

Powering next-generation research assessment.

Why open infrastructures matter, and what you cannot afford to ignore.

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- WHAT HAS CHANGED

Open Science is now **the norm**, and the question in this room has shifted with it.

We used to ask “**which database, how do we clean it?**” Now we ask what infrastructure responsible assessment actually requires.

THEN

- Journal articles as the unit of research.
- Two commercial databases, internally trusted.
- A handful of indicators, largely agreed upon.
- Bibliometrics as a technical, standalone craft.

NOW

- Datasets, software, models, engagement, policy.
- **CoARA** commitments signed and owed.
- AI already writing against our scholarly record.
- **Bibliometrics stitched to everything else.**

- THE EUROPEAN POLICY CONTEXT

Three EU agendas **converging on the same place.**

01 · ASSESSMENT

CoARA

Coalition for Advancing Research Assessment. Broaden what counts. Reward quality and openness. Move beyond narrow metrics.

02 · INFRASTRUCTURE

EOSC

The European Open Science Cloud. Federated open infrastructure. Shared backbone for research data and services.

03 · SOVEREIGNTY

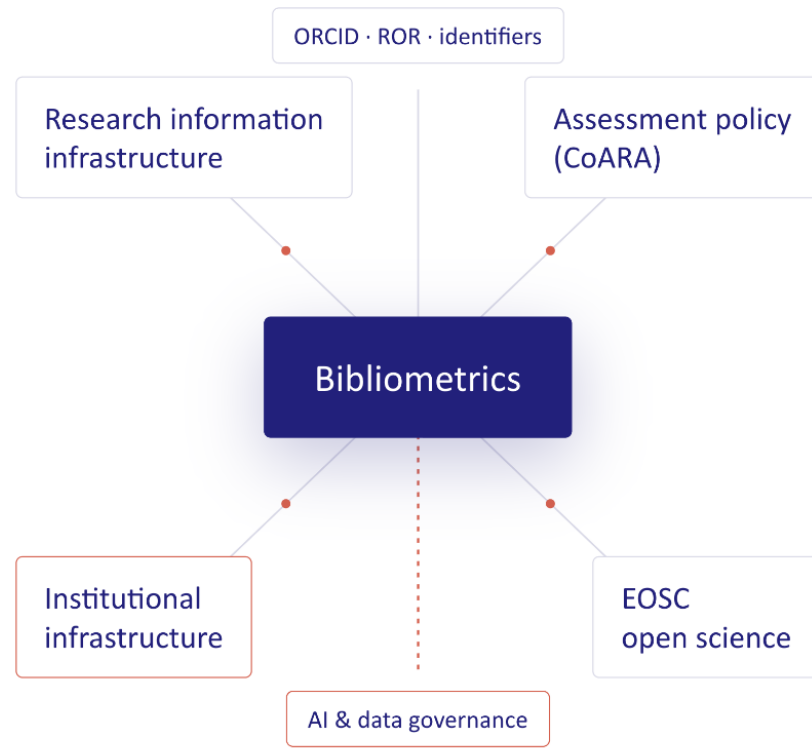
AI Act + data

Transparency and provenance for high-stakes decisions. European control of the data AI is trained on.

Not three separate agendas. **One agenda** decisions built on evidence we can audit.

- TAKEWAY 1. BIBLIOMETRICS IS STICED TO EVERYTHING AROUND IT

Bibliometrics is no longer a standalone effort.



Reform one without the others, **you move the bias**. You don't solve it.

- Assessment reform without reforming the **data we assess on** just relocates the problem.
- Open infrastructure without an **assessment policy** to use it is a library nobody reads.
- AI without **trusted inputs** industrialises whatever bias our data already carries.

ACT II

The OI4RRA framework.

A CoARA working group output. What open infrastructures must *actually* do to support responsible research assessment.

• THE COARA OI4RRA WORKING GROUP

Two years. Eighty experts. One question.

80

experts

50

organisations

24

months mandate

THE QUESTION

What must an open infrastructure actually do to support **responsible research assessment**?

OUTPUTS

- Open Infrastructures for Responsible Research Assessment: Principles, Framework.
- Conceptual Architecture for the Implementation of a Responsible Research Assessment Framework Built on Open Infrastructures
- Checklists for RPOs and RFOs

- WHAT WE MEAN WHEN WE SAY OPEN

“Open” is not a price tag. It is a **governance commitment**.

IT IS NOT

- Free of charge
- Amateur or unmaintained.
- An alternative when commercial is too expensive.

IT IS

- Shared digital infrastructure, built on **FAIR** and **CARE**.
- Community-governed, not-for-profit.
- Socio-technical, global in reach, local in context.
- Designed to serve the public interest, not extract from it.

CONCRETE EXAMPLES

FAIR-compliant
repositories

PID Systems

Open Scholarly
Communication Graphs

Interoperable
bibliometric systems

Collaborative research
environments

Metadata enrichment
services

- PRINCIPLES SYNTHESISES ACROSS EIGHT FRAMEWORKS

Eleven principles every open infrastructure must honour.

Think of them as the rights and guarantees we owe researchers, institutions and the public, synthesised across POSI · FOREST · TRUST · CARE · Barcelona Declaration · UNESCO · ROSiE · EOSC SRIA.

Community
governance

Transparency

Openness

Sustainability

Inclusion

FAIR data

Equity

Responsibility

Diversity

Innovation

Adaptability

Passing on two of
these is not enough.

• THE FOUR PILLARS

From principles to an **operating spec.**

01 · PILLAR

Technical Robustness

The **engineering**.
Integrity, traceability,
interoperability,
resilience,
and **explainable AI**.

02 · PILLAR

Operational Capacity

The **day-to-day**. Verifiable
workflows, inclusive
coverage, context-
awareness, efficiency,
capacity-building.

03 · PILLAR

Community- Centred

The **governance**.
Participatory, with
stakeholder involvement,
equity, and sustainable
funding models.

04 · PILLAR

Ethical & Inclusive

The **values**. Fair and
transparent assessment,
secure data, ethical AI
oversight, responsible
neutrality.

- TECHNICAL ROBUSTNESS · WHERE THE AI STORY LIVES

If AI writes against your data, your data must be **trustworthy end to end**

Data integrity. Accurate, consistent, globally representative.

Traceability & reproducibility. Every number is replayable. Data lineage & audit trails.

Interoperability. Open standards, persistent identifiers, documented APIs.

Resilience & scalability. Built to stay up when it matters most.

Explainable, auditable AI. Open algorithms. Understandable rationales.

THE POSITION

Not “no AI”. Not “any AI”.

Open, explainable, auditable AI.

A black-box metric was bad. A black-box model trained on proprietary data is worse, it industrialises the bias silently.

Trusted data is now the precondition for responsible AI in assessment.

• OPERATIONAL · COMMUNITY · ETHICAL

The three other pillars.

02 · OPERATIONAL CAPACITY

The day-to-day.

- ✓ Open & verifiable workflows
- ✓ Inclusive coverage of outputs
- ✓ Context-aware assessment
Operational efficiency
- ✓ Capacity building & support

03 · COMMUNITY-CENTERED

The governance.

- ✓ Participatory governance
- ✓ Active stakeholder involvement
- ✓ Equity, accessibility,
representation
- ✓ Resilient sustainability

04 · ETHICAL & INCLUSIVE

The values.

- ✓ Fair, transparent assessment
- ✓ Secure & ethical data
management
- ✓ Ethical oversight of AI use
- ✓ Ethical neutrality & fair
responsibility

Not a wish list. The operating spec for an infrastructure you want to stake decisions on.

- A PRACTICAL LIST FOR RPOs & RFOs

From framework to a checklist you can hand to a vendor.

SAMPLE ITEMS

- ☒ Does it let you audit its workflow end-to-end?
- ☒ Does it use open persistent identifiers (ORCID, ROR, DOI)?
- ☒ Does it publish its governance model?
- ☒ Does it cover the outputs your researchers actually produce?
- ☒ Is its AI layer open, explainable, and independently reviewable?
- ☒ Does it reduce, not increase, researcher burden?

HOW TO USE IT

- Hand it to a **vendor** before you begin.
- Hand it to your **own infrastructure team** for a self-audit.
- Hand it to the **national policy unit** defining the next tender.

If the answer is no, you now have a problem **you can name**.

ACT III

From principles to a running service

ABACUS · A national research monitoring service for Greece, built on open European foundations.



- ABACUS · THE SHORT VERSION

A national research monitoring service, built on the OpenAIRE Graph.

WHO

OpenAIRE × HEAL-Link

Technical backbone · national convener · institutions as data stewards.

WHAT

Not a bibliometrics tool.

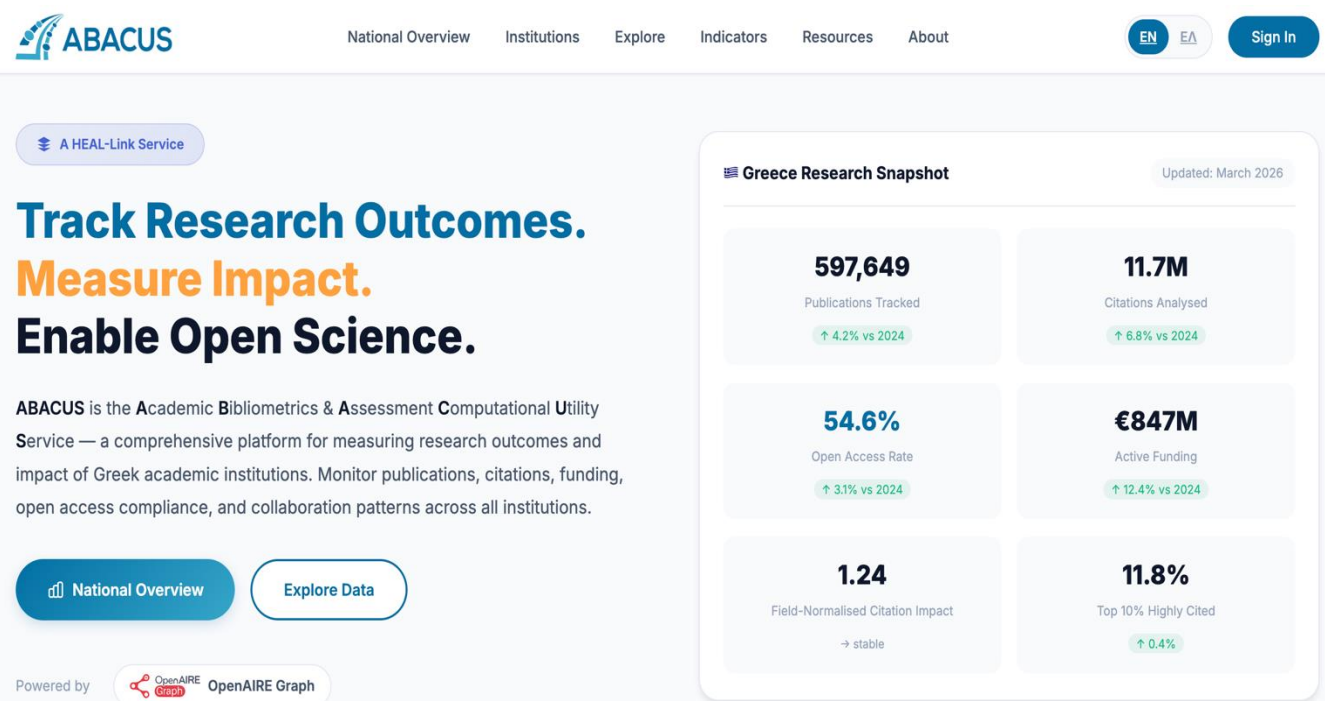
A national R&I intelligence platform, output, openness, impact, collaboration, funding, relevance.

WHEN

2025 – 2026

Pilot deployment May 2026 · production service Nov 2026.

What does OI4RRA look like when it stops being a PDF and starts being a running national service.



- TAKEAWAY 2 · BUILT HAND-IN-HAND WITH THE INFRASTRUCTURES THAT ALREADY EXIST

ABACUS does not replace the national stack. It stitches it together.

01 · IDENTITY

OpenOrgs as an overlay on ROR.

Dedup organisations *and departments*, the level most Greek researchers actually affiliate with. Enriches ROR where ROR stops.

- ROR

- ORCID

02 · SOURCES

Institutional repositories, CRIS.

Metadata harvested from every Greek university repository and CRIS.

- OpenAIRE Guidelines

- PROVIDE

03 · EMBEDDING

Plugged into the national fabric.

HARDMIN (research data) and ARGOS (data management plans) integrated natively. ABACUS reads what they already hold, no duplicated effort.

- HARDMIN

- ARGOS

04 · DIAMOND OA

Greek Diamond OA journals in scope.

SSH and domain journals published in Greek, no APC, community-run. Included, indexed, counted. Multilinguality is not a footnote.

- SSH coverage

- Multilingual

- Theses

05 · COVERAGE

Cross validated with Scopus, WoS, OpenAlex.

We triangulate so nothing is missed, and we can show every institution where the gaps are, before they are asked to explain them.

06 · CONSENSUS

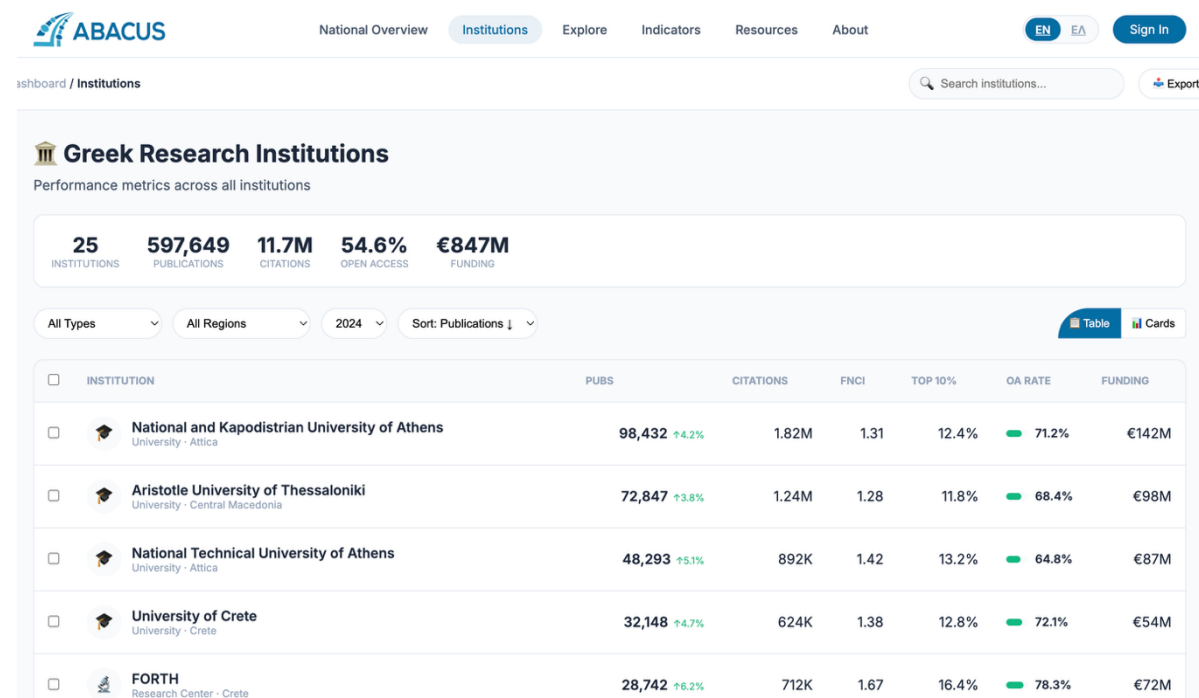
Indicators negotiated, not imposed.

A standing working group with all institutions agrees what each indicator means, how it is computed, and how it is used. Consensus before dashboards.

- WHAT THE SERVICE LOOKS LIKE

One national view. Every institution side by side.

25 Greek institutions. 80 indicators.
Same methodology.



The screenshot shows the ABACUS dashboard for Greek Research Institutions. It displays a summary of performance metrics across all institutions, including 25 institutions, 597,649 publications, 11.7M citations, 54.6% open access, and €847M funding. Below the summary, there are filters for All Types, All Regions, 2024, and Sort: Publications. A table lists the top institutions with their respective metrics.

INSTITUTION	PUBS	CITATIONS	FNCI	TOP 10%	OA RATE	FUNDING
<input type="checkbox"/> National and Kapodistrian University of Athens University · Attica	98,432 ↑4.2%	1.82M	1.31	12.4%	71.2%	€142M
<input type="checkbox"/> Aristotle University of Thessaloniki University · Central Macedonia	72,847 ↑3.8%	1.24M	1.28	11.8%	68.4%	€98M
<input type="checkbox"/> National Technical University of Athens University · Attica	48,293 ↑5.1%	892K	1.42	13.2%	64.8%	€87M
<input type="checkbox"/> University of Crete University · Crete	32,148 ↑4.7%	624K	1.38	12.8%	72.1%	€54M
<input type="checkbox"/> FORTH Research Center · Crete	28,742 ↑6.2%	712K	1.67	16.4%	78.3%	€72M

Publications, citations, field-normalised impact, top 10% highly cited, open-access rate, funding. Cross-institutional comparability without anyone grading anyone else.

- Every cell is **drillable** to the underlying outputs.
- Every number **traces back** to the OpenAIRE Graph.
- Nothing computed privately, **nothing locked in**.

- WHAT ABACUS DELIVERS

Indicators across the full research cycle. Auditable by design.

7 AREAS · 80 INDICATORS CATALOGUED · COARA ALIGNED

01 Scale Research output · volume, types, data, software, sources	02 Openness Open Access · FAIR · licences · APCs · infrastructure
03 Impact Citations · BIP! scores · venue quality · downloads	04 Collaboration International · national · industry · project-based
05 Funding EU projects · HFRI · ERC · national · compliance	06 Relevance Fields of Science · SDGs · HE Missions · societal impact
07 People — human capital Researcher mobility · career development · talent attraction · ORCID adoption	



INDICATOR AREAS

7 Areas · 80 Indicators

WHAT MAKES THEM DIFFERENT

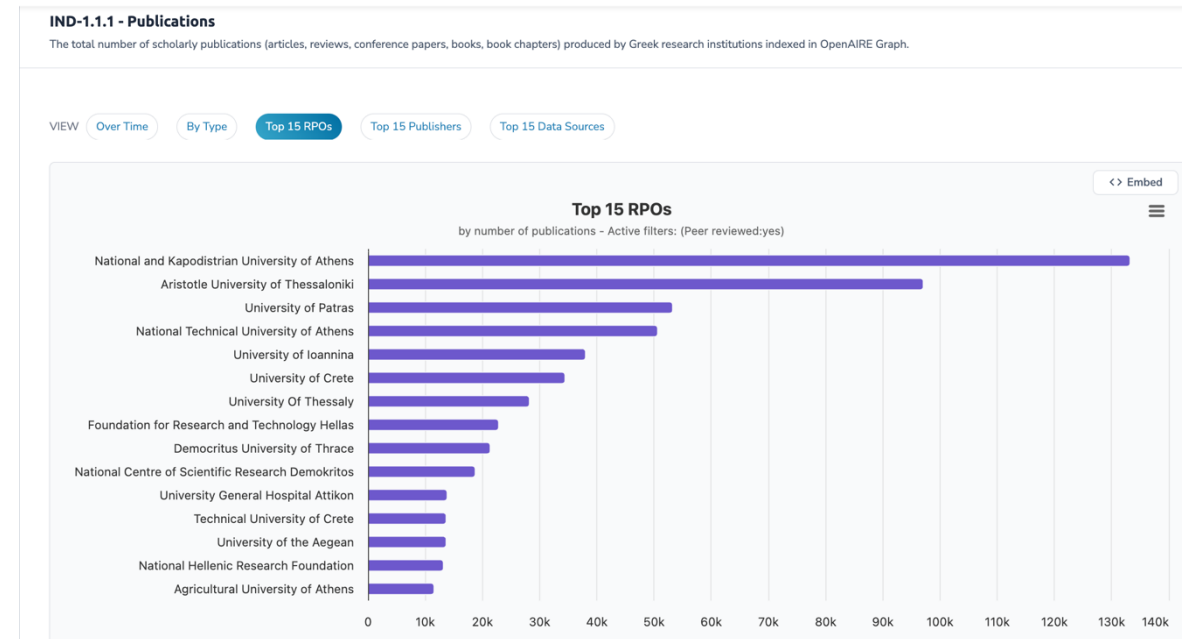
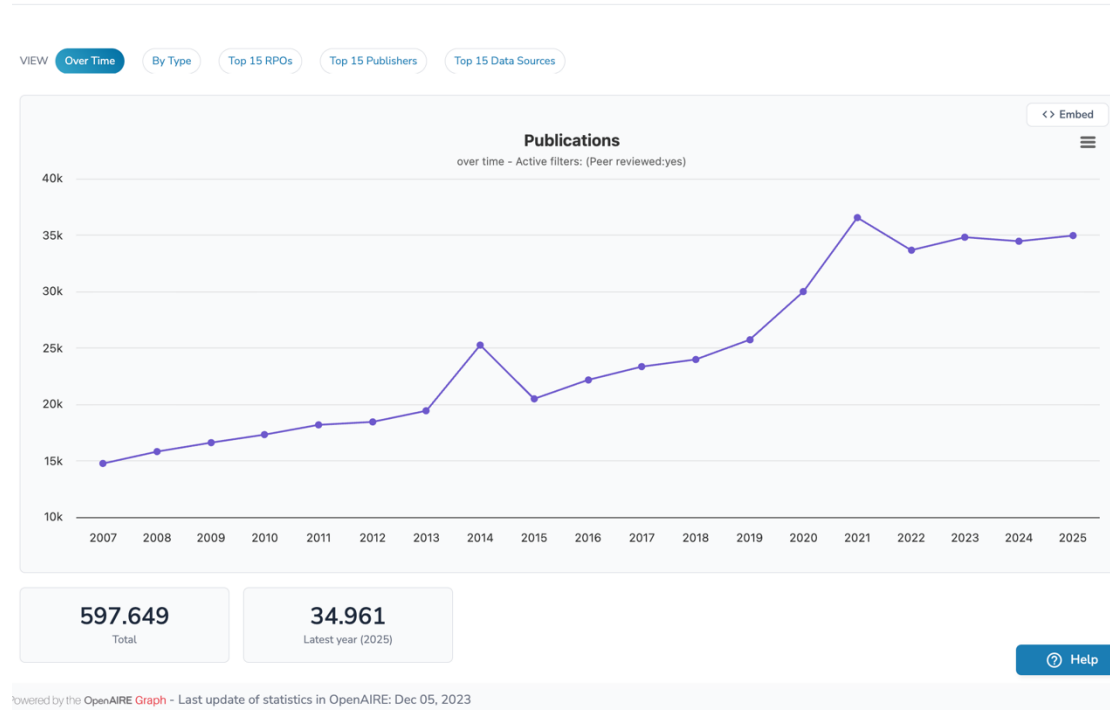
- Every indicator ships with its **source data**.
- Every indicator ships with its **methodology**.
- Every indicator is **reproducible** from the OpenAIRE Graph, with history tracking.
- Data flows out through **open APIs**.

Area 1: Research Output 4 subareas · 48 indicators	▶
1.1 Publication Volume 1.2 Output Types 1.3 Research Infra 1.4 Software & Code	▶
Area 2: Research Impact 3 subareas · 14 indicators	▶
Area 3: Open Science 5 subareas · 22 indicators	▶
Area 4: Collaboration 3 subareas · 12 indicators	▶
Area 5: Funding 4 subareas · 16 indicators	▶
Area 6: Societal Impact 3 subareas · 10 indicators	▶
Area 7: Human Capital 2 subareas · 8 indicators	▶

- IND-1.1.1 · PUBLICATIONS · WHAT A NATIONAL OUTPUT VIEW LOOKS LIKE

Research output, **visible at every scale.**

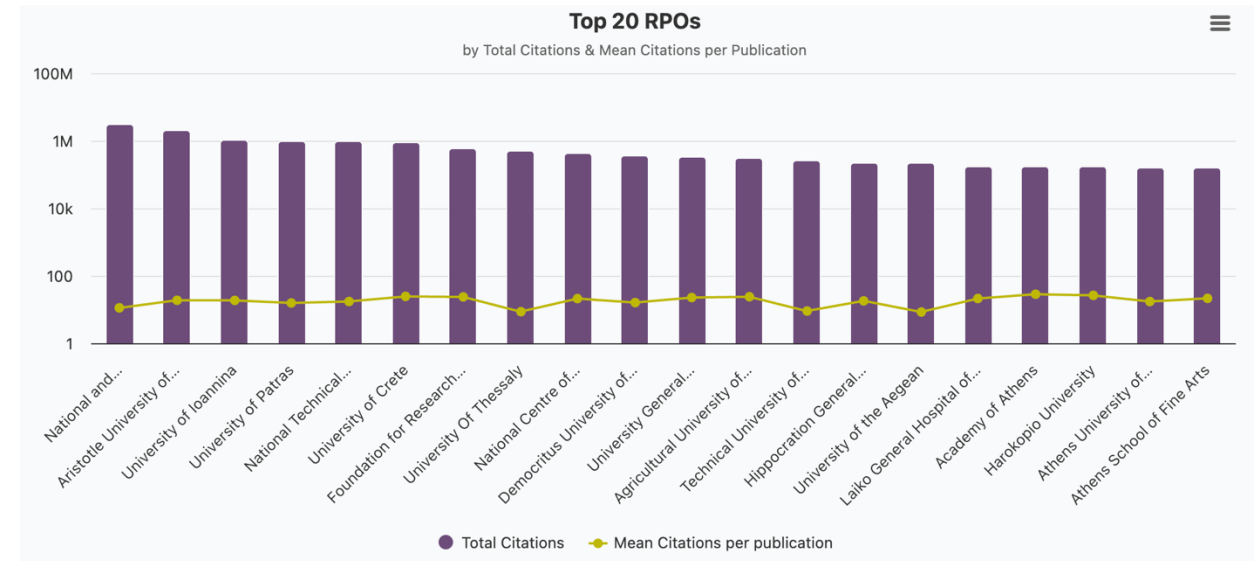
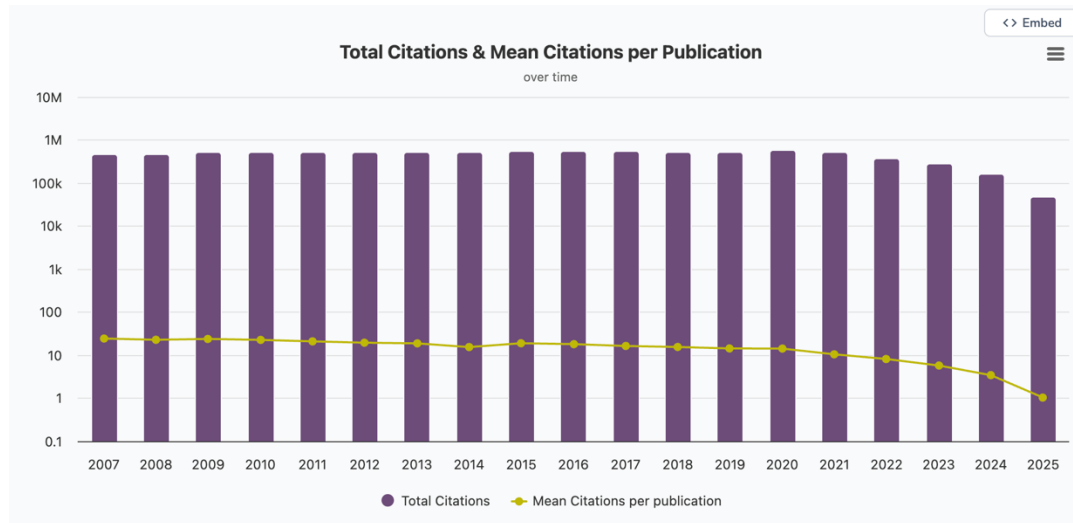
Same underlying graph. Time series, institutional ranking, publisher mix, one click apart.



- IND-1.1.1 · CITATIONS · IMPACT IN PRACTICE

Research impact, double checked, trustworthy.

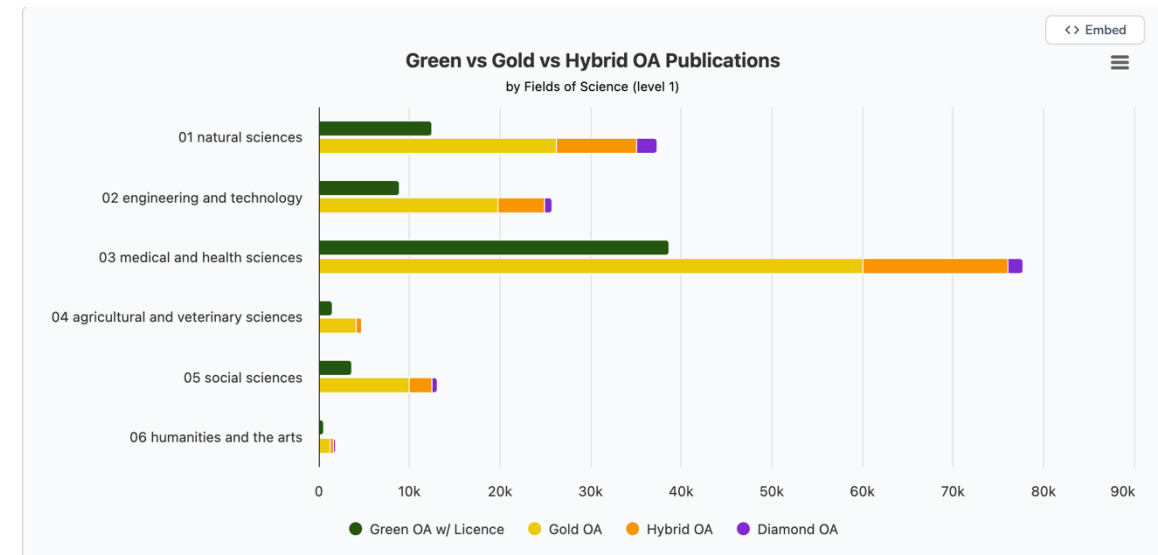
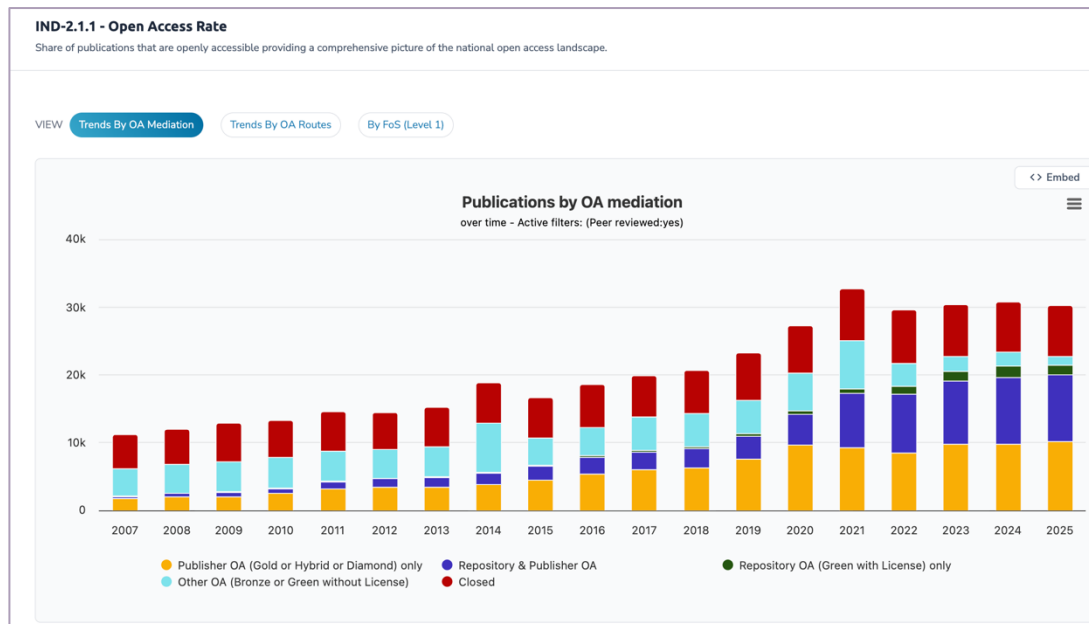
Combined with other data (e.g., Eurostat, patents) → invaluable insights.



- IND-2.1.1 · OPEN ACCESS RATE · WHERE A COUNTRY REALLY STANDS

Open Access, **by route and by discipline.**

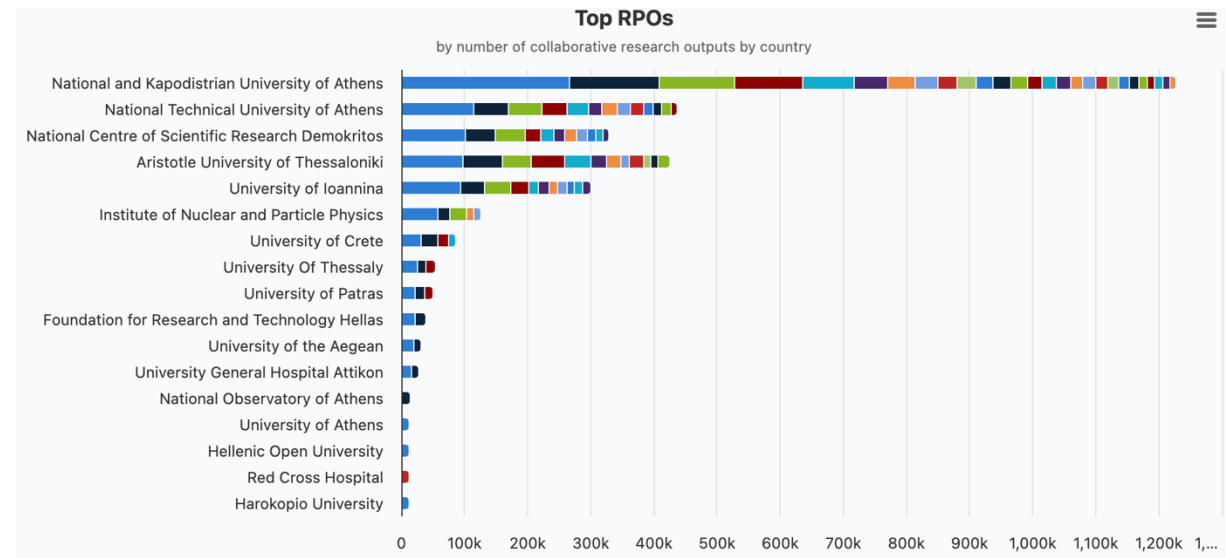
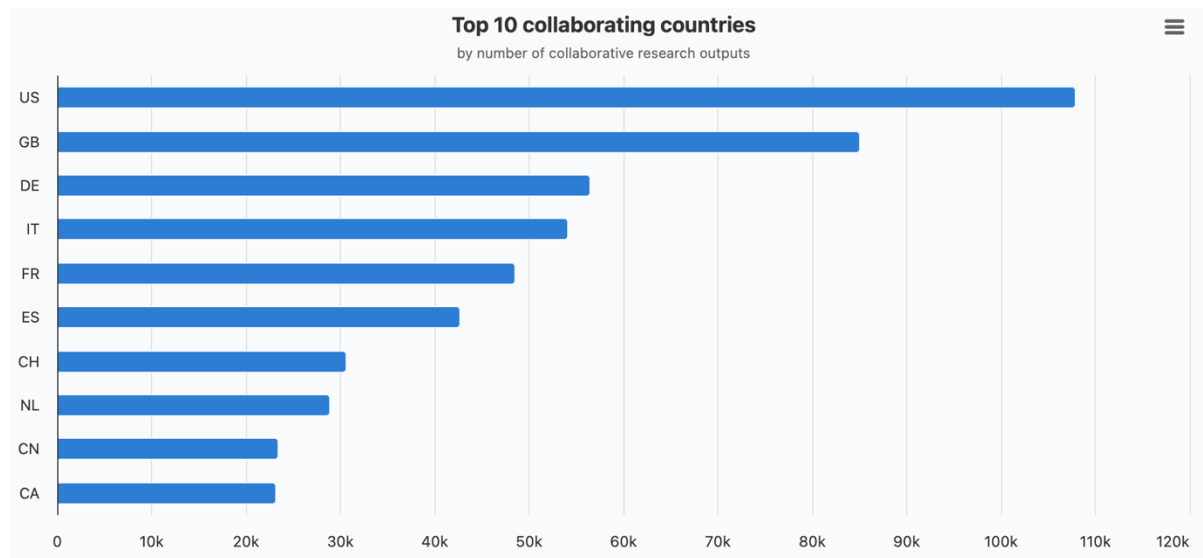
Not a single OA percentage. The full mediation mix, over time and across fields of science.



- IND-4.1.1 · CROSS-COUNTRY COLLABORATION · WHO GREEK RESEARCH WORKS WITH

Collaboration, country by country, institution by institution.

International, public/private synergy is now evidence, not anecdote. Co-funded, co-authored.



- FROM RESEARCH MONITORING TO R&I INTELLIGENCE

ABACUS is a **foundation**. The roadmap is **much bigger**.

ABACUS CORE

National research data layer

EXTENDS INTO

- **Research → innovation**

Patents. Standards.
Companies. Clinical trials.

- **Academia ↔ industry**

Co-publications. Co-
patents.

- **Startups & spinouts**

Registries. Funding
rounds. TTOs.

- **Technology mapping**

Depth. Gaps. Capability.

- **Talent & mobility**

Careers. Return-of-talent
signals.

- **Regional dashboards**

Smart specialisation.
Structural funds.

- **Societal impact**

Policy. Media. Clinical
guidelines.

- **International
comparability**

EOSC-native. Global graph.

• TAKEAWAY 3 · AI CHANGES BIBLIOMETRICS · DATA MUST BE TRUSTED

AI in bibliometrics is already here.
The question is what it is **trained on**.

ALREADY IN THE PIPELINE

- Field classification & disambiguation.
- Author & organisation matching.
- SDG classification.
- Narrative CV summarisation.
- Technology, TRL extraction.
- Even **generation of evaluation text**.

THE STRUCTURAL CHOICE

Proprietary, opaque inputs
→ silent bias at scale.

Open graph with provenance
→ **defensible** assessments.

• THREE THINGS TO TAKE HOME

If you remember three things.

01

Bibliometrics is no longer standalone.

It is stitched to assessment policy, research information infrastructure, open science, and AI governance. Reform one without the others and you move the problem.

02

Institutional infrastructure is where it lives or dies.

National and European services need institutions in the room from day one. Repositories, CRIS, identifiers, that's the ground floor.

03

AI changes the work. Trusted data is the precondition.

Explainable, auditable, community-governed. Or in five years you'll be auditing your own assessments wondering where the bias came from.

Thank you.

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