Progress Toward Gender Equality in Research & Innovation

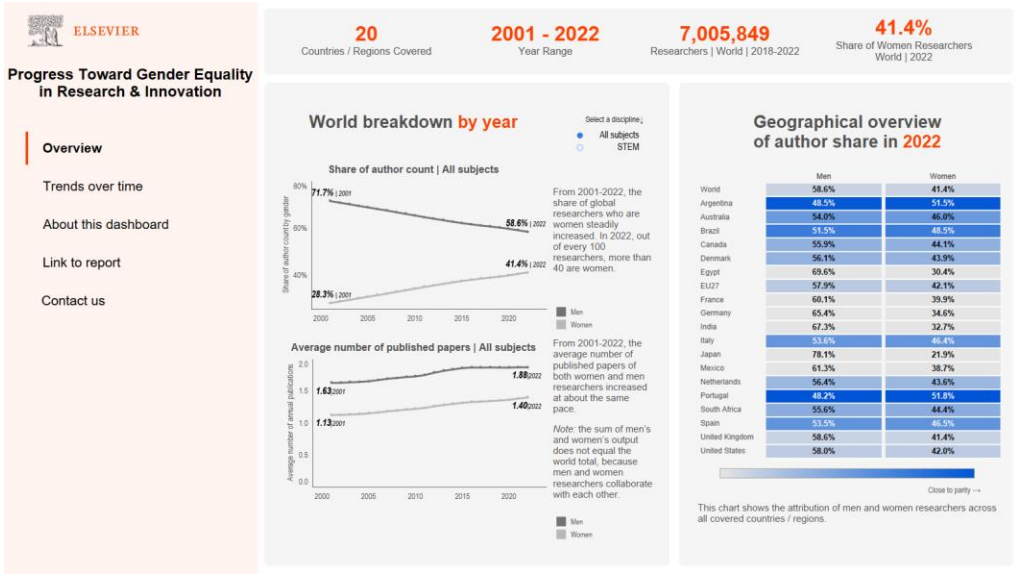
Dashboard guidance

Link to the dashboard:
https://public.tableau.com/app/profile/ads.elsevier/viz/Progress_Toward_Gender_Equality_In_Research_And_Innovation/Overview

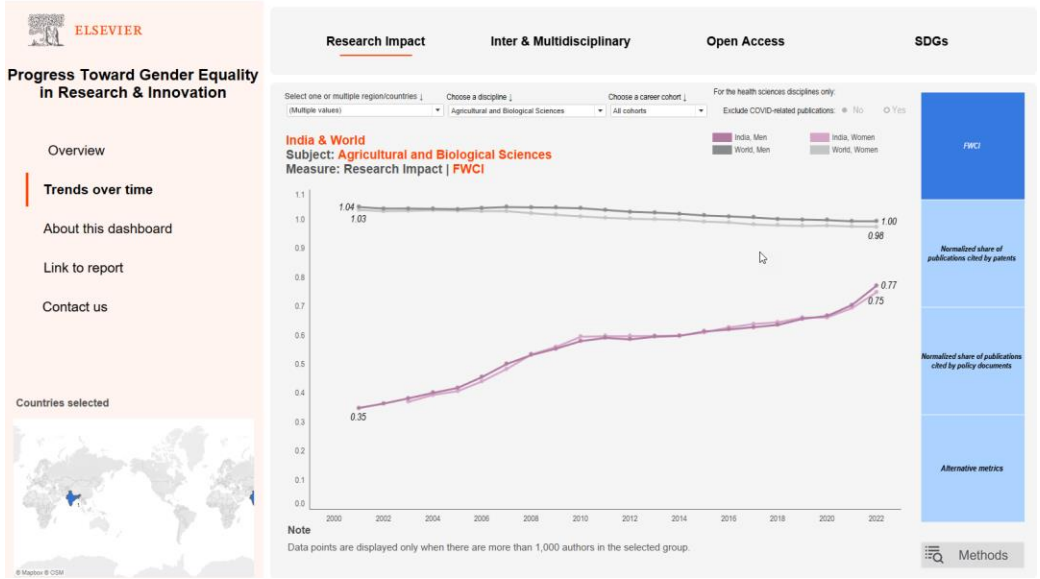
About the dashboard

- This dashboard tracks progress toward gender parity in scientific research worldwide and provides insights on how gender affects the researcher journey.
- Drawing on robust datasets from 18 countries and the EU-27 and World, this dashboard presents the latest status on gender-based representation by country, seniority cohorts and subject areas.

the dashboard is structured by two major views



Overview homepage: provides overview information



Trends over time tabs: Provides analytical view over time

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Note:
Parity is 40-60%
Full parity = 50%

20
Countries / Regions Covered

Click to view All disciplines or STEM only; for both *share of author count* and *Average number of published papers*

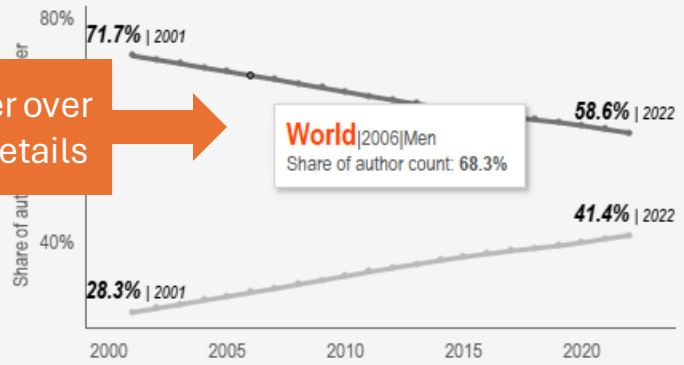
7,005,849
rchers | World | 2018-2022

41.4%
Share of Women Researchers
World | 2022

World breakdown by year

Select a discipline
- All subjects
- STEM

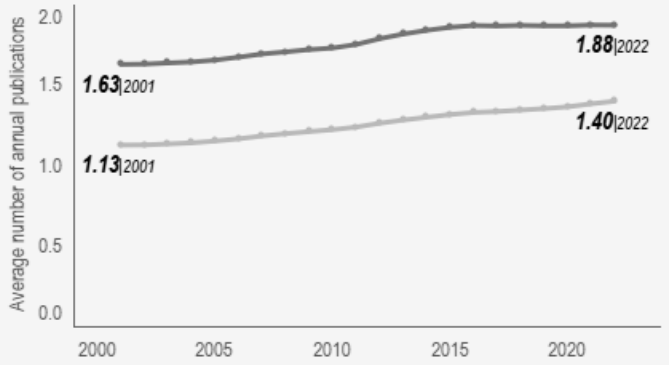
Share of author count | All subjects



Hover over for details

From 2001-2022, the share of global researchers who are women steadily increased. In 2022, out of every 100 researchers, more than 40 are women.

Average number of published papers | All subjects



From 2001-2022, the average number of published papers of both women and men researchers increased at about the same pace.

Note: the sum of men's and women's output does not equal the world total, because men and women researchers collaborate with each other.

Geographical overview of author share in 2022

	Men	Women
World	58.6%	41.4%
Argentina	48.5%	51.5%
Australia	54.0%	46.0%
Brazil	51.5%	48.5%
Canada	55.9%	44.1%
Denmark	56.1%	43.9%
Egypt	69.6%	30.4%
EU27	57.9%	42.1%
France	60.1%	39.9%
Germany	65.4%	34.6%
India	67.3%	32.7%
Italy	53.6%	46.4%
Japan	78.1%	21.9%
Mexico	61.3%	38.7%
Netherlands	56.4%	43.6%
Portugal	48.2%	51.8%
South Africa	55.6%	44.4%
Spain	53.5%	46.5%
United Kingdom	58.6%	41.4%
United States	58.0%	42.0%

Close to parity →

This cha
all cover

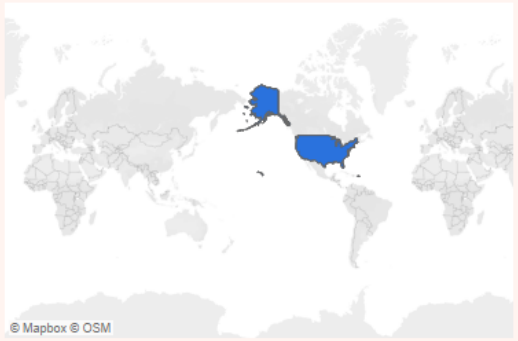
Static representation data per analyzed country/ region.

1.Click tab to view indicators for each category

Progre uality
in Research & Innovation

- Overview
- **Trends over time**
- About this dashboard
- Link to report
- Contact us

Countries selected



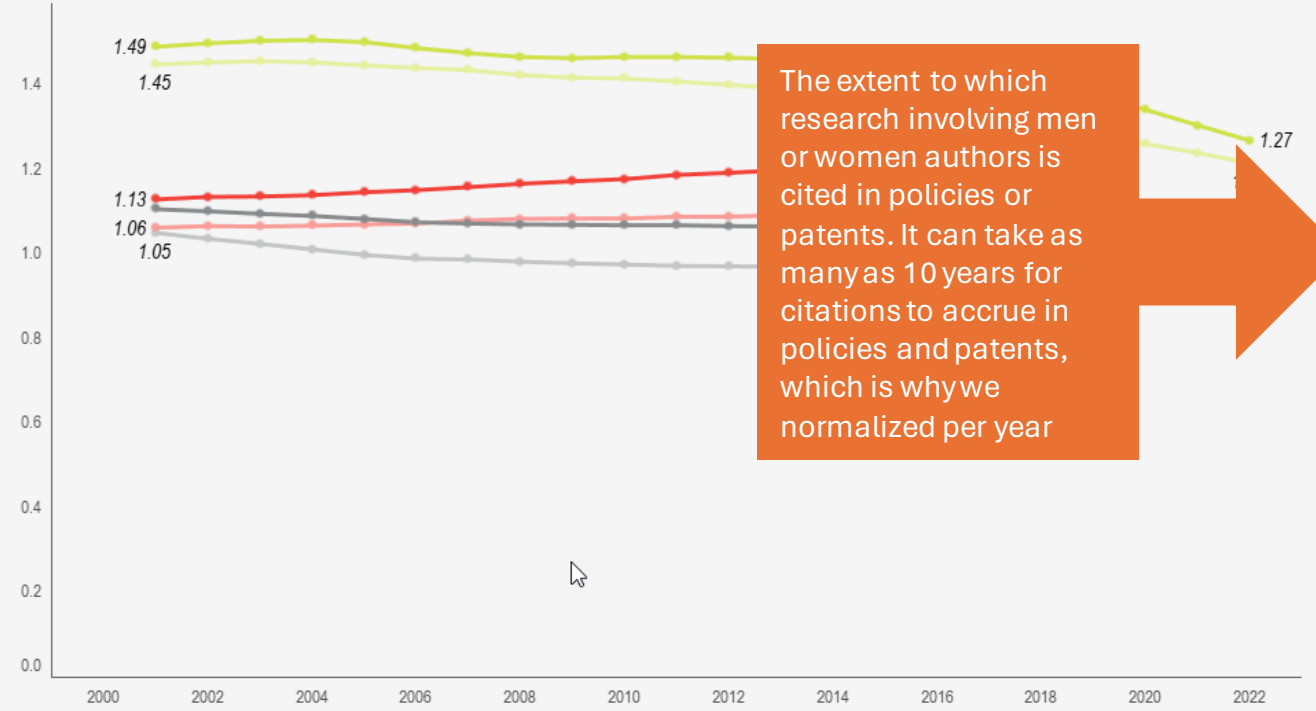
Research Impact | **Inter & Multidisciplinary** | **Open Access** | **SDGs**

Choose a discipline ↓ All subject areas

Choose a career cohort ↓ All cohorts

For the health sciences disciplines only:
Exclude COVID-related publications: No Yes

EU27, United States, World
Subject: All subject areas
Measure: Research Impact | FWCI



The extent to which research involving men or women authors is cited in policies or patents. It can take as many as 10 years for citations to accrue in policies and patents, which is why we normalized per year

Note

Data points are displayed only when there are more than 1,000 authors in the selected group.

FWCI

Normalized share of publications cited by patents

Normalized share of publications cited by policy documents

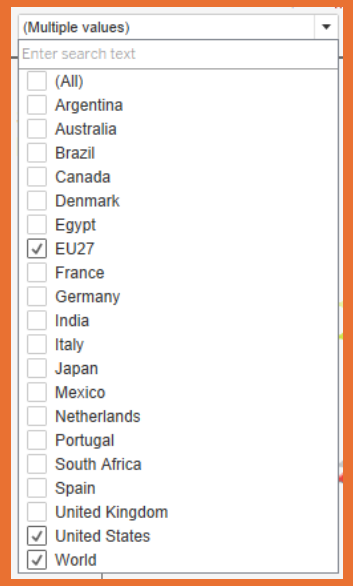
Alternative metrics

Methods

2. Explore trends for each indicator

3. More about the indicator definitions and underlying methodology

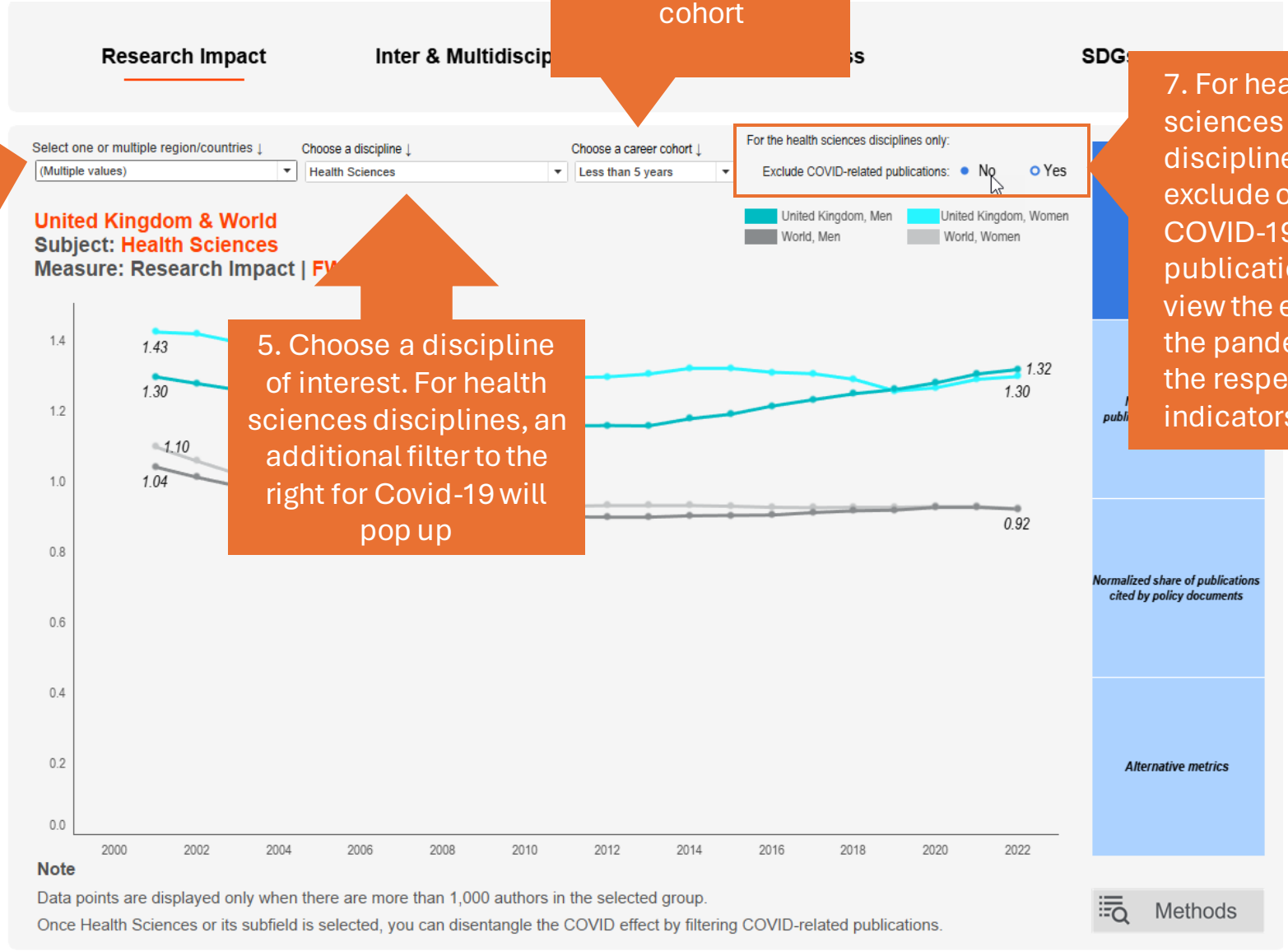
4. Filter for 1 or more analyzed regions/countries



6. Filter for a career cohort

5. Choose a discipline of interest. For health sciences disciplines, an additional filter to the right for Covid-19 will pop up

7. For health sciences disciplines only; exclude or include COVID-19 related publications to view the effect of the pandemic on the respective indicators.



The definition of Health Science and it's subdisciplines

We defined health science disciplines by grouping the appropriate subcategories based on the frequency that publications were categorized in overlapping subcategories. For example, we created the subdiscipline "Fertility & Birth" because a high percentage of publications in the subcategory "Obstetrics and Gynecology" were also classified in the subcategory "Reproductive Medicine." The final selection of research subcategories in medicine is shown here.

Health Science Discipline Name	Subcategories Included
Cancer	Cancer Research Oncology
Cardiology & Pulmonology	Cardiology and Cardiovascular Medicine Pulmonary and Respiratory Medicine
Diabetes & Endocrinology	Endocrinology Endocrinology, Diabetes and Metabolism
Emergency Medicine	Critical Care and Intensive Care Medicine Emergency Medicine
Fertility & Birth	Obstetrics and Gynecology Reproductive Medicine
General Clinical Medicine	General Medicine Family Practice Internal Medicine
Infectious Diseases & Allergy	Immunology and Allergy Infectious Diseases Microbiology (medical)
Pediatrics	Pediatrics, Perinatology and Child Health
Public Health	Epidemiology Health Policy Public Health, Environmental and Occupational Health
Radiology & Imaging	Radiology, Nuclear Medicine and Imaging
Surgery	Surgery

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Countries selected

Note: the Alternative metrics page is static because there are less citations in alternative media. Adding filters would make the results less robust

Alternative citations from Wikipedia, news and blogs (normalized data)

men receive more mentions on Wikipedia

women receive more mentions in news and blogs

Men, across all career stages, tend to receive more mentions than women on Wikipedia. Given known gender biases in both contributions and content on Wikipedia (women account for only approximately 10% of all Wikipedia authors, and women require more notoriety to have an individual Wikipedia page), these results are not necessarily surprising either, but no less important.

FWCI

Normalized share of publications cited by patents

Normalized share of publications cited by policy documents

Alternative metrics

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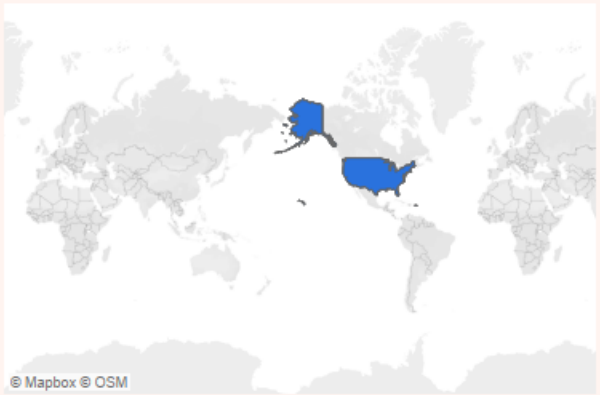
Countries selected



Select one or multiple region/countries ↓: (Multiple values)

Choose a discipline ↓: All subject areas

Choose a career cohort ↓: All cohorts

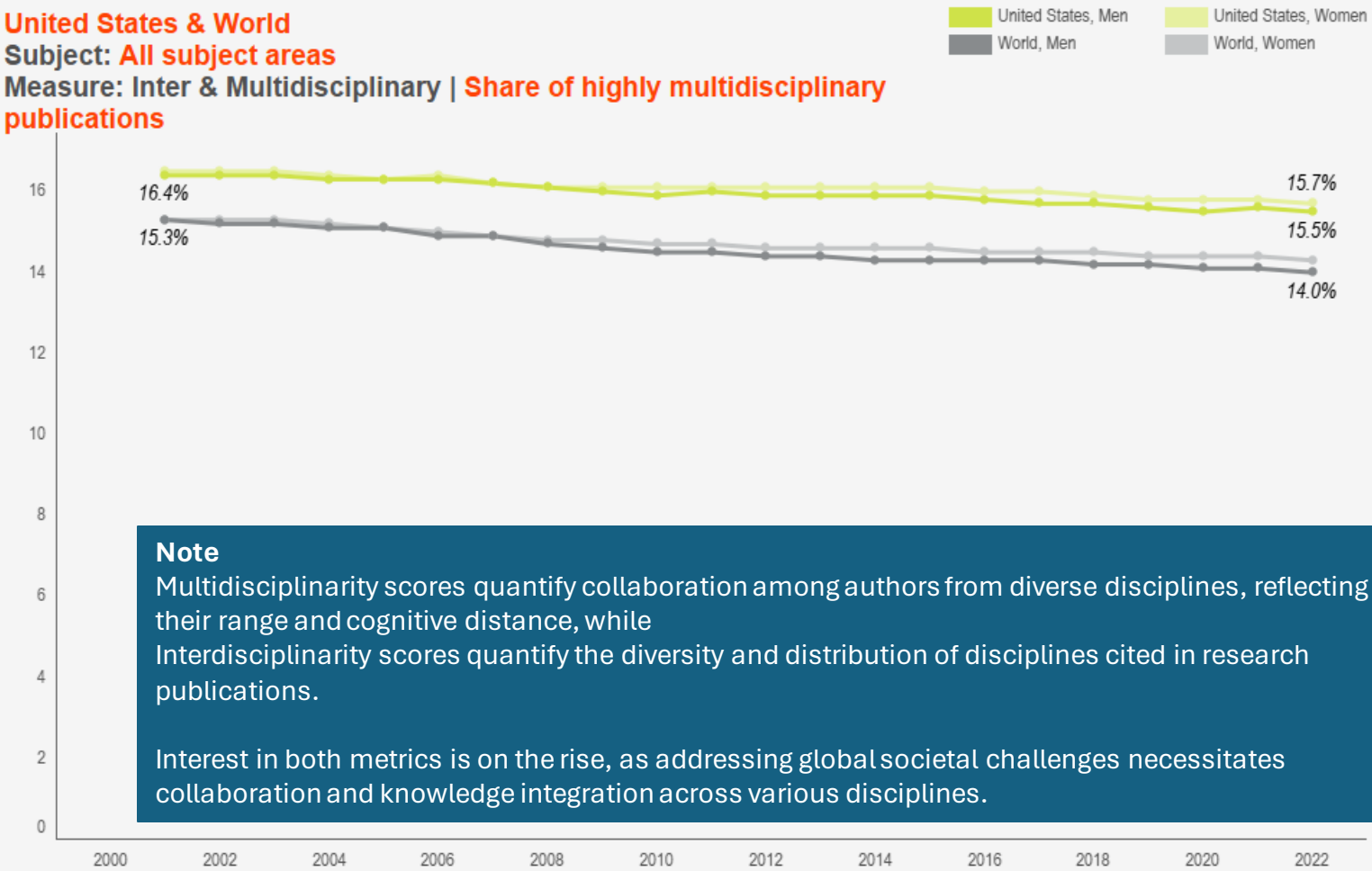
For the health sciences disciplines only:

Exclude COVID-related publications: ● No ○ Yes

United States & World

Subject: All subject areas

Measure: Inter & Multidisciplinary | Share of highly multidisciplinary publications



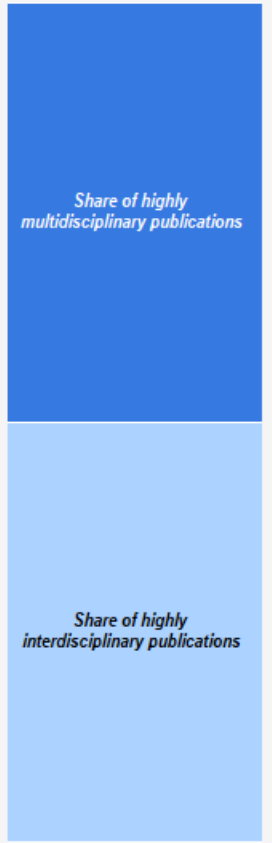
Note

Multidisciplinarity scores quantify collaboration among authors from diverse disciplines, reflecting their range and cognitive distance, while
Interdisciplinarity scores quantify the diversity and distribution of disciplines cited in research publications.

Interest in both metrics is on the rise, as addressing global societal challenges necessitates collaboration and knowledge integration across various disciplines.

Note

Data points are displayed only when there are more than 1,000 authors in the selected group.



Methods

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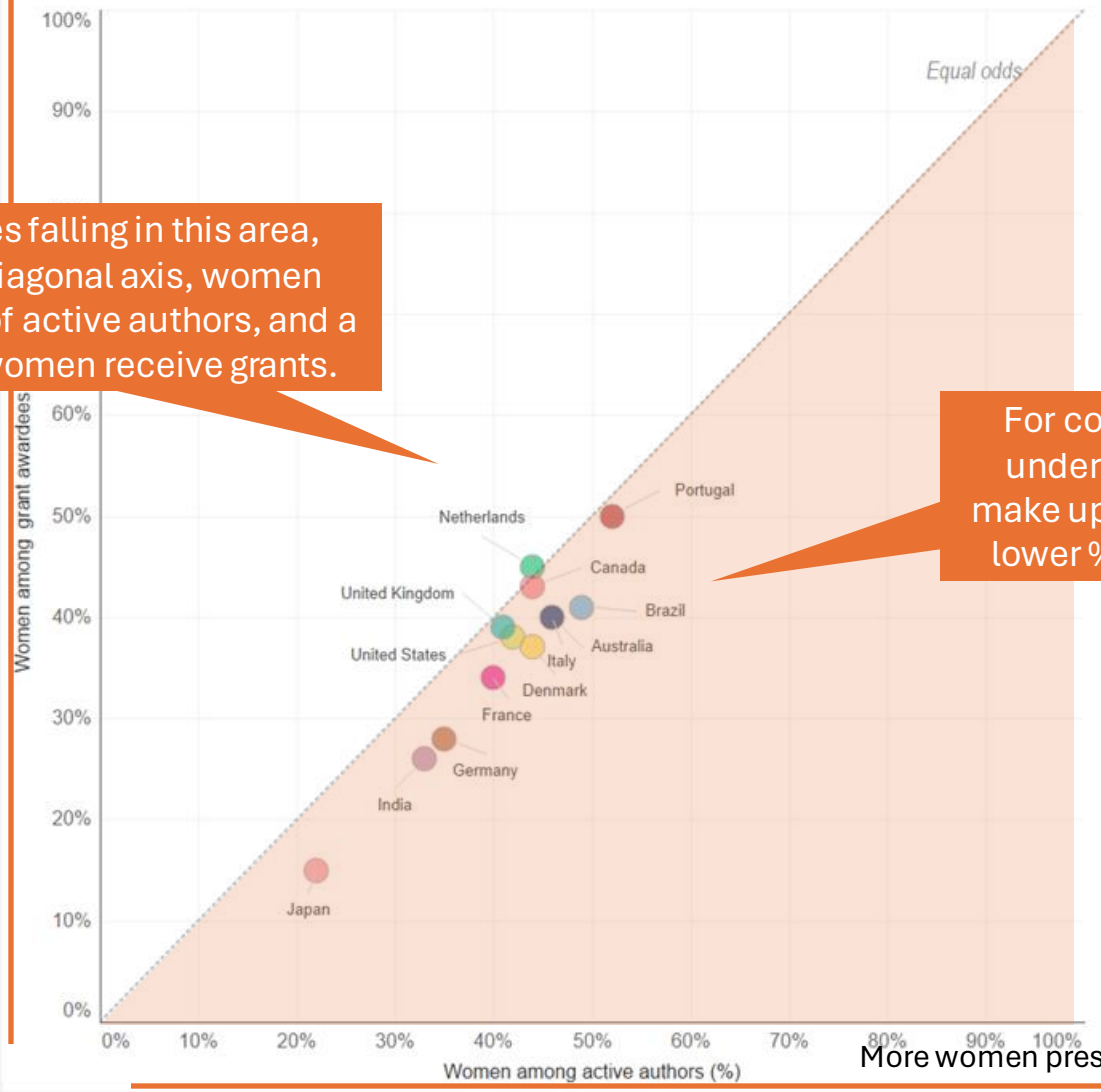
Countries selected

Note: the grants indicator page is static because not all countries have been included in this analysis. SciVal has additional information.

Comparison of the share women grant awardees with their share among active authors, 2018–2022



Country
- Australia
- Brazil
- Canada
- Denmark
- France
- Germany
- India
- Italy
- Japan
- Netherlands
- Portugal
- United Kingdom
- United States

For countries falling in this area, above the diagonal axis, women make up x % of active authors, and a higher % of women receive grants.

For countries falling in this area, under the diagonal axis, women make up x % of active authors, but a lower % of women receive grants.

- Among the 13 selected countries for which funders where present in the data available, women awardees represented a smaller share of all funded individuals compared to their weight among the population of active authors for 12 of these countries.
- This is reflected in figure, where most countries fall below the line of equal funding odds for women and men. Only the Netherlands (+1 points) fall above that line, with Canada almost making it (-0.7).

More women present in research activities

Methods

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Open access has been at the heart of research dissemination for decades and has gained traction around the world. Researchers and publishers are adapting practices to align with open access policies at institutional and governmental levels.

Note: Like multidisciplinarity, interdisciplinarity, policy citations, patent citations, alternative metrics and alignment with the SDGs, OA is viewed as one of the metrics that indicate (readiness for) societal impact.

Countries selected

Select one or multiple region/countries ↓: (Multiple values)

Choose a discipline ↓: All subject areas

Choose a career cohort ↓: All cohorts

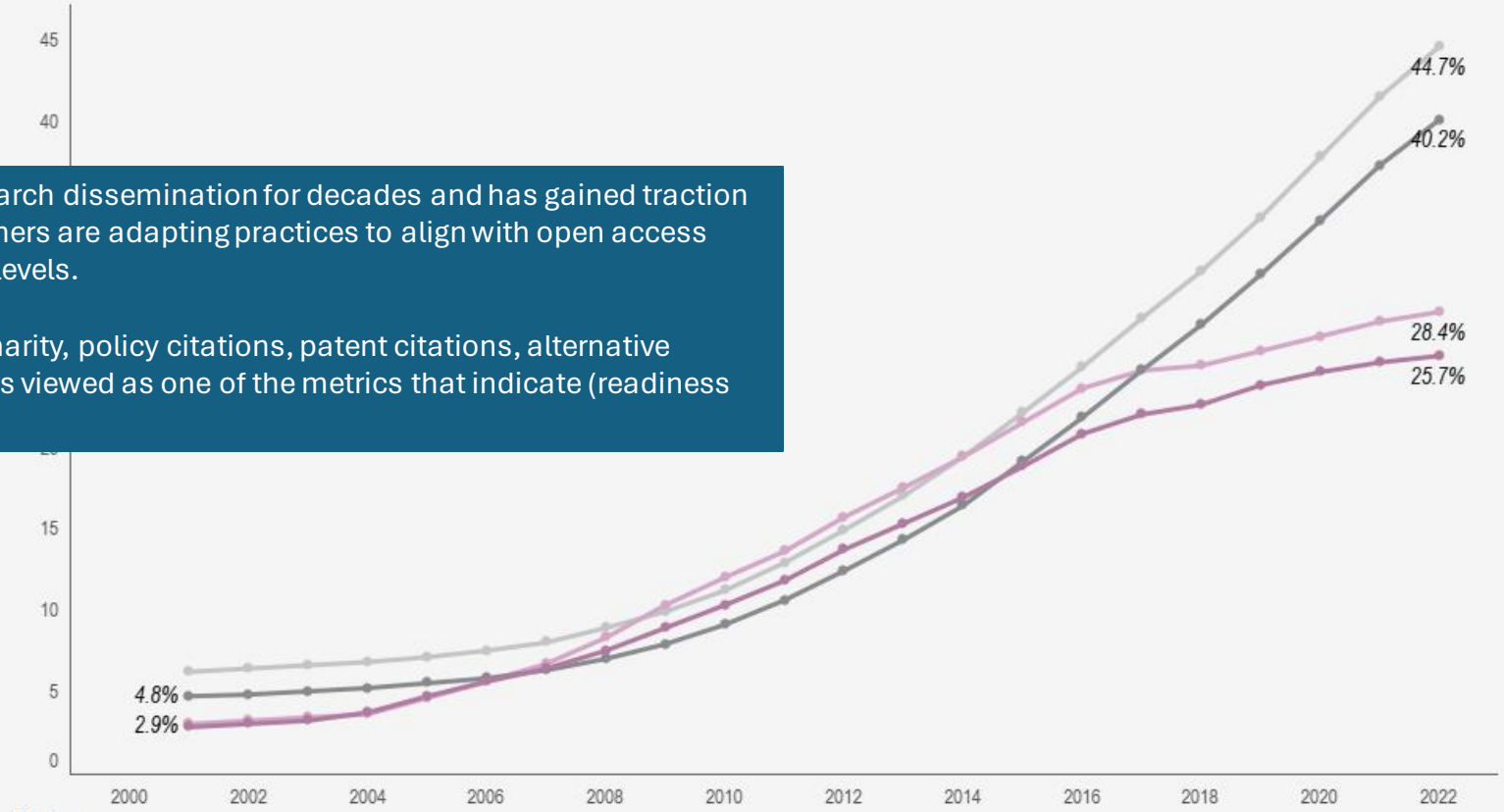
For the health sciences disciplines only:

Exclude COVID-related publications: No Yes

India & World

Subject: All subject areas

Measure: Open Access | Share of Gold publications



Note

Data points are displayed only when there are more than 1,000 authors in the selected group.

Share of Gold publications

Share of Bronze publications

Share of Green publications

Grants

Methods

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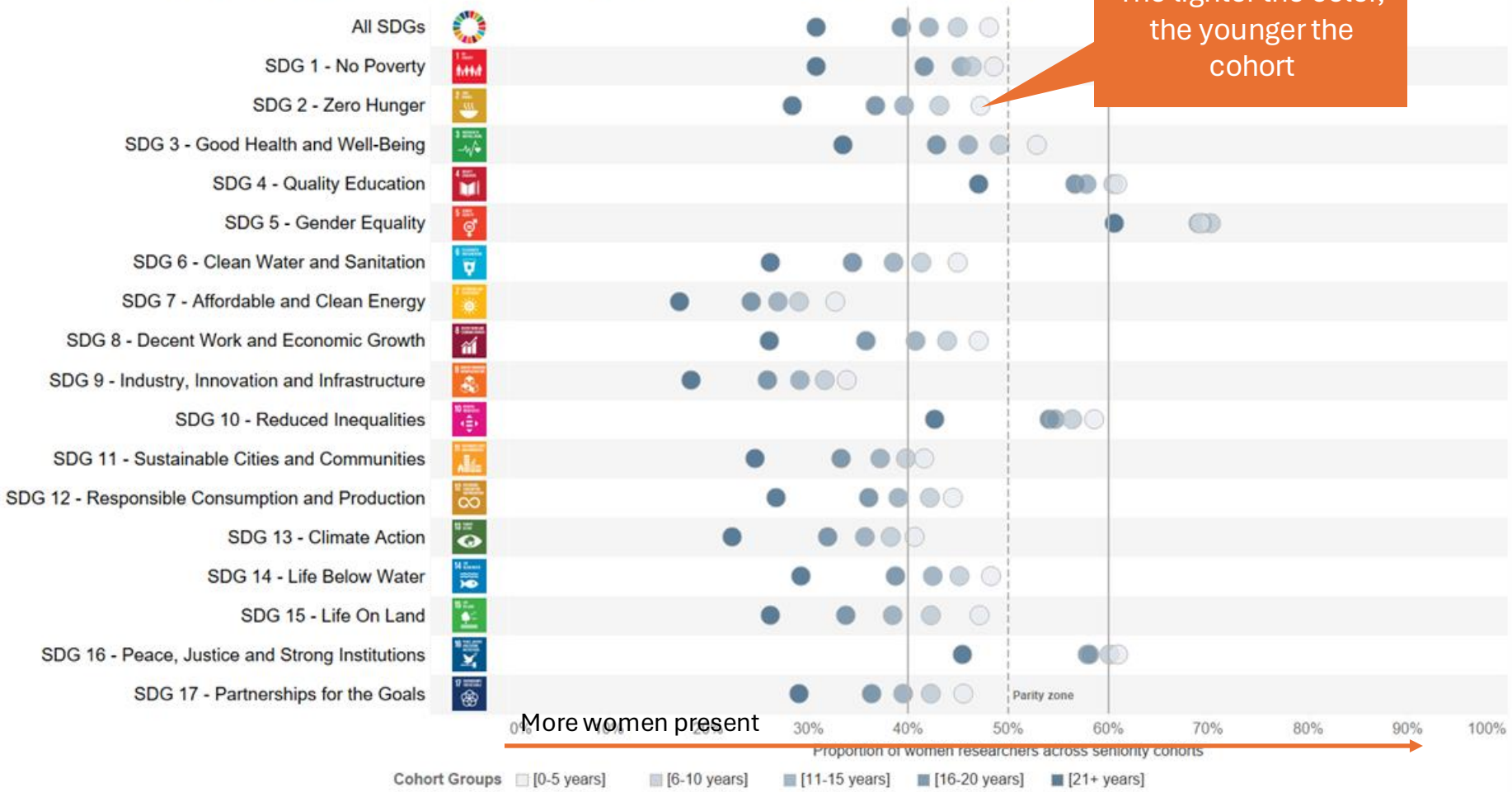
Countries selected

Note: the SDGs indicator page is static because the SDGs do not combine well with the disciplines filter (too much overlap).

Cohort analysis for the share of women authors across SI



The lighter the color, the younger the cohort

- Women are well represented across all cohorts for SDG 4 – Quality Education, SDG 5 – Gender equality, SDG 10 – Reduced Inequalities, and SDG 16 – Peace, Justice and Strong Institutions.
- Women are heavily underrepresented in SDG 7 – Affordable and Clean Energy, SDG 9 – Industry, Innovation and Infrastructure, and SDG 13 – Climate Action.
- Earlier career women researchers show somewhat comparable representation to men across 13 of the SDGs; this is not true for senior women researchers, highlighting how critical it will be to have policies in place to retain earlier-career women in these areas to have greater parity in the future.

Elsevier supports the Sustainable Development Goals

Explore the dashboard at:

https://public.tableau.com/app/profile/ads.elsevier/viz/Progress_Toward_Gender_Equality_In_Research_And_Innovation/Overview