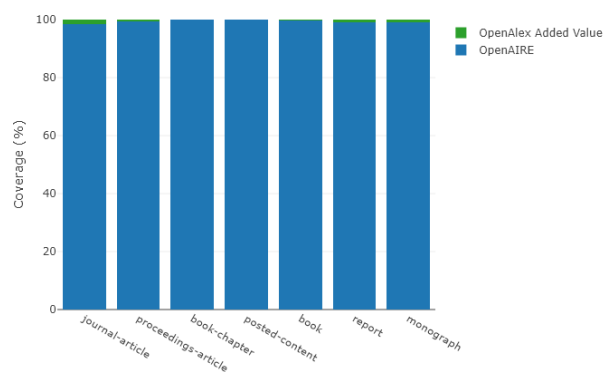
coverage comparison - 2021



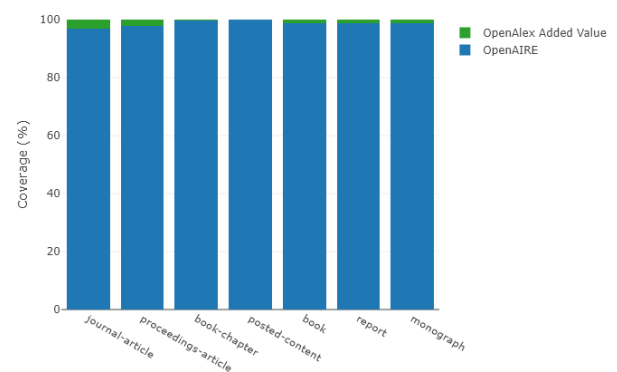
coverage added value - all time



coverage added value - 2021

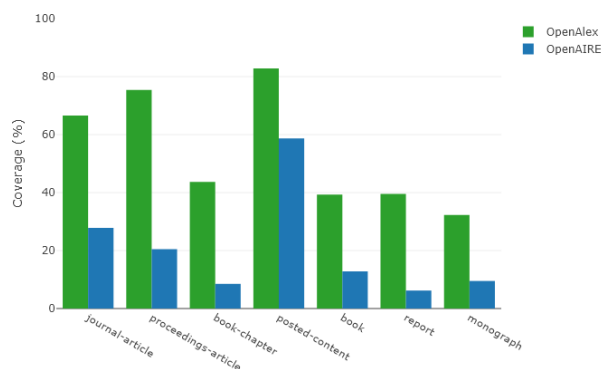


coverage added value - all time

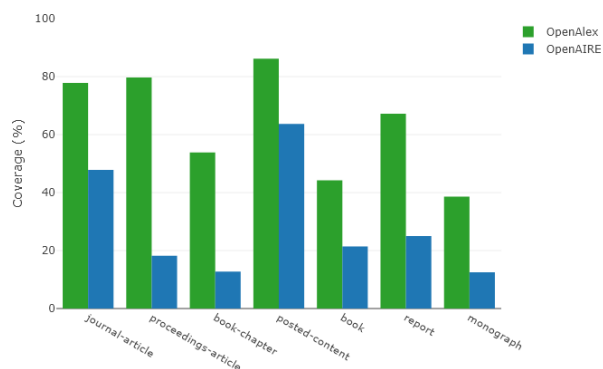


coverage added value - 2021

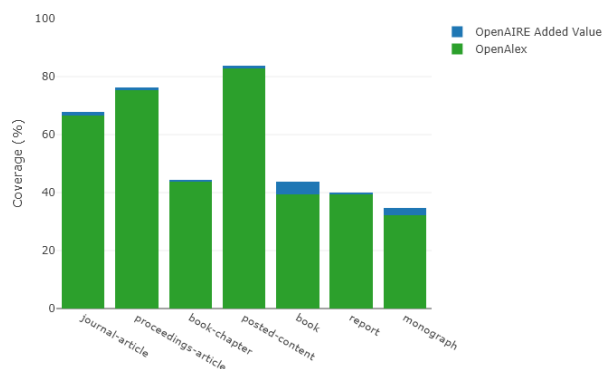
Author ORCIDs



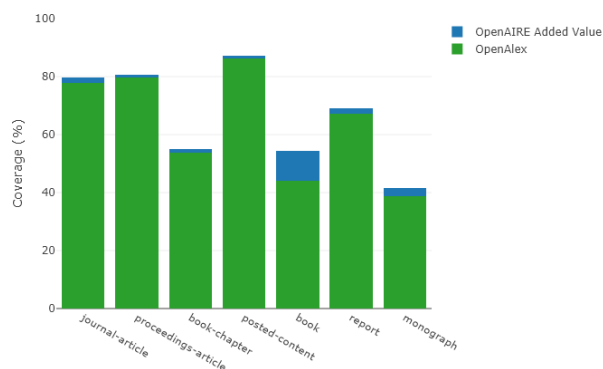
coverage comparison - all time



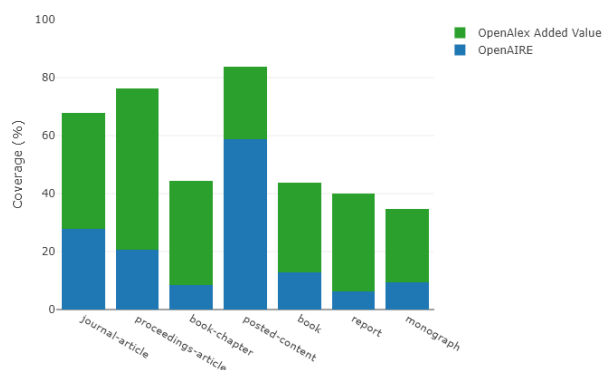
coverage comparison - 2021



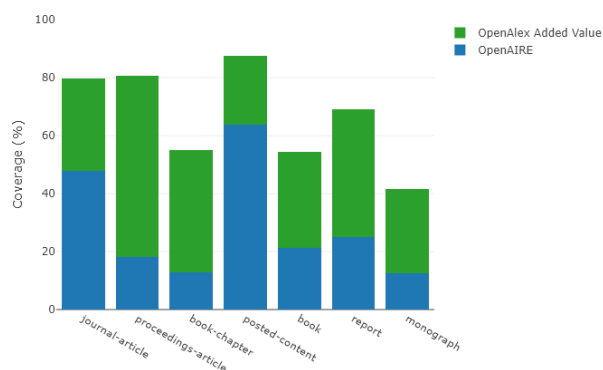
coverage added value - all time



coverage added value - 2021

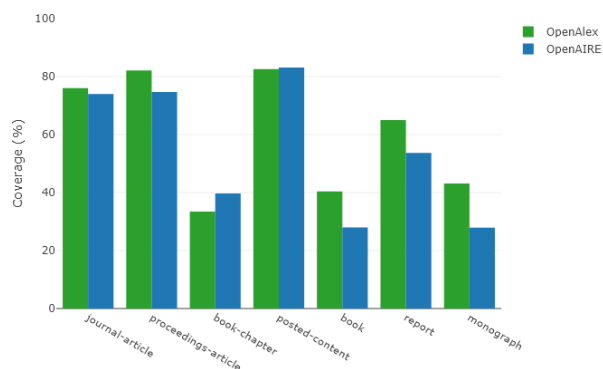


coverage added value - all time

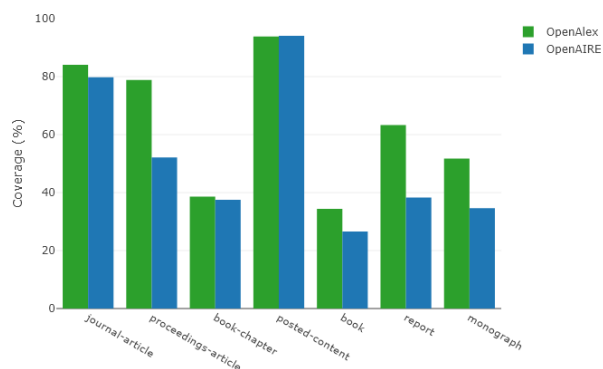


coverage added value - 2021

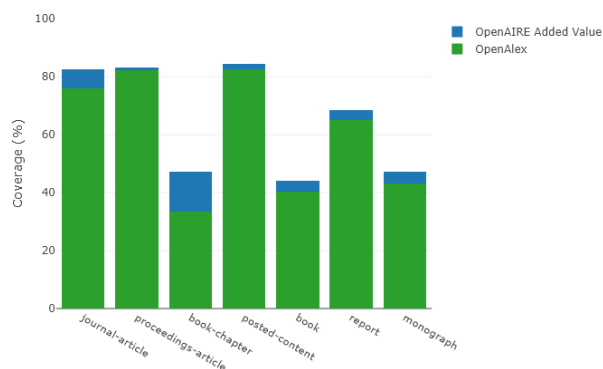
Abstract



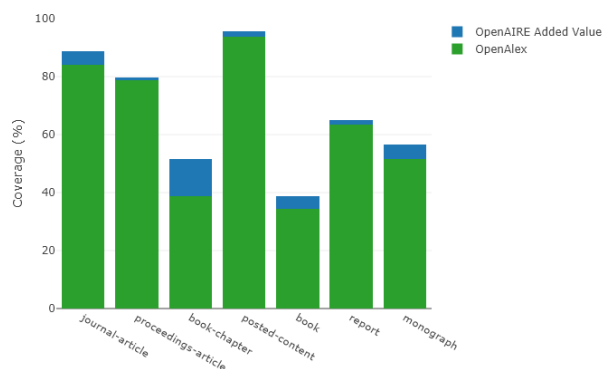
coverage comparison - all time



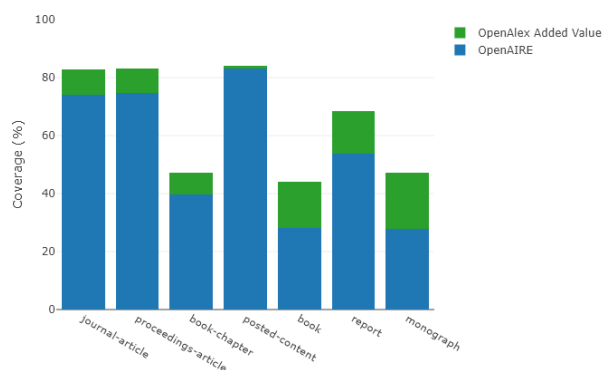
coverage comparison - 2021



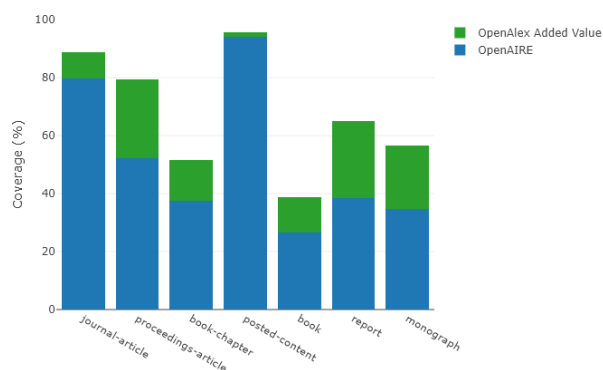
coverage added value - all time



coverage added value - 2021

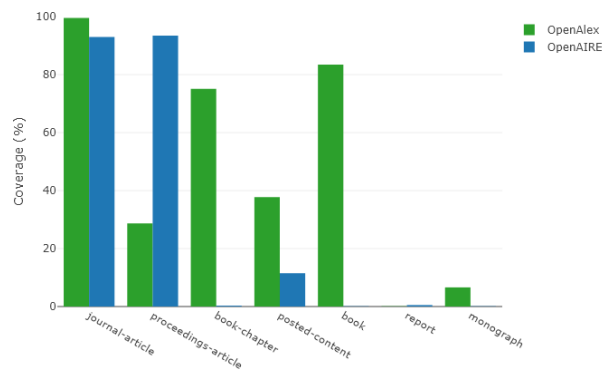


coverage added value - all time

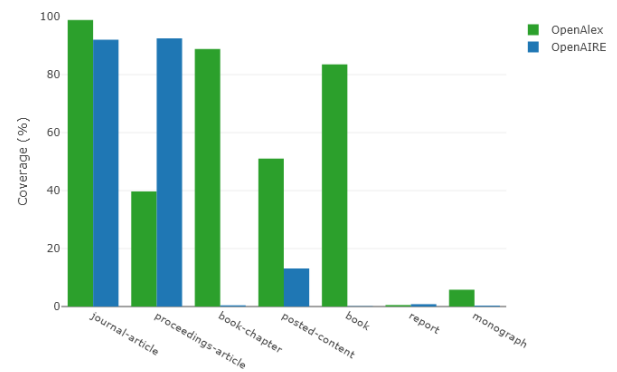


coverage added value - 2021

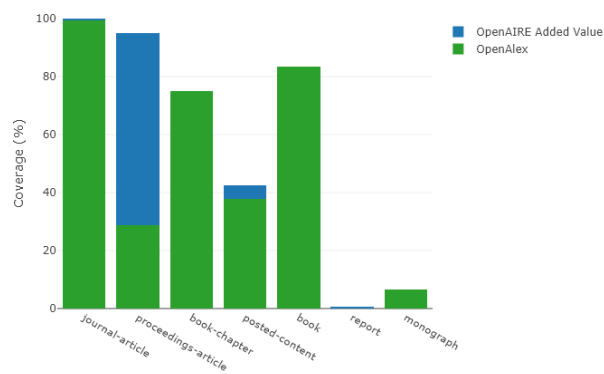
Venue



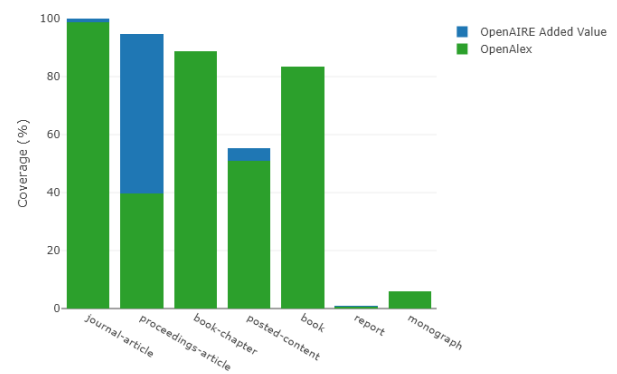
coverage comparison - all time



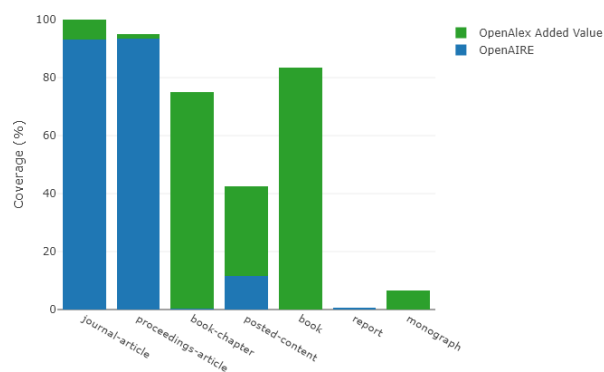
coverage comparison - 2021



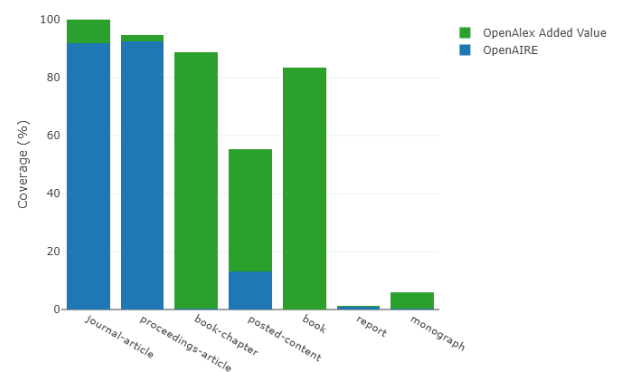
coverage added value - all time



coverage added value - 2021

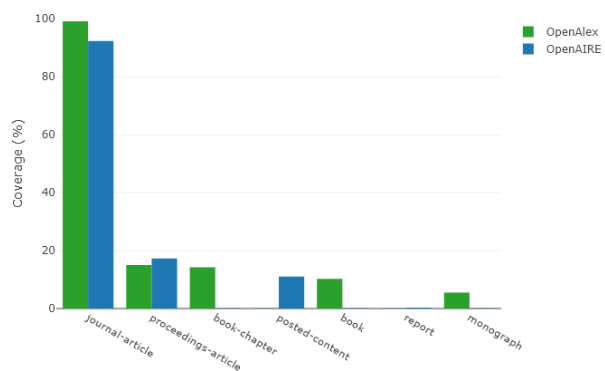


coverage added value - all time

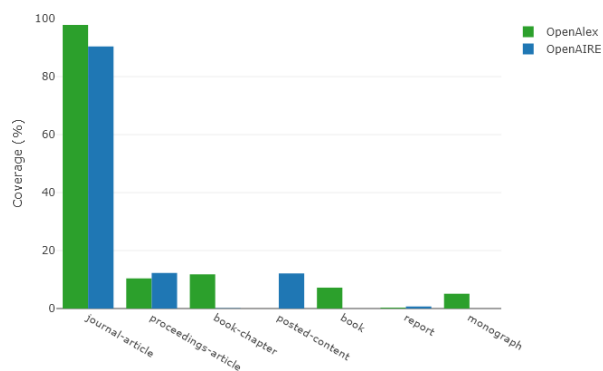


coverage added value - 2021

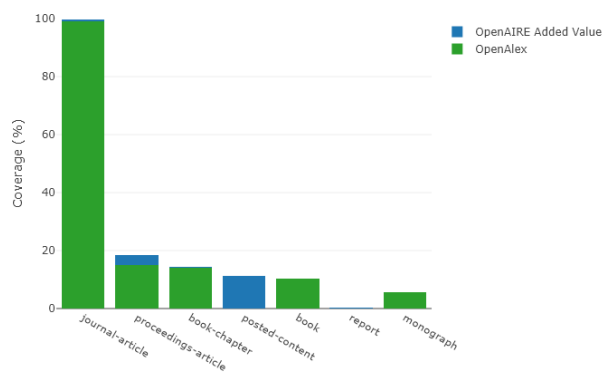
Venue ISSN



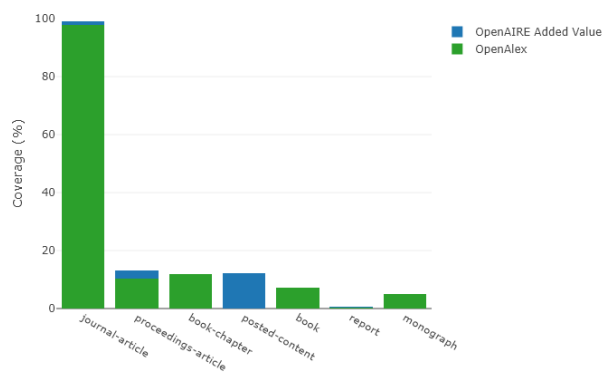
coverage comparison - all time



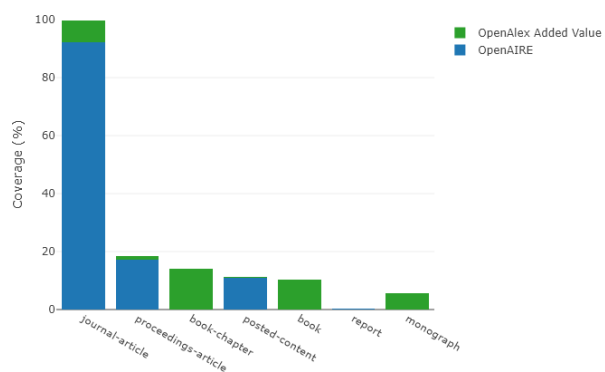
coverage comparison - 2021



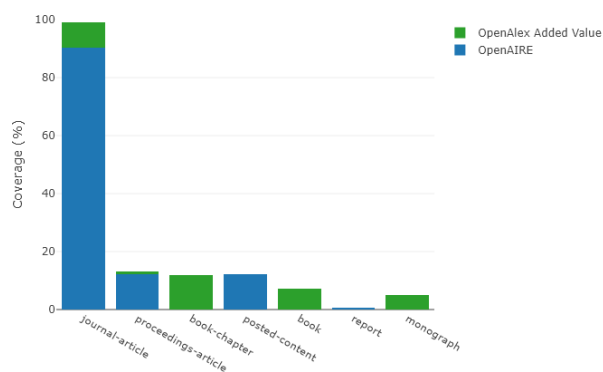
coverage added value - all time



coverage added value - 2021

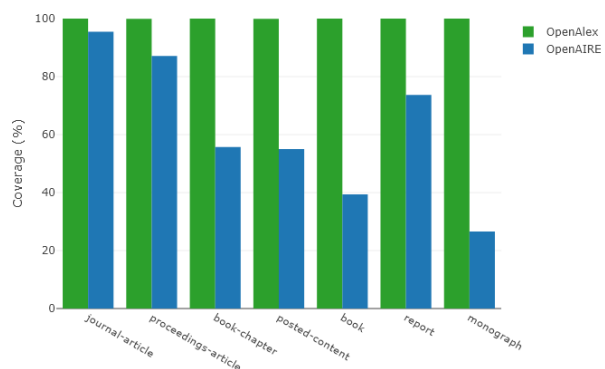


coverage added value - all time

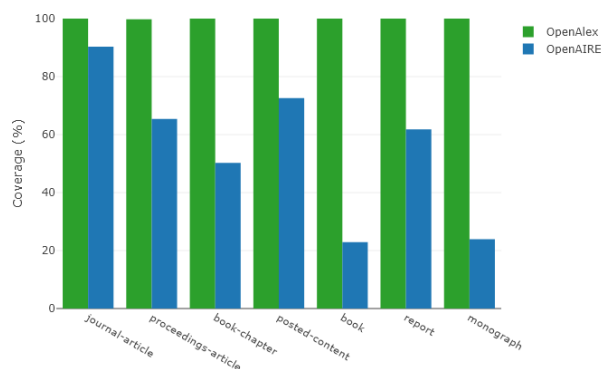


coverage added value - 2021

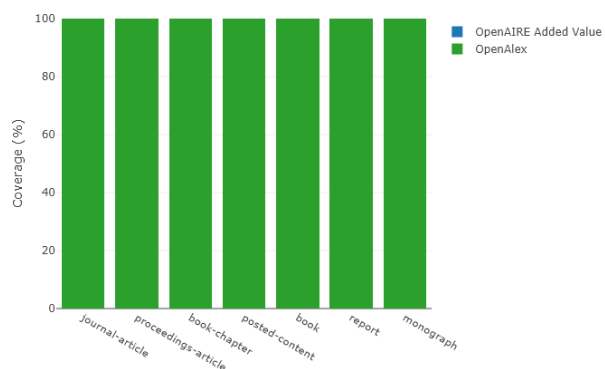
Fields



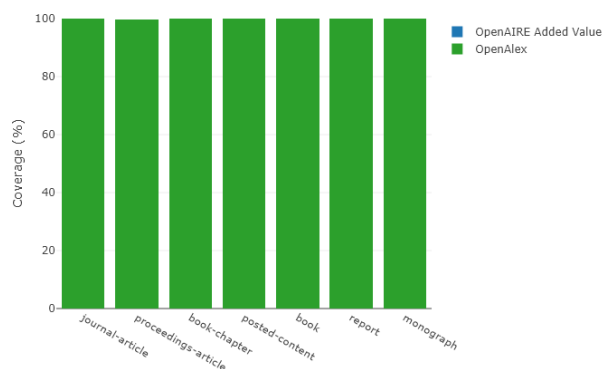
coverage comparison - all time



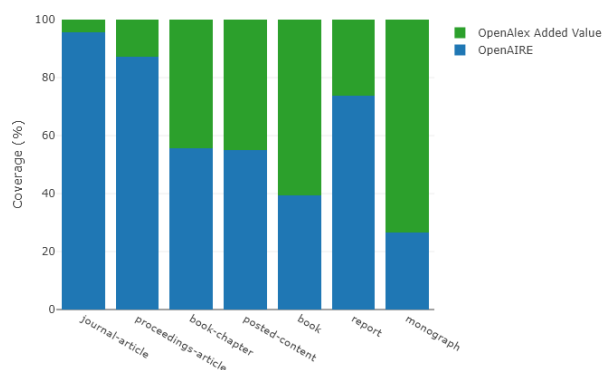
coverage comparison - 2021



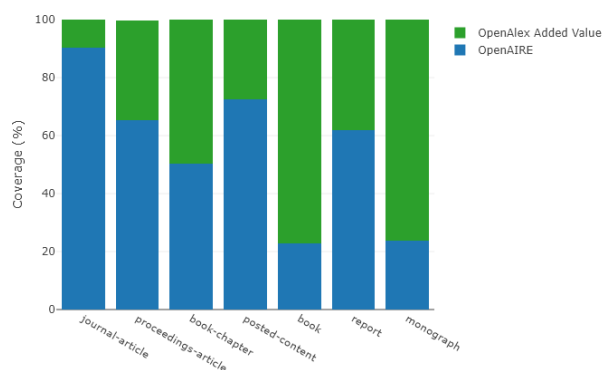
coverage added value - all time



coverage added value - 2021

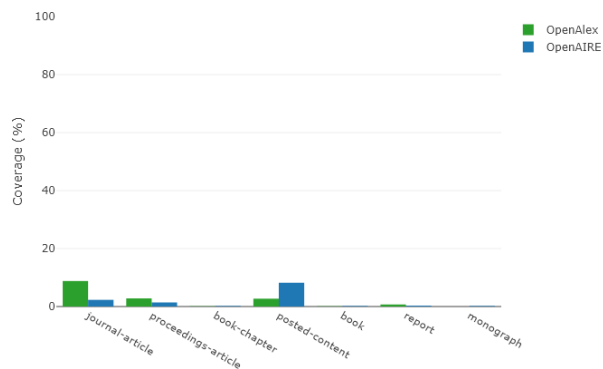


coverage added value - all time

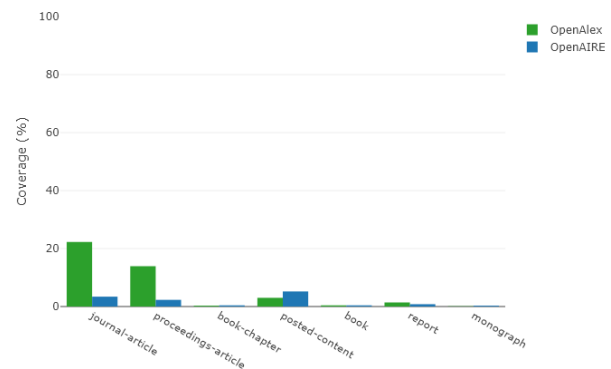


coverage added value - 2021

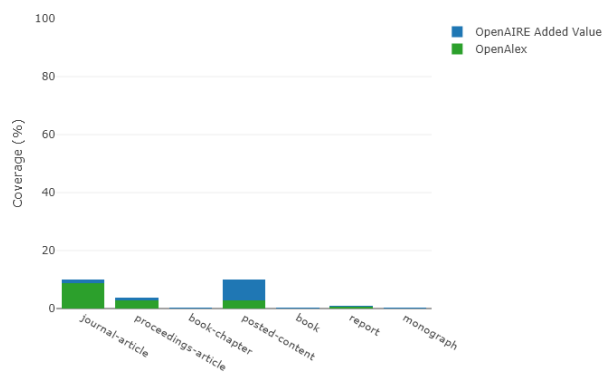
Funders



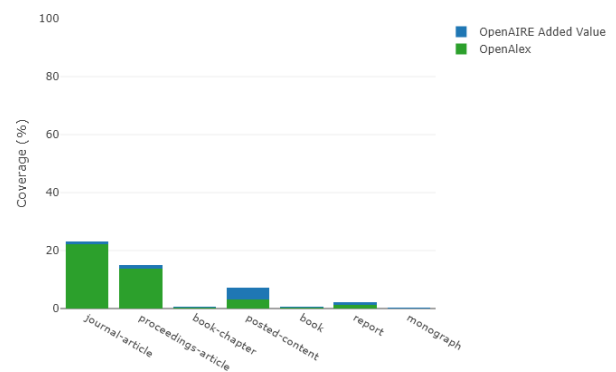
coverage comparison - all time



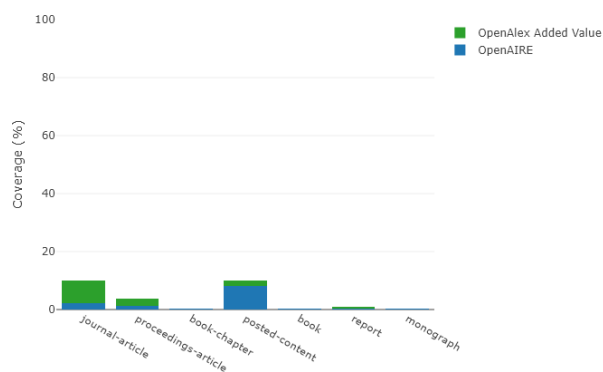
coverage comparison - 2021



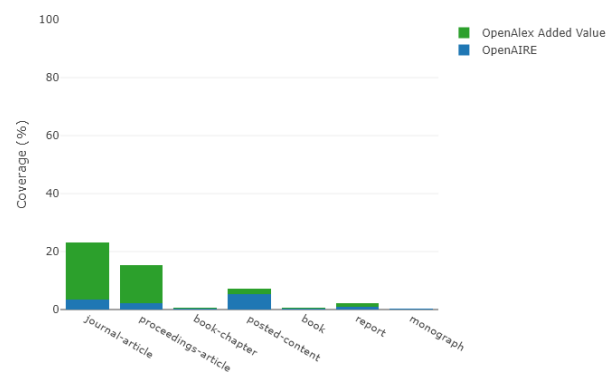
coverage added value - all time



coverage added value - 2021

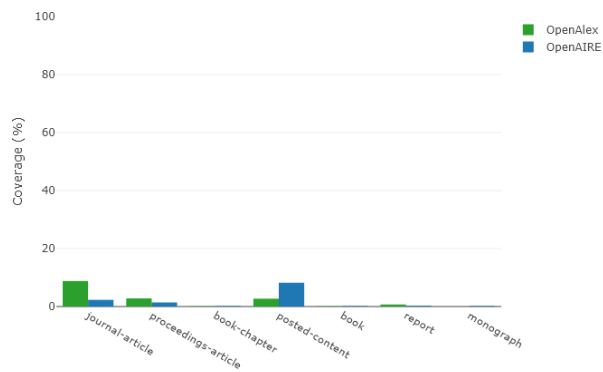


coverage added value - all time

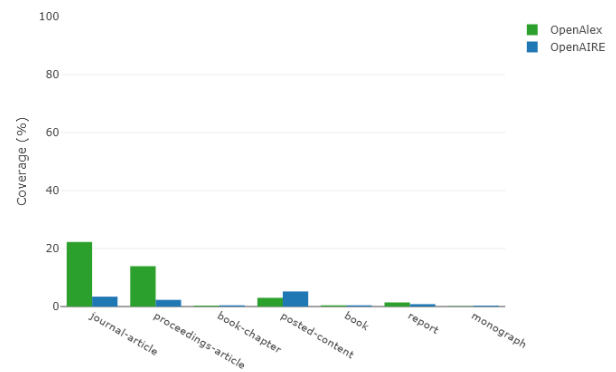


coverage added value - 2021

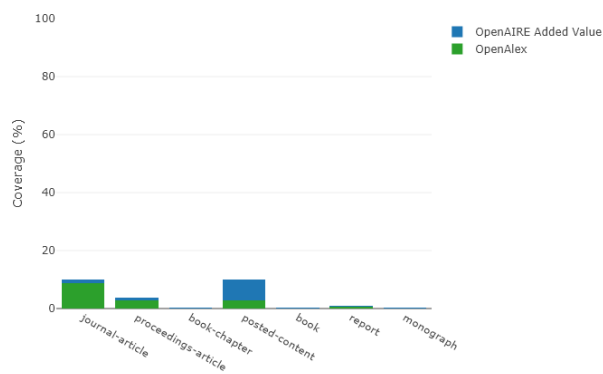
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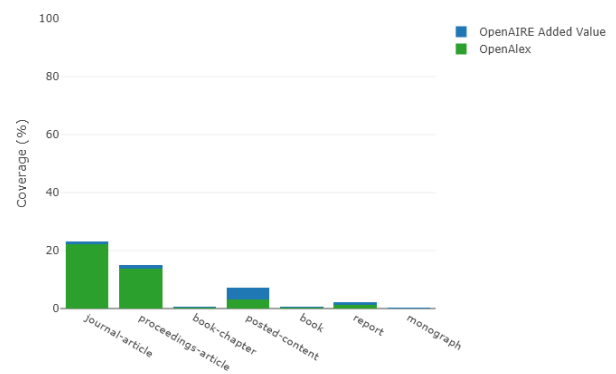
coverage comparison - all time



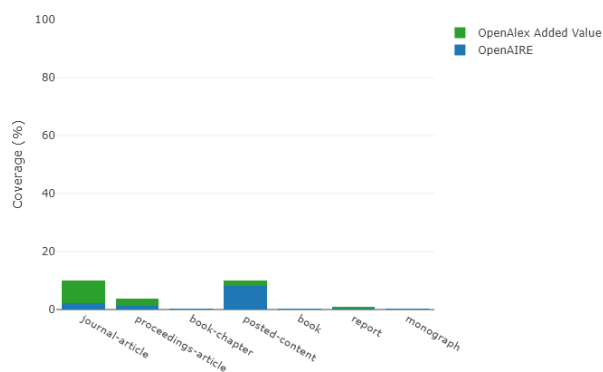
coverage comparison - 2021



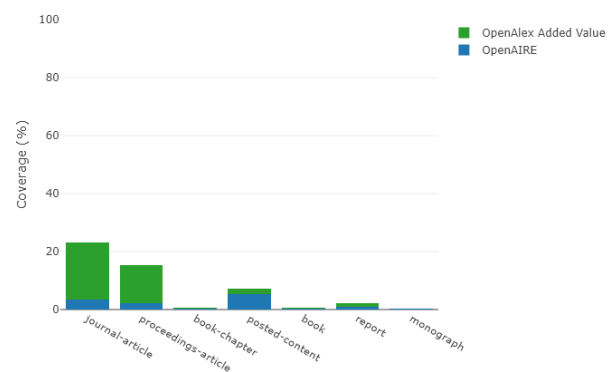
coverage added value - all time



coverage added value - 2021

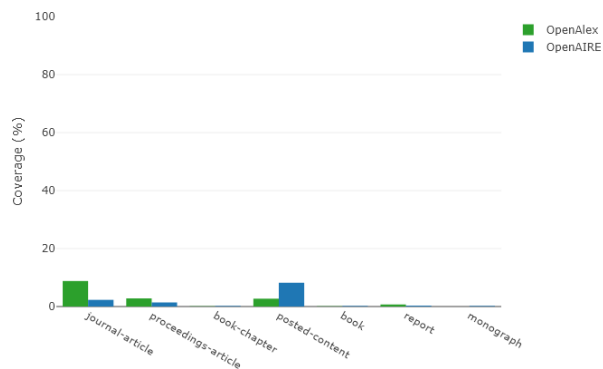


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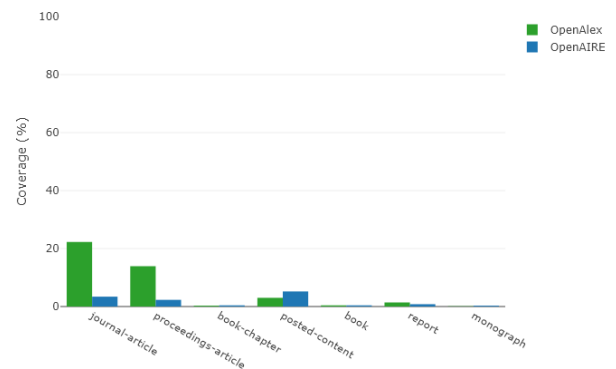


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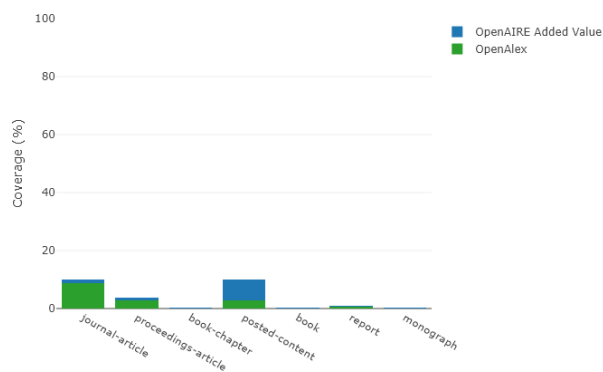
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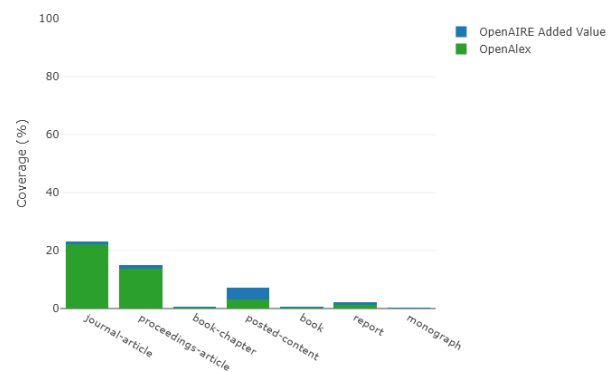
coverage comparison - all time



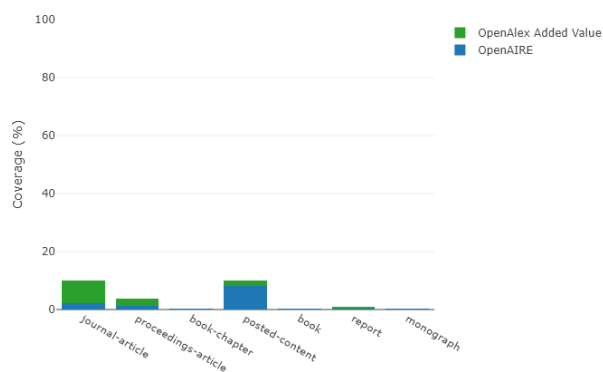
coverage comparison - 2021



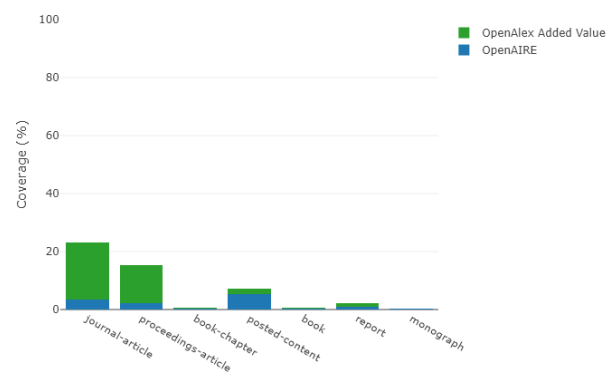
coverage added value - all time



coverage added value - 2021



coverage added value - all time

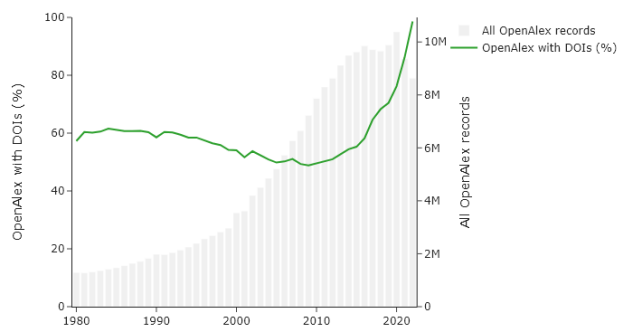


coverage added value - 2021

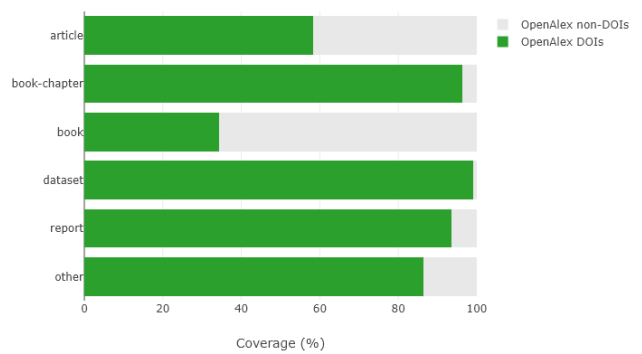
OpenAlex Coverage Beyond DOIs

DOIs vs non-DOIs

By year and publication type



coverage by publication date - all time

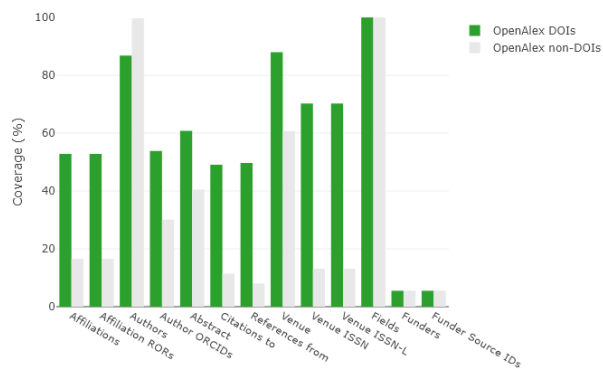


coverage by publication type - all time

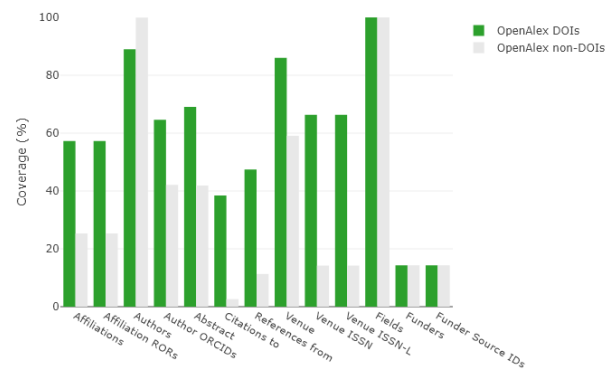
Metadata Coverage

Overview

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



coverage comparison - all time

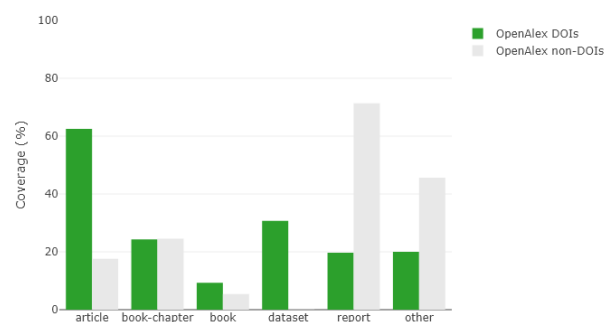


coverage comparison - 2021

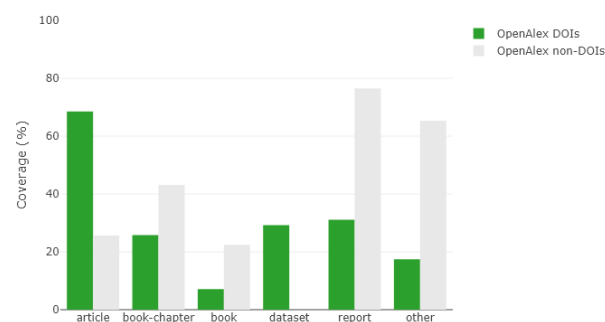
Details

Metadata coverage for DOIs and non-DOIs by publication type

Affiliations

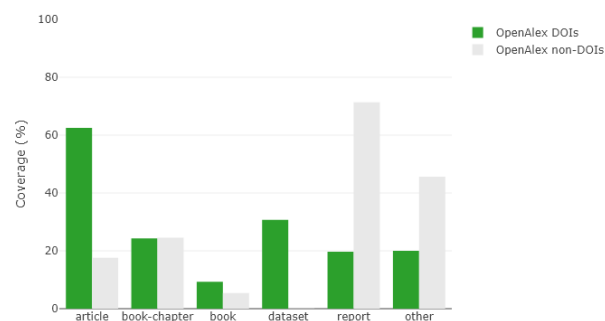


coverage comparison - all time

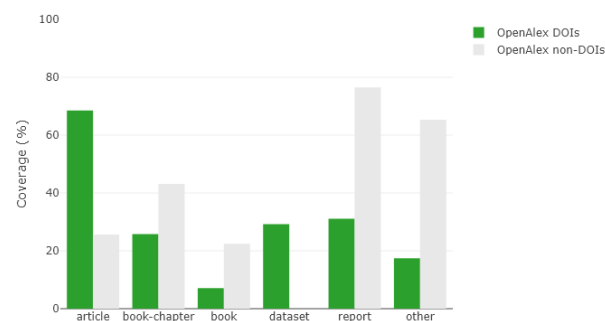


coverage comparison - 2021

Affiliation RORs

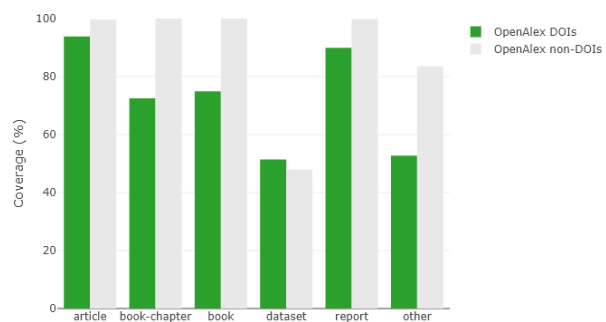


coverage comparison - all time

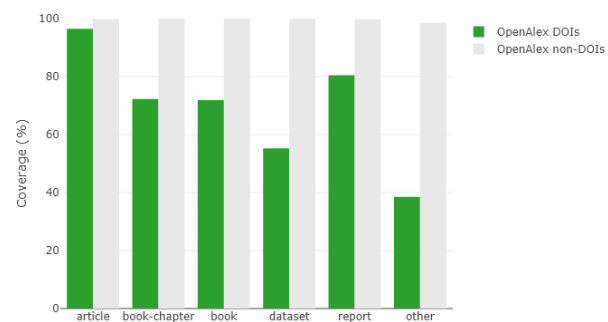


coverage comparison - 2021

Authors

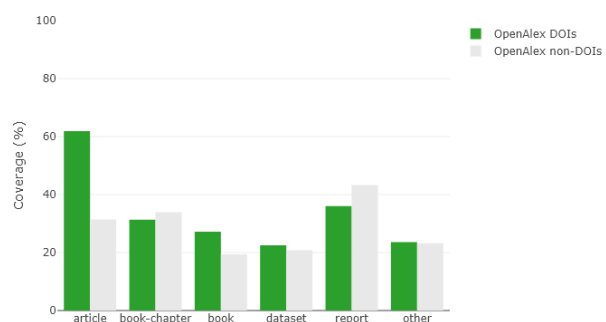


coverage comparison - all time

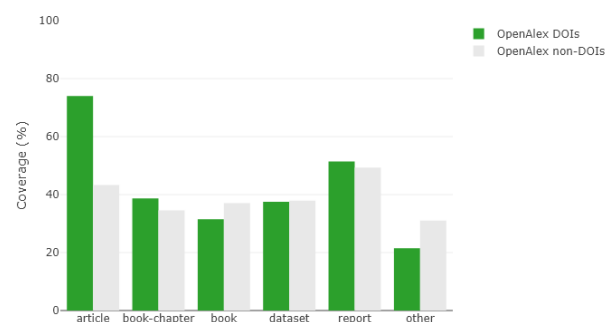


coverage comparison - 2021

Author ORCIDs

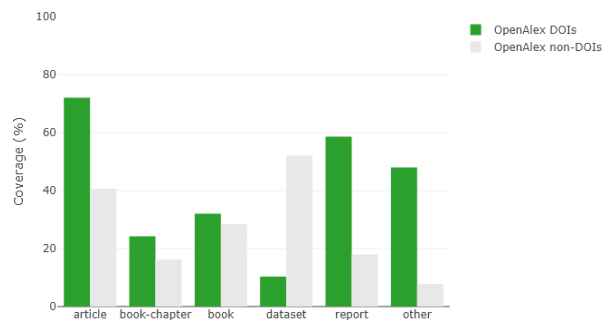


coverage comparison - all time

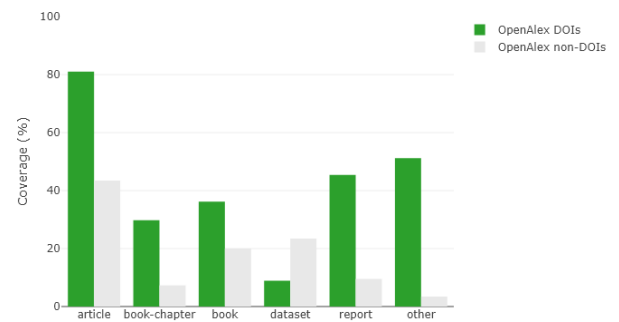


coverage comparison - 2021

Abstract

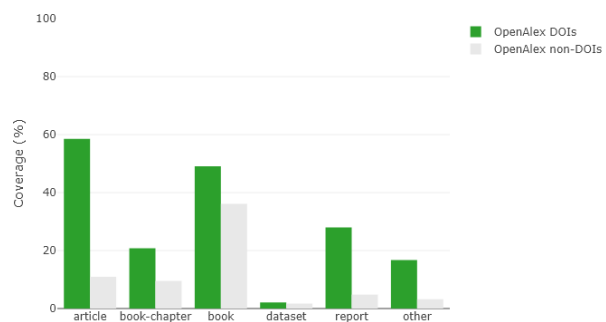


coverage comparison - all time

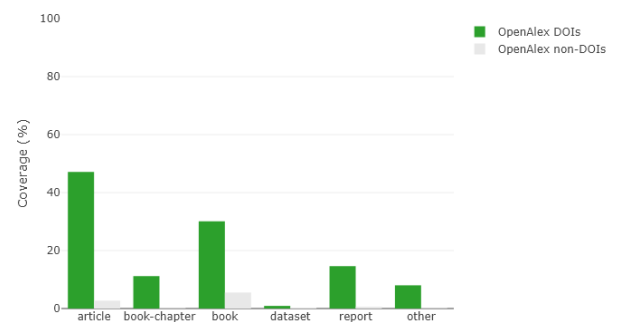


coverage comparison - 2021

Citations to

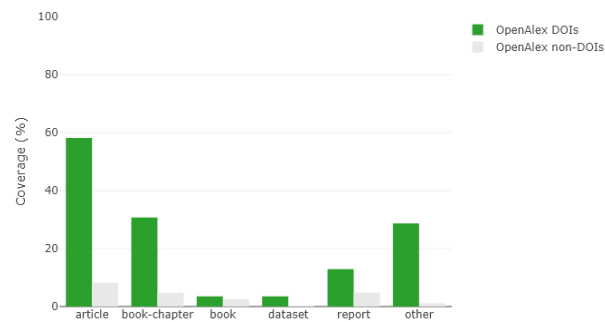


coverage comparison - all time

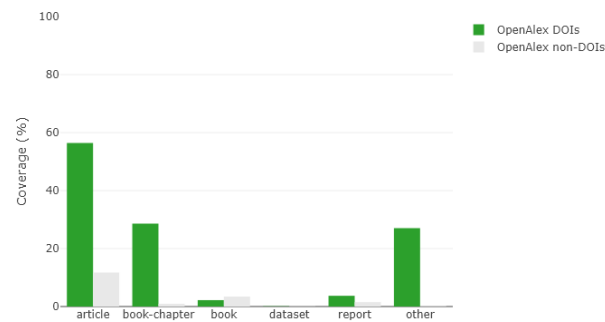


coverage comparison - 2021

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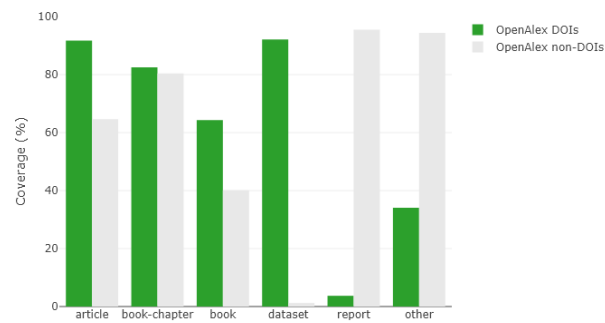


coverage comparison - all time

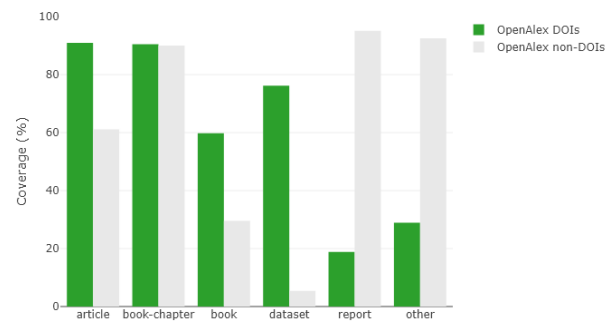


coverage comparison - 2021

Venue

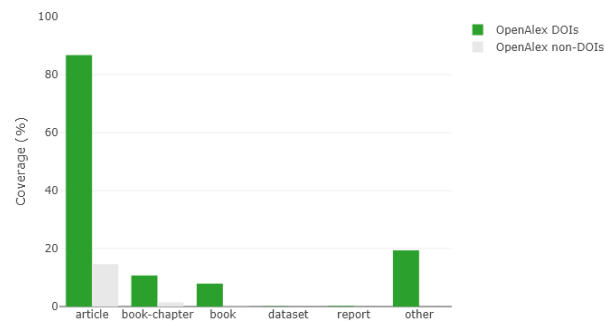


coverage comparison - all time

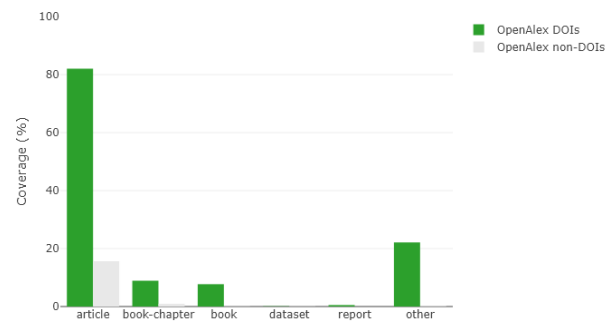


coverage comparison - 2021

Venue ISSN

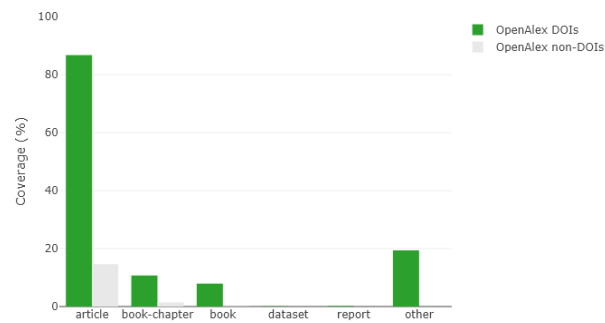


coverage comparison - all time

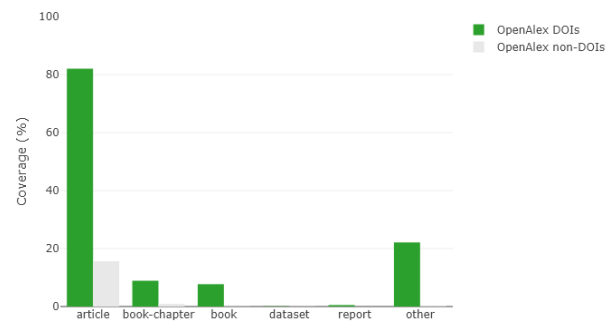


coverage comparison - 2021

Venue ISSN-L

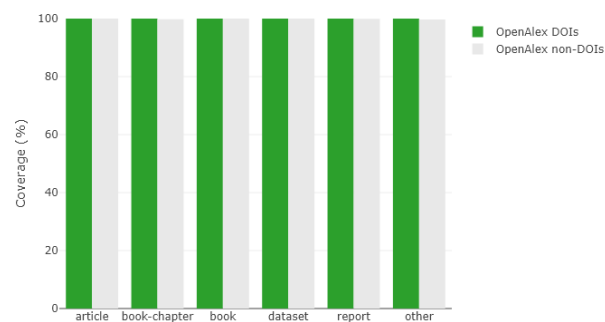


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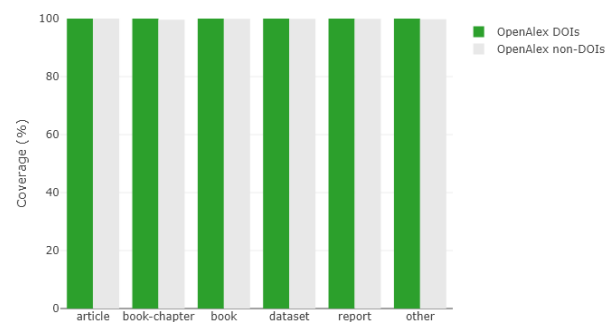


coverage comparison - 2021

Fields

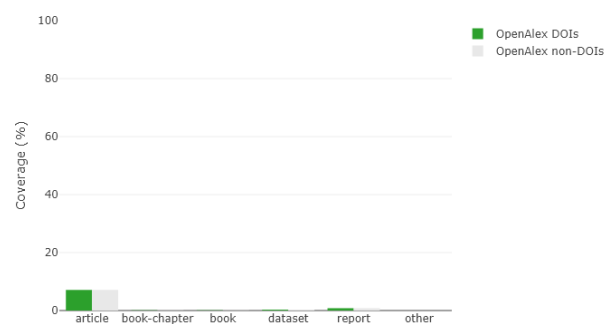


coverage comparison - all time

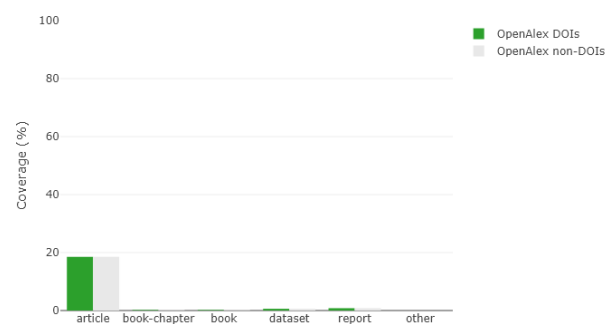


coverage comparison - 2021

Funders

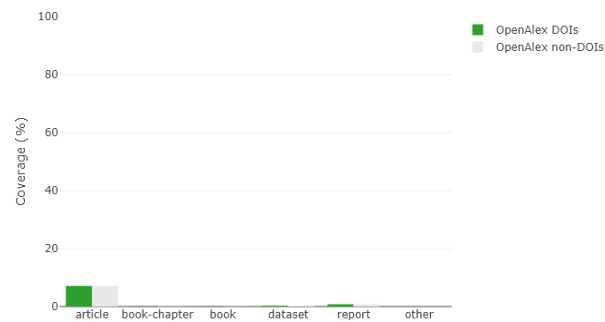


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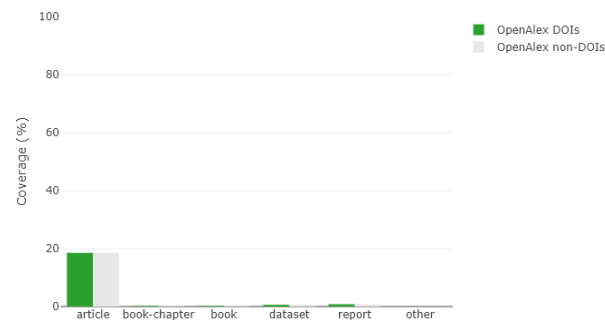


coverage comparison - 2021

Funder Source IDs



coverage comparison - all time

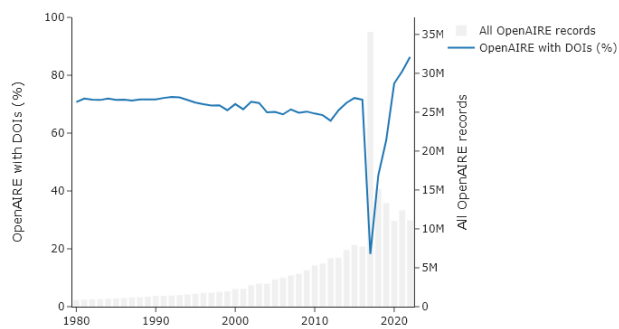


coverage comparison - 2021

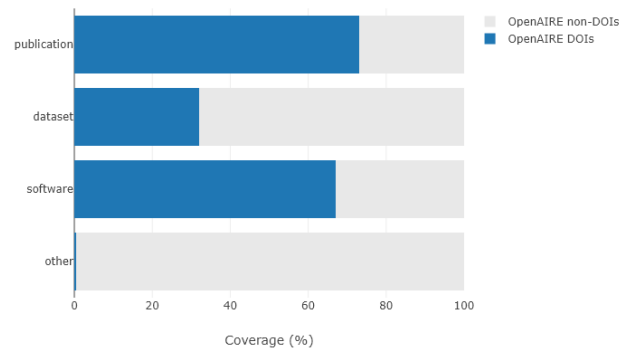
OpenAIRE Coverage Beyond DOIs

DOIs vs non-DOIs

By year and publication type



coverage by publication date - all time

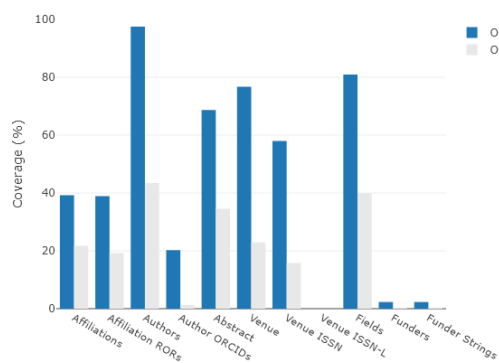


coverage by publication type - all time

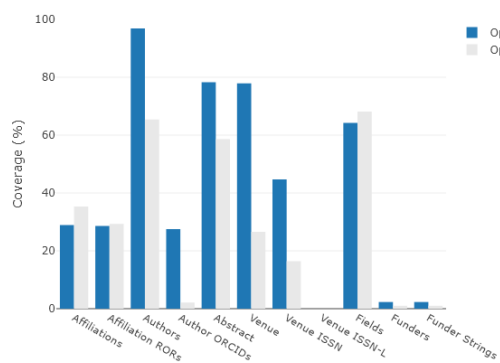
Metadata Coverage

Overview

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



coverage comparison - all time

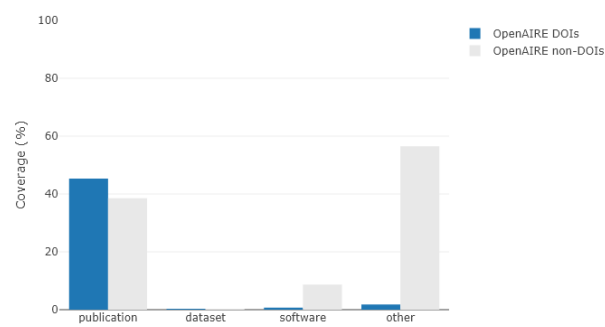


coverage comparison - 2021

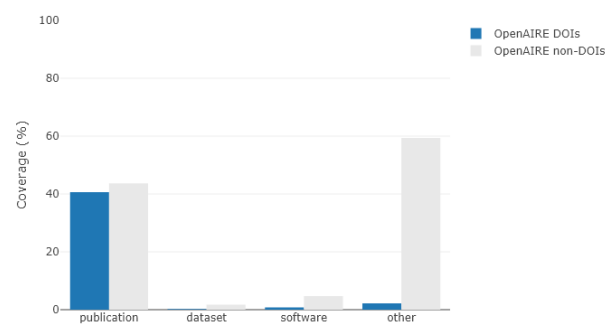
Details

Metadata coverage for DOIs and non-DOIs by publication type

Affiliations

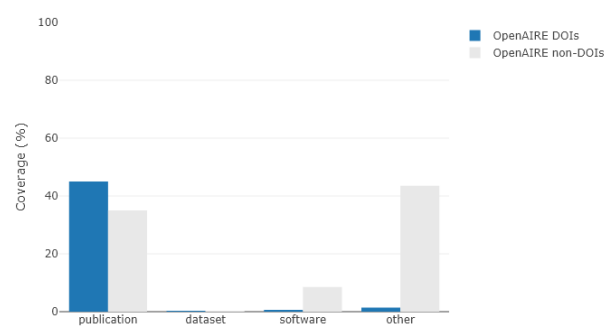


coverage comparison - all time

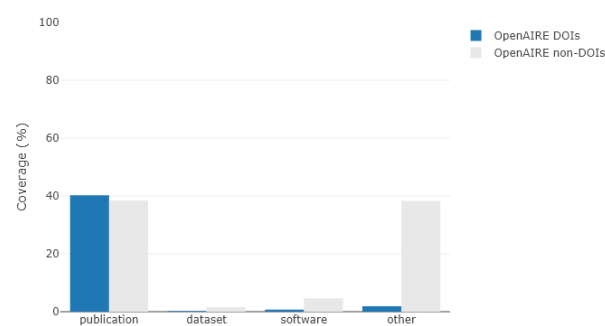


coverage comparison - 2021

Affiliation RORs

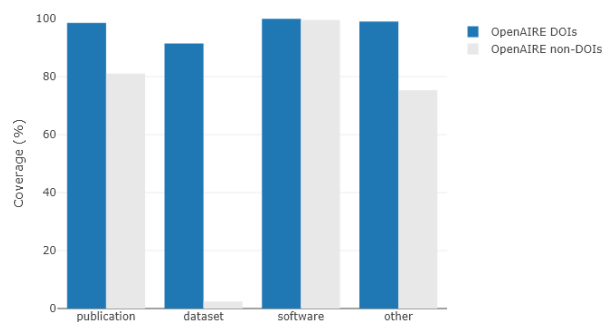


coverage comparison - all time

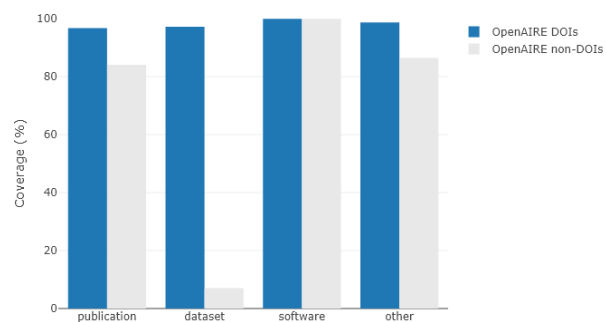


coverage comparison - 2021

Authors

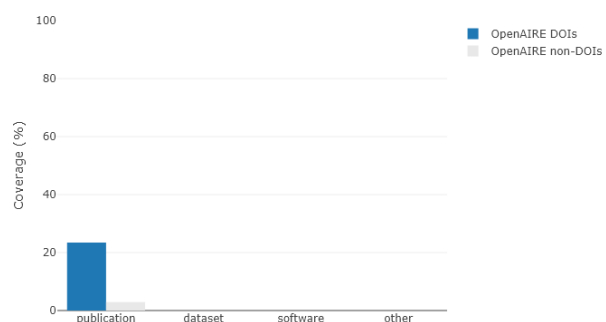


coverage comparison - all time

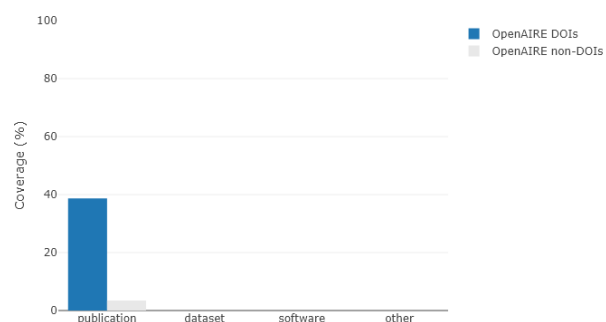


coverage comparison - 2021

Author ORCIDs

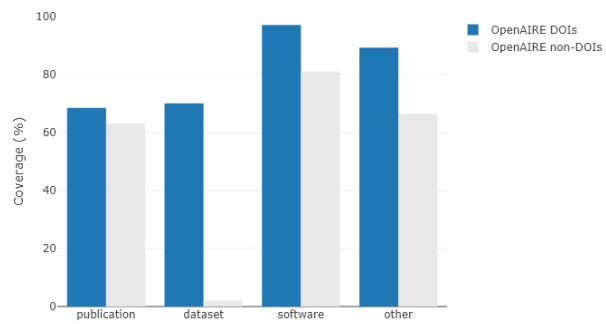


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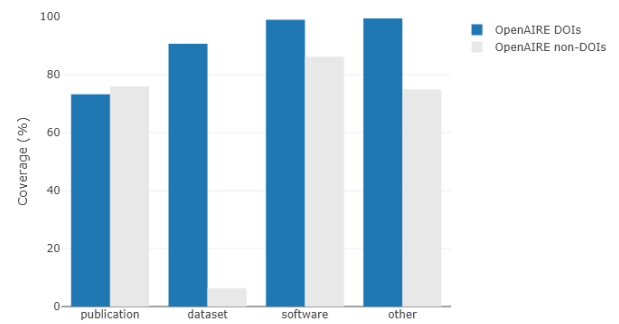


coverage comparison - 2021

Abstract

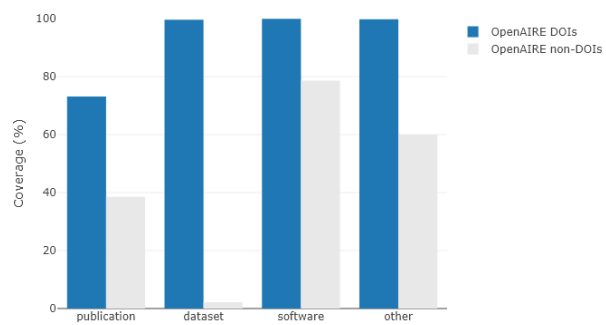


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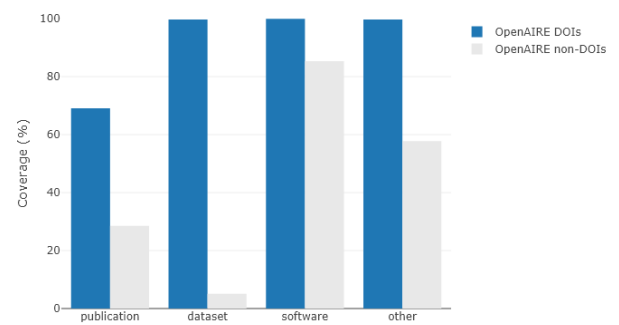


coverage comparison - 2021

Venue

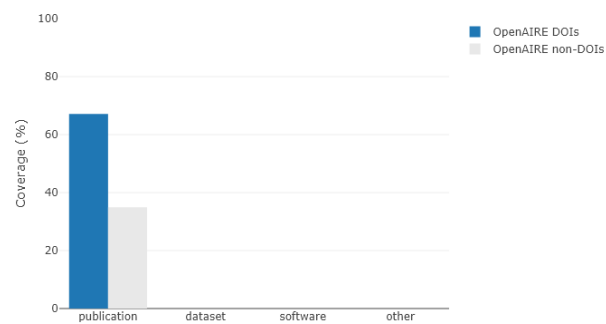


coverage comparison - all time

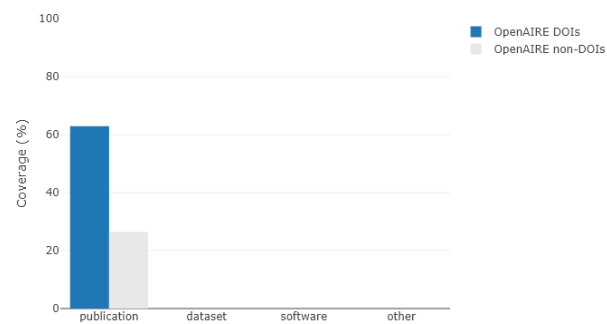


coverage comparison - 2021

Venue ISSN

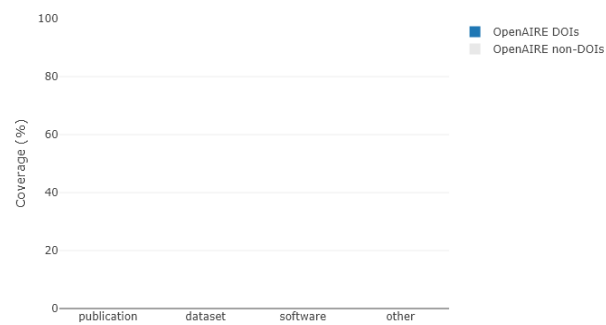


coverage comparison - all time

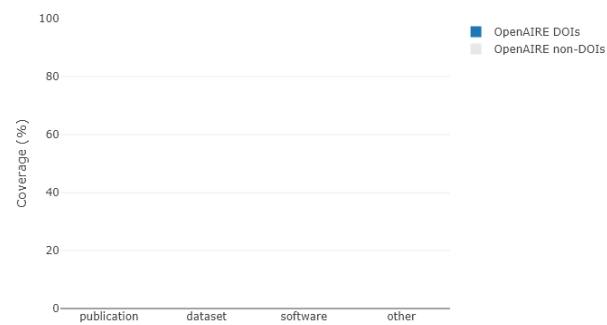


coverage comparison - 2021

Venue ISSN-L

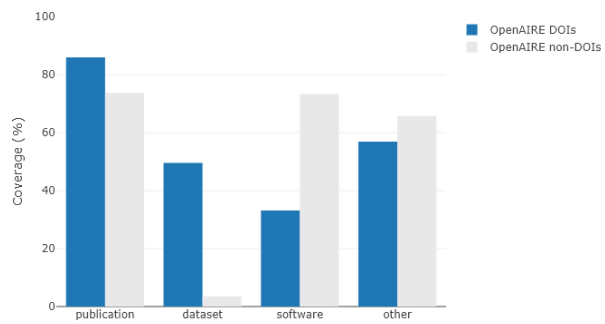


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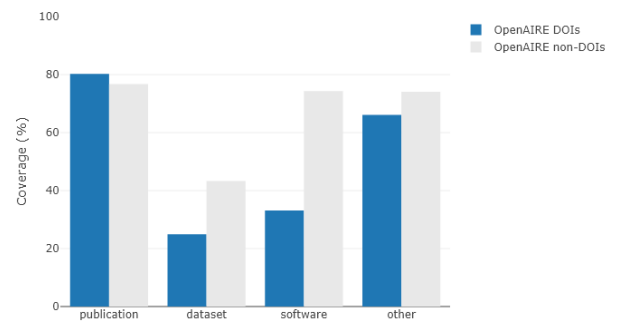


coverage comparison - 2021

Fields

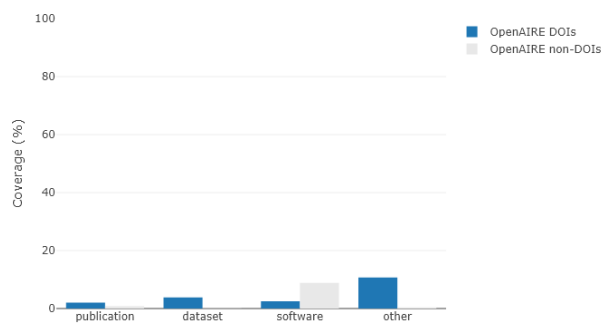


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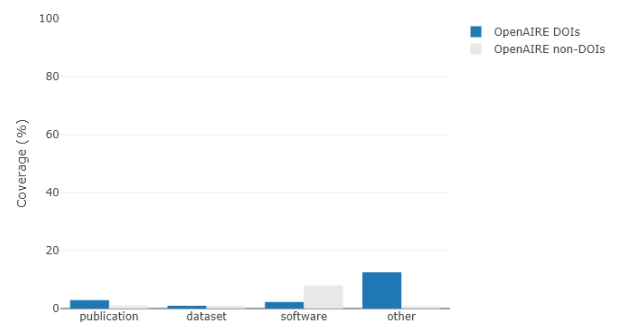


coverage comparison - 2021

Funders

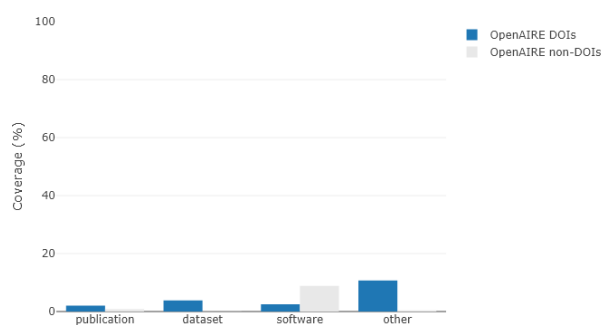


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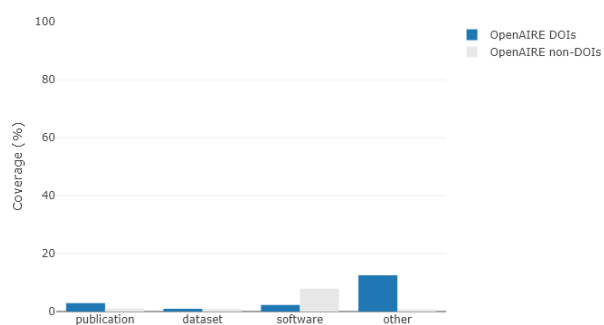


coverage comparison - 2021

Funder Strings



coverage comparison - all time



coverage comparison - 2021