How the G20 could champion access to evidence:
South Africa 2025

Briefing note / **November 2024**

Executive summary

Economic and social development is underpinned by access to quality research. Each year, an estimated US$1 trillion of public funds are invested globally in research that should and, in our interconnected world, could be easily available to all. Yet between 42% and 77% of research findings remain locked behind costly paywalls, transforming what should be a public good into a profitable asset for the US$26.5 billion research publishing industry. This inefficient and inequitable model restricts access for researchers, policymakers, and the broader public, particularly in lower-income countries; stifling innovation, compromising evidence-informed decision making, and eroding public trust in science. While recent open access initiatives have made some progress in reforming this system, this has been slow, and the approach of switching to costly pay-to-publish charges replaces one set of problems with another.

As the global research landscape shifts, and emerging economies increasingly compete with the established research producers, both in quantity and quality of new research, the failures of the current system will become increasingly clear. High-level political and diplomatic engagement is crucial to unite actors behind a common vision for research publishing and drive global reform. South Africa, as the 2025 G20 host, has a unique opportunity to leverage its commitment to Open Access and elevate research publishing reform onto the global policy agenda. The G20, whose members are responsible for approximately 90% of global research funding, has the economic and political might to transform the trajectory of research publishing reform. This presents a significant opportunity to promote more harmonised approaches to reform the financing, infrastructure and governance systems of research publishing.

We recommend the following key proposals for South Africa and G20 members.

As G20 president, South Africa can:

- Elevate research publishing reform to the policy agenda
- Be propositional about goals of research reform and set debate parameters
- Champion the creation of ongoing political coalitions around agreed goals

G20 members can:

- Articulate a shared vision for research publishing reform
- Create a working group towards open access policy harmonisation
- Create a working group towards sustainable financing
- Commission supporting evidence to fill existing evidence gaps

Why global research publishing requires urgent reform

Research drives global progress in economic, social, and planetary well-being through innovation and better decision making. In 2022, global public funding for research was estimated at US$1.1 trillion.[1,*] With technological advancements, including artificial intelligence (AI), research should be instantly shareable, enabling global collaboration and innovation. However, the current system for disseminating research is deeply flawed. Estimates vary, but between 42% and 77% of research is currently locked behind paywalls.[2,3] This transforms research from a public good into a private asset, benefiting a US$26.5 billion publishing industry while impeding nations from reaping the benefits of their investments for their societies and economies.[4]

The current research publishing system is failing in five critical ways:

1. **Unequal access to research:** Publicly funded research should benefit everyone, but paywalls limit access, which hinders the potential for societal and economic growth, particularly in lower-income countries that must rely on temporary or charitable solutions.

2. **Constraints on generating new research:** Limited access to existing research impedes the production of high-quality studies, resulting in redundant or methodologically weak research.

3. **Inefficiency and poor value from public spending:** Funders pay exorbitant fees to access research findings controlled by commercial publishers with high profit margins, offering poor value for public investment.

4. **Inequitable participation:** Prestigious institutions have privileged access to global research, reinforcing power and wealth disparities and excluding talent from underrepresented regions.

5. **Erosion of public trust in science:** A closed research enterprise undermines public trust and support for scientific investments. In an era of growing reliance on scientific evidence, fostering public trust is crucial for addressing global challenges like the climate crisis.

System failures are due in large part to a publishing oligopoly formed by five major companies – Elsevier, Springer Nature, Wiley, Taylor & Francis, and Sage (Table 1). These publishers control more than 50% of journals, with profit margins as high as 38%, rivalling those of tech giants like Apple.[5] This business model relies heavily on unpaid academic work for peer review and editing. Despite this, researchers are often burdened with high subscription and publication costs, with a median publication fee of US$3,286,[†] and a maximum of US$12,290 for prestige journals.[6] For South African researchers, the median fee equates to two months' wages, making many journals unaffordable.[7] Costs are also rising rapidly, with annual global spending on Article Processing Charges (APCs) almost tripling between 2019 and 2023, even after accounting for inflation.[8] The focus on publishing in prestigious English-language journals, almost exclusively owned by the big five publishers, reinforces this cycle and disproportionately impacts researchers in lower-income countries who face additional barriers to academic career progression.

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* Total public and private investment in research was estimated at US$2.9 trillion (PPP, current prices).

† Median of online APCs from the big five publishers listed above.

Table 1. Characteristics of the big five research publishers in 2023

	Journals	Revenue (US$)	Profit Margin	APC (US$) Median (Max.)	Miscellany
Elsevier Owned by RELX, UK HQ. Owns *Scopus* and *ScienceDirect*.	2,960	4bn (up 5% on previous year)	38%	3,060 (10,400)	Forty leading scientists resign from the editorial board of top science journal in protest of Elsevier's "greed".[9]
Springer Nature HQ in London and Berlin. Owns *Nature* and *Biomed Central*.	3,069	2bn (up 3%)	28%	3,290 (12,290)	Recent years have seen outcry over the unprecedented high APCs levied for top-tier journals, including *Nature*.[10] Springer Nature also recently went public, with an initial public offering on 4 October 2024.[11]
Wiley HQ in USA.	1,892	1.1bn (flat)	26%	3,620 (6,070)	In March 2024, Wiley revealed a plunge in research revenue after being forced to "pause" the publication of so-called "special issue" journals by its Hindawi imprint.[12]
Taylor & Francis Owned by Informa. HQ in UK.	2,986	0.8bn (up 4%)	24%	2,998 (5,595)	In 2024, Taylor & Francis signed a controversial AI partnership agreement giving Microsoft "non-exclusive access to Advanced Learning Content" across Taylor & Francis's nearly 3,000 academic journals.[13]
Sage HQ in UK and USA.	1,287	0.25bn (up 4.5%)	11%	3,450 (5,200)	In 2021, control of Sage moved to a trust.

Note: APC = Article Processing Charge or an open access publication fee. Revenues are total revenues and may include revenue streams from databases, tools, and electronic references. Number of journals and APC charges were sourced from journal and pricing lists on the publisher's website or the publisher's 2023 annual report. Revenue and profit margins were taken and calculated from 2023 annual reports.

Source: Adapted from Drake *et al*.[14]

Open Access: A brief history

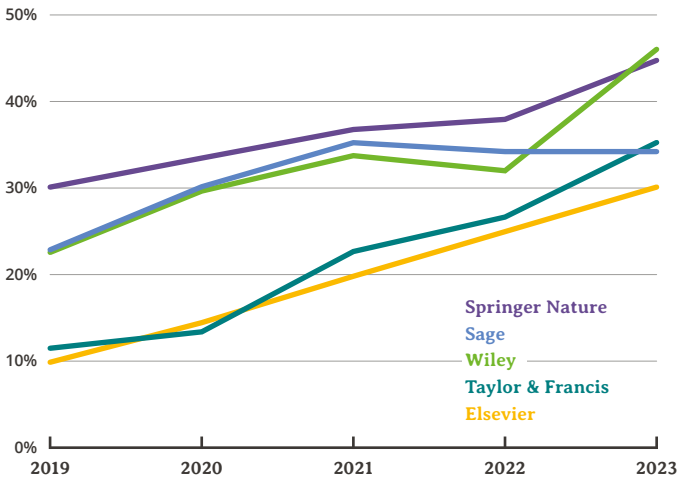
Widespread frustration and exclusion have fuelled a global movement to remove research paywalls, typically referred to as "open access" research. Notable recent initiatives include UNESCO's 2021 'Recommendation on Open Science',[15] endorsed by 193 countries; as well as coalitions including cOAlition S, aiming for immediate open access to published research (e.g. 'Plan S');[16] the International Science Council's 2021 review;[17] and OA2020, advocating to switch investments from subscription-based models to open access solutions.[18] South Africa has played an important role in this movement with, for example, Universities South Africa (USAf) aligning their universities with the OA2020 project. South Africa and emerging research economies, particularly in Latin America, have also pioneered alternative, non-profit or Diamond publishing models, challenging the dominance of commercial publishers through publicly and institutionally funded publishing platforms like SciELO and AmeliCA.[19,‡]

These initiatives have helped spur a cascade of policy changes at the national and multilateral levels. A majority of G20 countries have national policies that include open access principles, and large philanthropic organisations like Wellcome Trust and the Bill & Melinda Gates Foundation (BMGF) have deepened their commitment to Open Access, with BMGF requiring all published content to be published Open Access and declining to pay APCs from January 2025.[20]

As a result of these changes, the proportion of open access articles published has been slowly rising. Delta Think estimated that around 30% of all articles published in 2019 were paid-for open access.[21] By 2023 this had risen to around 48%, although this has declined 1% since 2022, indicating some stagnation.[22] Data from the big five publishers from 2019 to 2023 illustrates a similar trend, with the average proportion of open access articles each year generally rising from 19% up to 38%, but with differences in the pace amongst publishers (Figure 1).

‡ Diamond entails no fees for authors or readers. Outputs are typically published on non-profit platforms with direct or in-kind funding from host institutions or funding bodies.

Figure 1. Proportion of Open Access publications from the largest five research publishers, 2019-2023



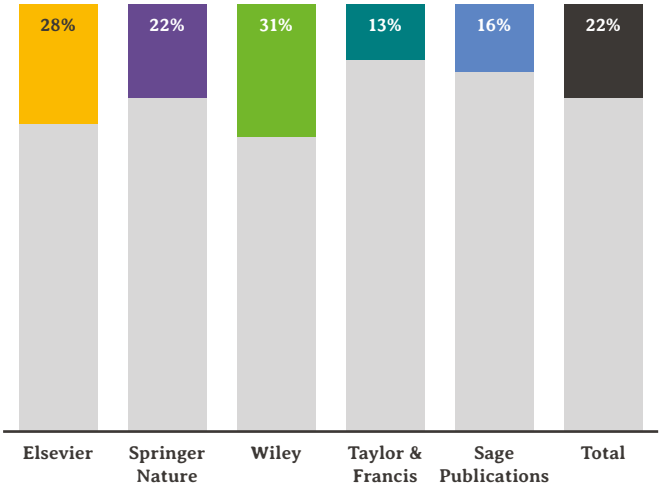
Note: Refers to articles available Open Access from the publisher. Some publishers allow pre-prints or author manuscripts to be made available elsewhere, under the so-called "green" Open Access route

Sources: Publisher reports, Wordsrated, ESAC registry, OpenAlex.

Yet, despite this slow rise in open access articles, there was no similar increase in fully open access journals from the big five publishers. In 2023, less than a quarter of their journals were classified as fully open access (Figure 2), compared to an estimated 47% of all journals.[23] This means many articles are being published in hybrid journals where only select content is open access, and authors are still paying exorbitant APCs. This also presents a risk of double-dipping: charging both open access publishing fees and institutional subscriptions.

While there is a broad commitment to open access principles, progress has been slow and is stagnating. There is still no clear consensus on the desired end state of Open Access, nor how it should be achieved. This lack of alignment has created a fragmented system and allowed the major five publishers to adapt their business models by slowly and partially shifting from subscription-based "reader pays" to "author pays" through APCs, where authors incur exorbitant fees to make their work freely accessible. This shift essentially replaces one set of access barriers with another, and does little to create an accessible and equitable system. Greater engagement and strong leadership is needed for more comprehensive reform.

Figure 2. Proportion of fully open access journals by research publisher 2023



Sources: Publisher journal lists, publisher annual reports, publisher websites.

A vision for research publishing reform

A clear vision for research publishing reform is essential to steer the strategic, high-level political and diplomatic engagement needed to foster meaningful, global change. Recent analysis from the Center for Global Development (CGD) and International Network for Advancing Science and Policy (INASP), consolidating various perspectives on research publishing reform, highlighted three foundational characteristics of a reformed research publishing system: accessibility, quality, and usability. These characteristics can be achieved by change in three critical domains: financing, infrastructure, and governance models.[24]

Efforts to reform the research publishing system must ensure it is more effective at sharing knowledge and is more inclusive of researchers and users in all countries. Research should be free to read, easy and affordable to publish, available quickly, stored safely, and accessible in many languages. Research publishing should balance rapid sharing with scientific good practice. Quality should be judged based on open, transparent, peer review – not on journal prestige or impact factors. Finally, research should be easy to use, adapt, and share through open licensing requirements and more flexible formats, beyond PDFs, that are better suited to the online and generative AI era.

To achieve this, financing, infrastructure, and governance models must be reformed. The research publishing system is currently fee-based and profit-driven, creating significant barriers for researchers and readers. What is needed is a model that fosters immediate access, affordability and long-term sustainability, based on fair profit and the public good, with costs covered mostly by funders and research institutions, not individuals.

South Africa as a champion for effective access to evidence: advancing national, regional, and global goals

South Africa is uniquely positioned to lead policy change on research publishing reform. It is strongly committed to Open Access, which is reflected in its draft National Open Science Policy, Open Science Framework, support for global initiatives like OA2020 and cOAlition S, and its leading role in converting publishing contracts into open access agreements through the South African National Library and Information Consortium (SANLiC). South Africa's development of innovative open access models, such as SciELO South Africa, Africa Journals Online (AJOL), and the African Open Science Platform, position it well to promote innovative alternatives to the current publishing models.[25]

By leading research publishing reform, South Africa can further advance its own science, technology, and innovation goals as well as those of the broader African Union. South Africa's 2019 'White Paper on Science, Technology and Innovation' aims to create an "open, responsive and diverse knowledge system"[26] by advancing the Open Science agenda domestically and on the African continent, by removing barriers to Open Science; requiring publication of publicly funded research in accessible repositories; and requiring research storage and management systems to be findable, accessible, interoperable and reusable following the FAIR principles.[27] Similarly, the African Union's 'Science, Technology, and Innovation Strategy for Africa 2024' highlights research, innovation, and entrepreneurship as foundations for African development.[28] Networking, cross-border collaboration, systematic knowledge sharing, co-creation, and adaptation are emphasised as essential for private sector growth and public services. Reforming research publishing to ensure unrestricted access to high-quality, usable research is essential for realising these ambitions and advancing Africa's broader development vision.

How South Africa can leverage science diplomacy for research publishing reform as G20 president in 2025

As president of the 2025 G20 Summit, South Africa has the opportunity to leverage its commitment to Open Access and champion research publishing reform on a global scale. By gathering evidence, reframing debates, and building networks and capacity, South African policymakers can use science diplomacy to catalyse reform. These efforts can help elevate Open Access onto the international policy agenda, fostering consensus and harmonisation across models for research publishing governance, infrastructure, and financing.§

The G20 is especially well-suited for targeted science diplomacy efforts on research publishing reform. G20 countries, which account for approximately 90% of global research spending, are transforming research production, with nations like China, India, Brazil, and Indonesia assuming increasingly prominent roles.[29] While nascent, African research output is also experiencing rapid growth, nearly doubling since 2013.[30] Emerging research producers may take different approaches to research publishing that reduce their reliance on expensive journals and upend the status quo. This shift could either fragment the research landscape further, limiting collaboration, or lead to transformative reforms, fostering a truly global research culture.

Thirteen G20 members already have national policies that support open access principles, laying a strong foundation for collaboration.[31] The G20 Chief Science Advisers' Roundtable (CSAR) has also recognised UNESCO's guidelines, underscoring the urgency of immediate, universal access to publicly funded scientific knowledge for communities worldwide.[32] South Africa, as G20 host, and the broader G20 are primed to provide decisive political leadership now to build consensus and transform the global research publishing system for the better. With its significant political and economic power, coupled with the deep expertise within its working groups, the G20 is well-equipped to drive lasting, international change.

§ See theory of change for science diplomacy in research publishing reform at https://www.inasp.info/research-publishing-reform

We propose three key recommendations for South African leaders and four opportunities for G20 members.

1. As G20 president, South Africa can:

Elevate research publishing reform to the international policy agenda. Agenda setting at the G20 can have ripple effects on global priorities. South Africa elevating research publishing reform onto the G20 agenda signals its importance and could spark increased political will and actions for public investment, cross-border initiatives, policy alignment with public interests, and innovation – and could prompt publishers to reform their practices.

Be propositional about the goals of research publishing reform. South Africa can establish the goals of research publishing reform and the parameters of the debate. It can emphasise the importance of accessibility, usability and quality for a reformed research system, as well as the need for meaningful change in the domains of infrastructure, financing, and governance models. It can also develop a clear communications strategy that articulates these goals and key messages, tailoring messaging to different stakeholders' interests. Achieving buy-in may not always be straightforward, necessitating a comprehensive programme of activities including public events, publications, private meetings, and individual outreach efforts.

Champion the creation of ongoing political coalitions around agreed goals. South Africa can leverage the diverse membership of the G20 to convene multilateral, bilateral, public, private and side meetings, between state and non-state actors, to forge connections and coalitions, share best practices and lessons learned, and mutually strengthen each other's capacity for publishing reform. This is especially important for countries that have been historically marginalised from research reform debates. South African and African researchers, as well as civil society organisations at the forefront of open access debates, can be supported to fully participate in these discussions.

2. Opportunities for G20 members

Articulate a shared vision for reform. This would be developed by member states but could include a commitment to non-negotiable, immediate access to research; a shift away from pay-to-read or pay-to-publish models; a commitment to innovation in peer review to ensure quality; and a commitment to support effective and equitable publishing infrastructure. Open access positions by G20 nations could guide these efforts.

Create a working group towards open access policy harmonisation. Open access policy harmonisation involves aligning rules, regulations, and standards governing research dissemination. The current landscape is fragmented, with diverse national and institutional policies. This requires a balanced approach, considering economic, political, and cultural diversity alongside the benefits of harmonisation. Policy harmonisation can build on the G20 CSAR recommendations to establish interoperability standards following 'Findable, Accessible, Interoperable, and Reusable (FAIR) principles that would allow interlinking among various national and international repositories to expand access to publicly funded research output.

Create a working group towards sustainable financing. On The G20 can outline a position statement rejecting pay-to-read and pay-to-publish models, given this approach effectively excludes many countries from full participation in the global research system. Instead, the G20 can encourage exploration of different institutional financing models, including Diamond models. Open access will require reallocating existing spending on publishing costs to new infrastructure. This is all within the reach of existing public spending if states work together.[33] G20 nations, with their substantial research funding, are well-positioned to initiate these mechanisms. Building on the UNESCO guidelines, this could include developing a G20 infrastructure investment fund; investing in the development of new open access platforms and innovative journal models that separate research publication from quality assessment; capacity-building programmes for researchers and research institutions; and educational initiatives focused on digital literacy and open access publishing.

Commission supporting evidence. G20 members could commission analysis to fill evidence gaps. For example, to better understand the barrier to accessing evidence and their implications, or to investigate the feasibility of a coordinated multilateral initiative supporting non-profit digital publishing platforms. Participation from researchers and policymakers from emerging research economies is important to ensure diverse evidence generation. Participants might consider having this component coordinated through the CSAR.

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