

Research Traceability via PID and Japan Open Science Monitor Beta Version

Chifumi Nishioka (National Institute of Informatics)

Thursday, June 25, 2026
Japan Open Science Summit 2026
JST-CHORUS Session
"How PIDs Can Change Research"

Open Science Monitoring (OSM)

UNESCO Open Science Recommendation: “Member States should monitor policies and mechanisms related to open science using a combination of quantitative and qualitative methods.”

Kazushi Yonekawa. E2585 – UNESCO “Recommendation on Open Science.” Current Awareness E. No. 433, 2022.

UNESCO Recommendation on Open Science. UNESCO, 2021.

Open Science Monitoring (OSM): A process for observing and evaluating activities related to the principles and practices of open science

- Monitor progress on open science at various levels (e.g., national, institutional).
 - Example: What percentage of papers by researchers at my university are open access?
- OSM contributes to the following:
 - **Understanding the current situation and formulating appropriate strategies:** By objectively analyzing “where the challenges lie and what is working,” effective strategies can be formulated.
 - **Designing effective incentives:** It provides a basis for designing incentives (motivation) for researchers to practice open science.

Open Science Monitoring contributes to the further advancement of open science

Overview of NII's OSM Initiatives

For Research Institutions

CiNii Research Dashboard for Institutions

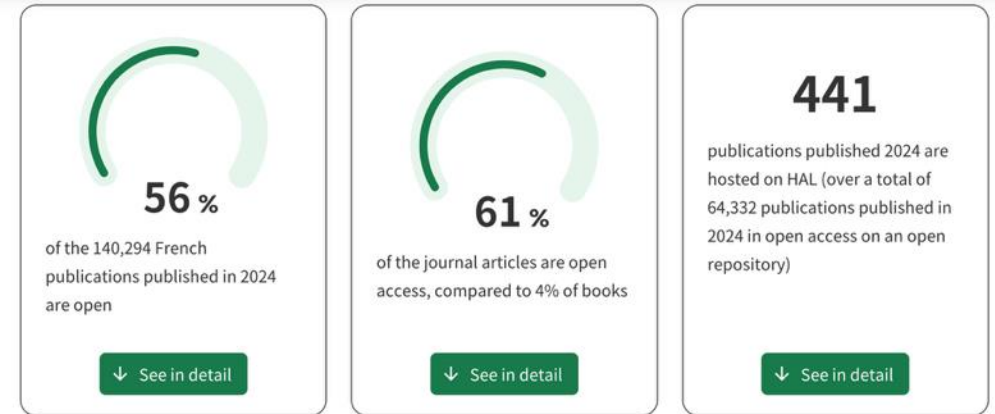
Based on the CiNii Research Knowledge Graph, which comprehensively covers Japanese academic papers and other materials, visualizes open science initiatives at research institutions



For Government and Other Organizations

Japan Open Science Monitor

Implementing OA metrics in line with the French Open Science Monitor, a leading OSM initiative, providing metrics comparable to those of other countries



General Scientific fields Publishers Open repositories

What are the opening trends of publications on open archives?

The **open repositories** are open access platforms on which scientific publications are deposited, which can be consulted by anyone. They are most often powered by author deposit, but in some cases may be powered by the journal publishers themselves. Open archives perform different functions: they make articles published in subscription journals available in open access, they ensure the permanent preservation of

French Open Science Monitor Overview

Using reliable, open, and curated data,
 a tool that measures the evolution of open science in France using
 reliable, open, and controlled data
 the tool that measures the evolution of open science in France using reliable, open, and controlled data

■ Development Objectives

- Strategic strengthening and coordination of policies to promote open science
- Promoting understanding of research outcomes in France

■ Provided Metrics

To ensure transparency and reproducibility (→ Realizing reliable OSM), **calculations** will generally follow the principle of “**based on open data and open source**”

- Publications
- Research Data
- Software and Code
- Clinical Trials

**Internationally recognized as a leading example
 of open science monitoring**

Development of Japan Open Science Monitor

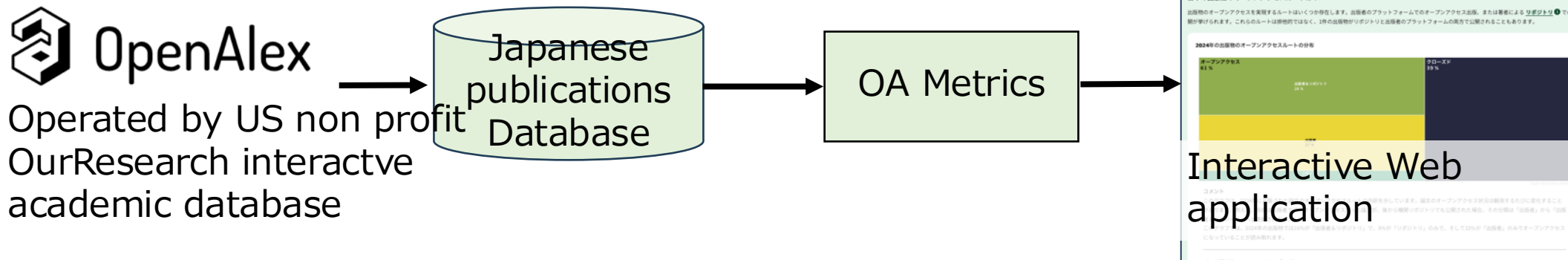
[Purpose]

To implement a Japanese Open Science Monitor based on the French Open Science Monitor model,

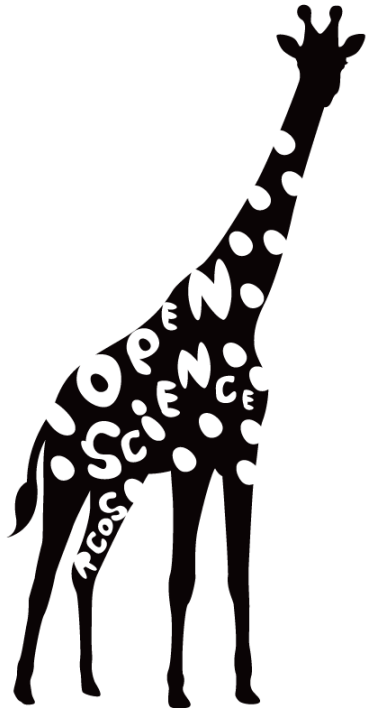
- enable the monitoring of OA status according to global standards and facilitate comparative analysis with other countries
- Identify differences between the OSM and the CiNii Research Knowledge Graph, and develop the OSM by leveraging the strengths of both

[Development Overview]

As described below, we have implemented **the** French Open Science Monitor's **metrics regarding open access to publications**



Japan Open Science Monitor Beta



NII RCOS

Japan Open Science Monitor 試験版

Top 出版物 About

日本のオープンサイエンスを、データで可視化する。

Japan Open Science Monitorは、オープンデータを用いて日本における研究成果の公開状況を客観的に観測するプラットフォームです。論文のオープンアクセス（OA）率を透明性の高い手法で測定することで日本のオープンサイエンスの「現在地」を明らかにし、次世代のイノベーション創出に向けた戦略的な議論をサポートします。

データ更新日：2025年12月14日
2018年から2025年までの出版物

主要な指標

データ更新日：2025年12月14日
2018年から2025年までの出版物

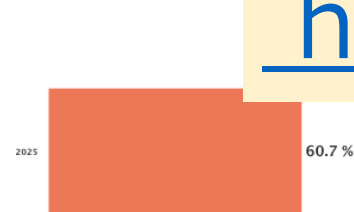
出版物

オープンアクセスとは、研究成果である出版物を、技術的・財政的な障壁なく、誰もがオンラインで利用できるようにすることです。本モニターでは、著者の1名以上が日本の研究機関に所属する出版物を対象としています。オープンアクセス率は、特定の範囲（年、分野、出版者など）におけるオープンアクセス出版物の割合を示します。研究成果がオープンアクセスとなることによって、学術コミュニティや一般社会へ広く普及し、新たな研究やイノベーションの創出につながることを期待されています。

Japan Open Science Monitorは、米OurResearchが提供するオープンデータカタログOpenAlexを主要なデータソースとしています。ただし、OpenAlexは日本の機関リポジトリの収録状況が十分ではないため、リポジトリ経由のオープンアクセス（特に国内リポジトリ分）の数値が実際よりも低く算出される傾向があります。より正確な指標を提供するため、今後、国立情報学研究所が提供する学術機関リポジトリデータベース（IRDB）とのデータ連携を進める予定です。

当サイトに掲載されているコンテンツは、ダウンロード可能なデータや図を含め、CC0により制限なく自由にご活用いただけます。

前年の出版物のオープンアクセス率



+U.Uポイント

<https://osm.nii.ac.jp/>

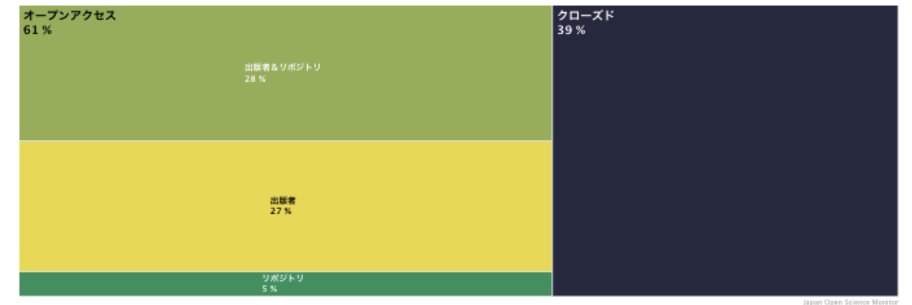
出版物 | Japan Open Science Monitor 試験版

全体 分野 出版者 リポジトリ

日本の出版物のオープンアクセス率は？

出版物のオープンアクセスを実現するルートはいくつか存在します。出版者のプラットフォームでのオープンアクセス出版、または著者による **リポジトリ** での公開が挙げられます。これらのルートは排他的ではなく、1件の出版物がリポジトリと出版者のプラットフォームの両方で公開されることもあります。

2024年の出版物のオープンアクセスルートの分布



コメント

このグラフは、2024年に出版された論文のオープンアクセスルートの内訳を示しています。論文のオープンアクセス状況は観測するたびに変わることがあります。例えば、当初は出版者でのみオープンアクセスだった論文が、後から機関リポジトリでも公開された場合、その分類は「出版者」から「出版者&リポジトリ」へと更新されます。このグラフでは、2024年の出版物では16%が「出版者&リポジトリ」で、8%が「リポジトリ」のみで、そして32%が「出版者」のみでオープンアクセスになっていることが読み取れます。

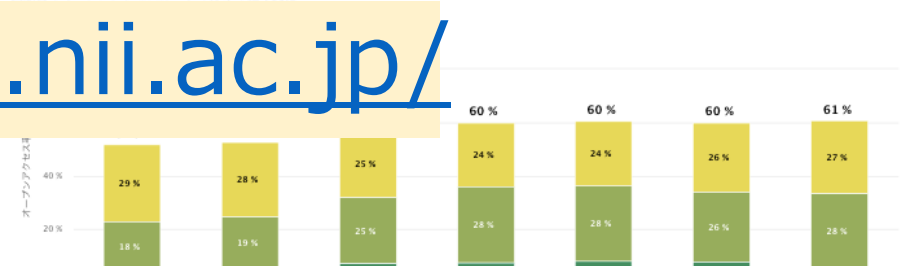
データ更新日 2025年12月14日

Sources OpenAlex

ダウンロード CSV PNG 埋め込みコード ポップアップ表示

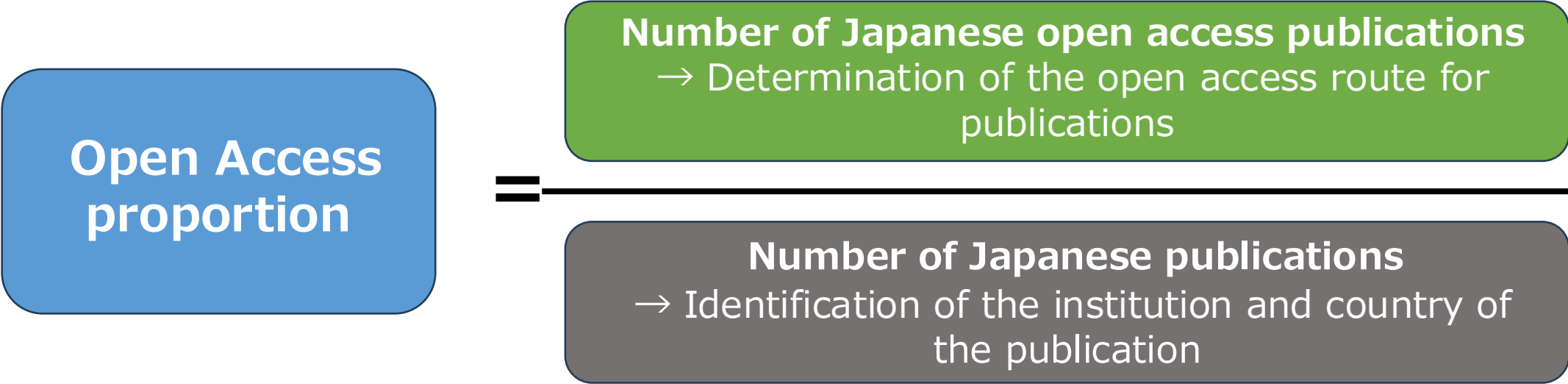
共有する X in f

出版物のオープンアクセスルートの分布の経年変化



OA measured by Japan Open Science Monitor

- The current beta version of the Japan Open Science Monitor provides metrics on open access in Japanese publications.
- Basically, the metrics are calculated using the following formula.



Identification of Japanese Publications

- The Japan Open Science Monitor identifies Japanese publications by referencing author affiliation information contained in OpenAlex metadata.
- OpenAlex assigns ROR identifiers to each institution as institutional identifiers.



How Does Author Affiliation Affect Preprint Citation Count? Analyzing Citation Bias at the Institution and Country Level

<p>Chifumi Nishioka National Institute of Informatics Tokyo, Japan cnishioka@nii.ac.jp</p>	<p>Michael Färber Karlsruhe Institute of Technology Karlsruhe, Germany michael.farber@kit.edu</p>	<p>Tarek Saier Karlsruhe Institute of Technology Karlsruhe, Germany tarek.saier@kit.edu</p>
--------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------

ABSTRACT
Citing is an important aspect of scientific discourse and important for quantifying the scientific impact quantification of researchers. Previous works observed that citations are made not only based on the pure scholarly contributions but also based on non-scholarly attributes, such as the affiliation or gender of authors. In this way, citation bias is produced. Existing works, however, have not analyzed preprints with respect to citation bias, although they play an increasingly important role in modern scholarly communication. In this paper, we investigate whether preprints are affected by citation bias with respect to the author affiliation. We measure citation bias for bioRxiv preprints and their publisher versions at the institution level and country level, using the Lorenz curve and Gini coefficient. This allows us to mitigate the effects of confounding factors and see whether or not citation biases related to author affiliation have an increased effect on preprint citations. We observe consistent higher Gini coefficients for preprints than those for publisher versions. Thus, we can confirm that citation bias exists and that it is more severe in case of preprints. As preprints are on the rise, affiliation-based citation bias is, thus, an important topic not only for authors (e.g., when deciding what to cite), but also to people and institutions that use citations for scientific impact quantification (e.g., funding agencies deciding about funding based on citation counts).

CCS CONCEPTS
• Information systems → Data mining; Digital libraries and archives.

1 INTRODUCTION
Citing is an important aspect of scientific discourse and important for quantifying the scientific impact quantification of researchers. Widely used importance metrics, such as the citation count and the h-index [15], are based on citations. They are sometimes used to judge the quality of research presented by an article [26]. However, several works have observed that publications are cited not only based on the pure scholarly contributions but also based on non-scholarly attributes such as gender, author affiliation, and funding. For instance, articles authored by women might be under-cited [4, 7, 35]. Such distortions concerning citations—also called “citation bias”—can distort the perception of available scholarly contributions among users of publications [17].

While citation bias has been studied in regular journal articles [1, 7, 35, 37], citation bias in preprints—completed scientific manuscripts that are uploaded by the authors to a public server without formal review [2]—has not been investigated. However, preprints play an increasingly important role in modern scholarly communication. Several preprint servers have emerged within the last decades [40], covering various disciplines: arXiv in physics, mathematics, and computer science, bioRxiv in biology, medRxiv in medicine, and SSRN in social science. Various works have observed benefits of preprints, such as early disclosure, wider dissemination [32] resulting in a higher number of citations [6, 10, 12], and creating opportunities for collaborations [20, 29, 32]. In the recent COVID-19 pandemic, preprints have received even greater scientific and public engagement [11].

In this paper, we investigate if preprints are affected by citation bias concerning the author affiliation. We focus on the author af-

```

"authorships": [
  {
    "author_position": "first",
    "author": {
      "id": "https://openalex.org/A5089069811",
      "display_name": "Chifumi Nishioka",
      "orcid": "https://orcid.org/0000-0002-1"
    },
    "institutions": [
      {
        "id": "https://openalex.org/I184597095",
        "display_name": "National Institute of Informatics",
        "ror": "https://ror.org/04ksd4g47",
        "country_code": "JP",
        "type": "facility",
        "lineage": [
          "https://openalex.org/I1319490839",
          "https://openalex.org/I184597095",
          "https://openalex.org/I4210158934"
        ]
      }
    ]
  }
],
"countries": ["jp"]

```

<https://ror.org/04ksd4g47>

National Institute of Informatics

ORGANIZATION TYPES	LOCATIONS
Facility, Funder	Tokyo (GeoNames ID)
	Japan
OTHER NAMES	WEBSITE
Labels	https://www.nii.ac.jp
国立情報学研究所 (ja)	
Aliases	OTHER IDENTIFIERS

Determining Open Access Status of Publications

- The Japan Open Science Monitor references the open access information contained in OpenAlex metadata.
- OpenAlex assigns open access information to each publication by referencing sources such as the DOAJ (Directory of Open Access Journals) and licenses (e.g., CC BY).
- In particular, when assigning information regarding open access in repositories, it references metadata harvested from each repository.

RESEARCH-ARTICLE | FREE ACCESS

How does author affiliation affect preprint citation count?: analyzing citation bias at the institution and country level

Authors: Chifumi Nishioka, Michael Färber, Tarek Saier

ICDL '22: Proceedings of the 22nd ACM/IEEE Joint Conference on Digital Libraries • Article No.: 28, Pages 1 - 8

<https://doi.org/10.1145/3529372.3530953>

Published: 20 June 2022

[Submitted on 4 May 2022]

How Does Author Affiliation Affect Preprint Citations at the Institution and Country Level?

Tarek Saier

KIT - Karlsruhe Institut für Technologie

Repository KITopen

How does author affiliation affect preprint citation count? Analyzing citation bias at the institution and country level

Nishioka, Chifumi; Färber, Michael; Saier, Tarek

Abstract: Citing is an important aspect of scientific discourse and important for quantifying the scientific impact quantification of researchers. Previous works observed that citations are made not only based on the pure scholarly contributions but also based on non-scholarly attributes, such as the affiliation or gender of authors. In this way, citation bias is produced. Existing works, however, have not analyzed the effects of citation bias on preprint citations. We investigate whether preprints are affected by citation bias with respect to the author affiliation. We measure citation bias for bioRxiv preprints and analyze the effects of citation bias at the institution level and country level, using the Lorenz curve and Gini coefficient. We also investigate the effects of confounding factors and see whether or not citation biases related to author affiliation have an increased effect on preprint citations. We observe consistent high preprint citation rates for preprints than those for publisher versions.

KITopen-Download

Voltext
DOI: 10.5445/IR/1000148639
Veröffentlicht am 17.10.2023

Externe Links

Originalveröffentlichung
DOI: 10.48550/arXiv.2205.02033

Exportieren als ...

Subjects: Digital Libraries (cs.DL)

Cite as: arXiv:2205.02033 [cs.DL] (or arXiv:2205.02033v1 [cs.DL] for this version)

Related DOI: <https://doi.org/10.48550/arXiv.2205.02033>

<https://doi.org/10.1145/3529372.3530953>

Copy of the preprint version

Preprint version

Conclusion

- OSM contributes to the further advancement of open science through appropriate strategic planning and effective incentive design
- The National Institute of Informatics has released a beta version of the Japan Open Science Monitor
 - Developed based on the pioneering French Open Science Monitor
 - Currently provides open access metrics for Japanese publications
- PIDs play a major role in calculating these metrics
 - Identification of Japanese publications ← ROR (Research Organization Identifier)
 - Determining open access in repositories ← Linking records via DOI
- Assigning PIDs is particularly important for Japanese-language papers
 - Institutional identifiers in Japanese are difficult to resolve (e.g., while “National Institute of Informatics” can be identified, “国立情報学研究所”

By making the most of PIDs, we aim to build a framework that ensures sustainability and diversity OSM framework