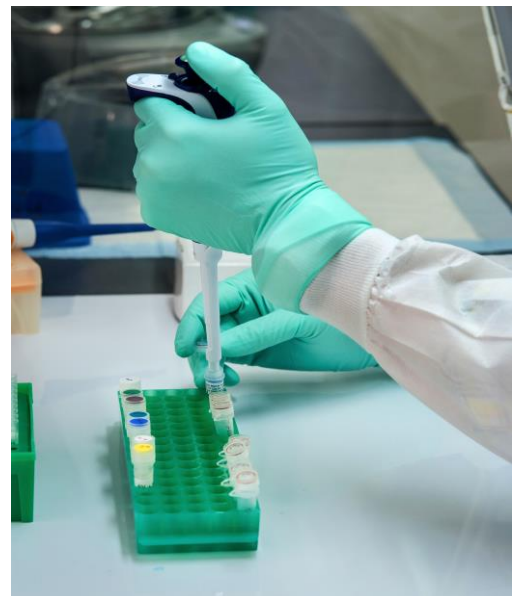


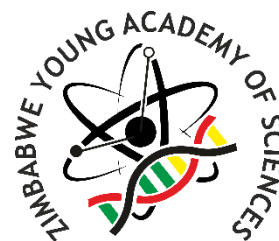
ZimYAS Policy Brief



Predatory journals in science publishing:

STRATEGIES FOR PREVENTING A NATIONAL CRISIS AND PROMOTING VISION 2030

Edmond Sanganyado



About this Policy Brief

In response to the Manpower Planning and Development Amendment Act of 2020 and the Centre for Education, Innovation Research and Development Bill of 2020 to promote science, technology, and innovation, the Zimbabwe Young Academy of Sciences convened the Research Excellence Initiative to develop policy recommendations that can guide in ensuring the research output from Zimbabwean researchers contribute to policy and innovation. This document offers strategies to educate Zimbabwean researchers against publishing in predatory journals. We thank Wilfred Njabulo Nunu and Simbarashe Nkomo for their independent review of the full report.

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Summary

Science publishing plays a crucial role in disseminating relevant, reliable, and new knowledge, products, processes, and techniques. The quality of research output produced by a country is a crucial indicator of innovativeness and commitment to economic growth through science, technology, and innovation.

The long-term success of the recently signed *Manpower Planning and Development Amendment Act of 2020* and the *Centre for Education, Innovation Research and Development Bill of 2020* requires careful measures to protect research output from illegitimate science organizations such as predatory journals. Hence, educating, protecting, and guiding Zimbabwean researchers on the dangers of predatory journals is imperative for ensuring science

becomes a viable fuel for economic and social growth.

Key Recommendations

- Create an accessible national database of accredited journals
- Develop a framework for more robust ethical science publishing standards
- Eliminate the use of research output volume as a faculty assessment metric

Zimbabwe's quality of research output is a key indicator of our commitment to using science, technology, and innovation as fuel for economic growth.

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1 Scientific publishing as a key for development

Scientific publishing is integral for cultivating a national culture of innovation, reflection, and sustainable socio-economic development. A science publication demonstrates that international experts have found the research to be original and of global importance. It is not surprising that countries that contribute significantly to quality scientific publications lead globally in medicine, technology, and engineering innovations (Figure 1).

The Government of Zimbabwe has acknowledged that scientific research is pivotal for ensuring food security and boosting productivity in the manufacturing industry. For that reason, in the *Vision 2030 - Towards a Prosperous & Empowered Upper Middle-Income Society by 2030*, the Government promises to offer incentives to support research in agriculture (bio)technology and drug development and discovery.

To ensure that their strategic plans align with the national vision, Zimbabwean universities included innovative research as a key result area. For example, in its Strategic Plan for 2019-2023, the Midlands State University stated they sought to ‘excel in research, innovation and technology transfer’ to ‘contribute meaningfully to the country’s development agenda’.

Hence, many universities in Zimbabwe now include the number of scientific publications when assessing faculty for appointment, promotion, awards, and tenure.

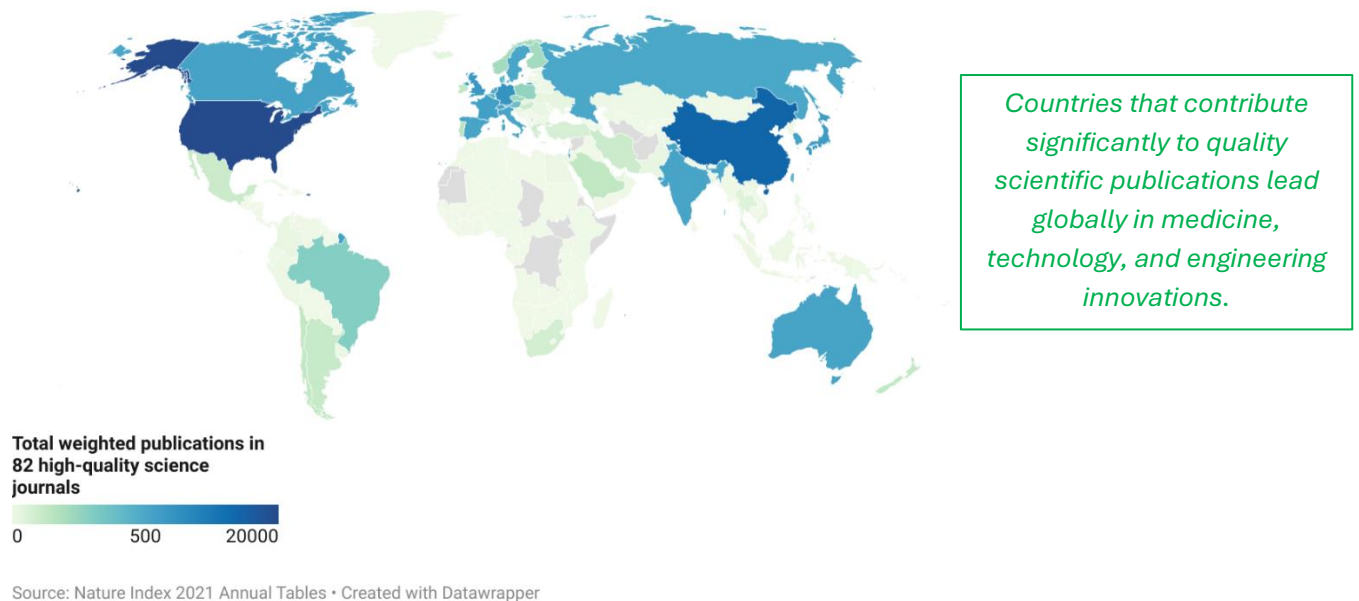
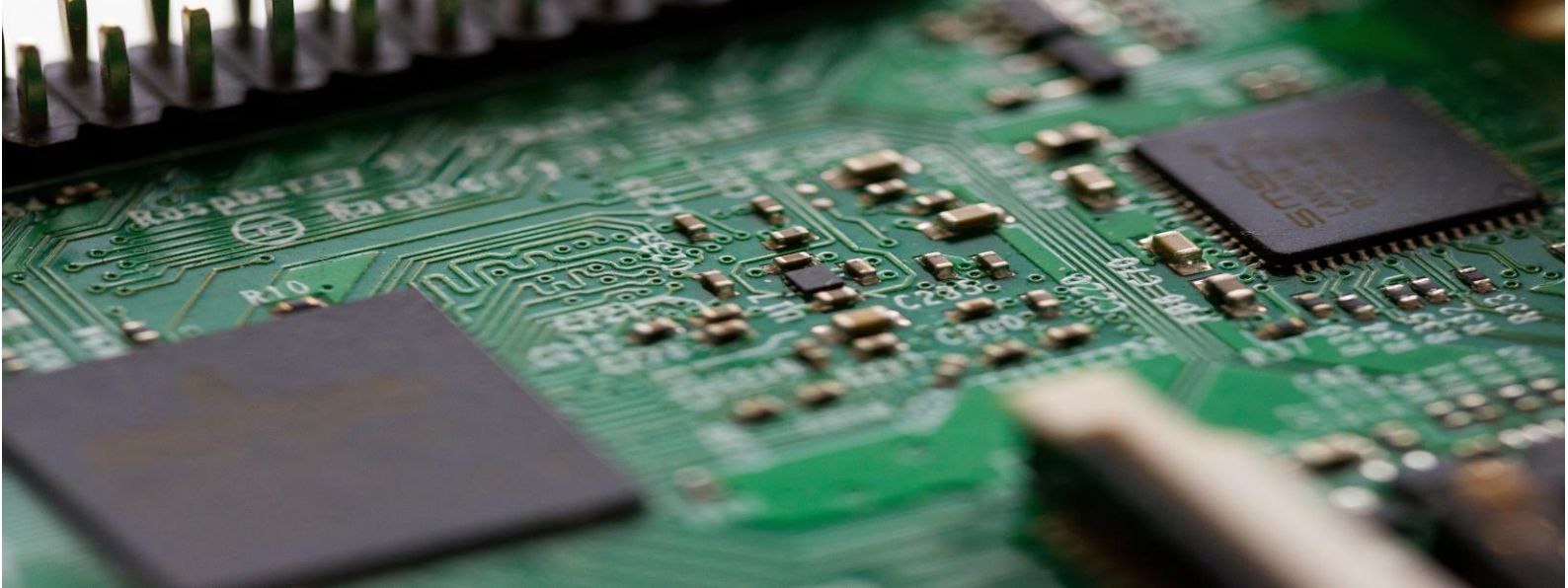


Figure 1 High-income countries contribute more research in the top 82 high-quality natural science journals than low-income countries.



2 What is a predatory journal?

Predatory journals and publishers are institutions or organizations that publish research articles at a cost while offering little or no peer review to improve the quality of the research article [1]. They send spammy, poorly worded, and misleading emails requesting submissions and promising quick publication times but often hide the associated cost for publishing.

Some predatory journals obscure their lack of indexing in reputable databases such as SCOPUS, Web of Science, and DOAJ by claiming they are indexed by some databases that do not assess for quality, such as Google Scholar. In many cases, predatory journals have similar-

sounding names to reputable journals. They have become more sophisticated in hiding their nefarious agenda.

Despite being housed in different countries worldwide, with India, Pakistan, and Nigeria identified as major hotspots for their operations, predatory journals have the

common goal of profiting from exploiting researchers. Publishing research without critically considering the content while pretending to be a reputable journal erodes trust in science. It brings to question the reliability of science in policymaking and economic development. We cannot address national and global challenges, including food security, climate change, water sanitation, and poverty, through innovative research if our researchers fall prey to predatory journals.

Ideally, young Zimbabwean scholars should publish in reputable national and international journals that offer opportunities for expert critique. High-quality, reputable journals improve research quality through the peer-review process. They also provide wider dissemination through reputable databases to maximize global impact. Thus, scientific publishing in reputable journals offers a reliable platform for evidence-based policymaking, technological advances, and innovation.

Scientific publishing in reputable journals provides a reliable platform for evidence-based policymaking, technological advances, and creative innovation



3 Why do researchers publish in predatory journals?

Since predatory journals are not well understood and there is a lack of institutional or national policy against predatory publishing, more faculty members seeking promotion continue to publish in predatory journals to increase their publication count.

Some faculty members across Zimbabwean universities have knowingly or unknowingly published in predatory journals. Despite the quick publishing time and less demanding peer-review process, publishing in predatory journals inadvertently tarnishes the image of the researchers, the institution, and the country.

A recent global survey by the InterAcademy Partnership found around 14% of researchers in Africa contributed to predatory journals. The researchers cited reasons such as [2]:

- They were not aware of the predatory nature of the journal
- They needed to advance their careers
- They were encouraged by their peers

A survey of authors who published in predatory journals found that [3]:

- Researchers from developing countries believed reputable journals would reject their work and opted for the less rigorous predatory journals.
- Most researchers believed they had insufficient training to design experiments and prepare research papers suitable for publication in reputable journals.



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4 Predatory Publishing Undermines Vision 2030


Predatory publishing undermines the promotion of competent individuals to influential positions critical for (i) training the future generation of scientists and (ii) developing critical technology, products, and knowledge to fuel the economy.

The appointment of individuals who publish in predatory journals to influential positions in universities threatens Vision 2030. It is equivalent to accepting and celebrating dishonesty practices, incompetence, fraud, and corruption. Such appointments negatively affect creativity, innovation, and development as incompetent individuals occupy positions that should have been occupied by competent researchers [4].

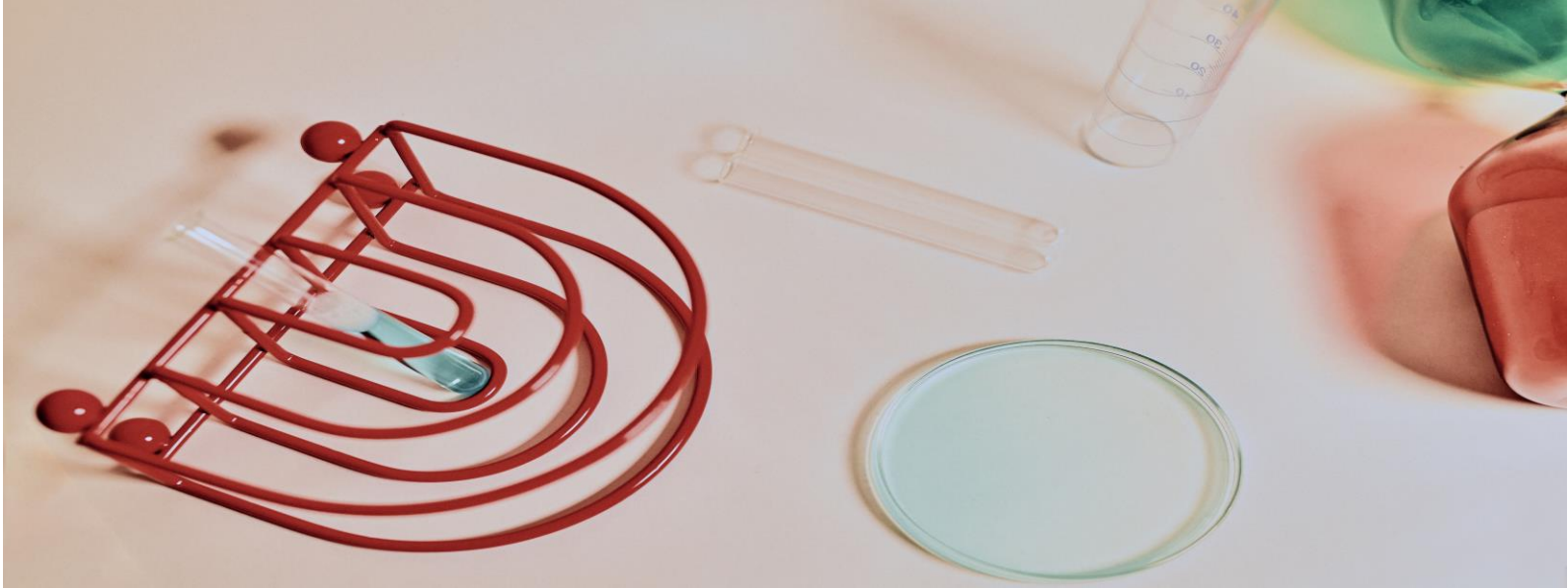
These incompetent individuals will avoid hiring, nominating, or promoting competent individuals as they feel threatened. As a result, if predatory publishing goes unchecked, Zimbabwean universities and research institutions will become citadels of incompetence, grossly undermining Vision 2030.

Predatory publishing hampers the internationalization efforts of Zimbabwean universities. Universities with faculty publishing in predatory journals will struggle to compete globally as their faculty are less likely to be appointed on international scientific committees.

Predatory publishing is costly to the economy. In South Africa, more than 4250 research articles were published in predatory journals between 2004 and 2015, resulting in a loss of more than US\$35 million paid as subsidies to universities and research institutions [5].



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5 Recommendations for curbing predatory publishing

5.1 *Create an accessible national database of accredited journals*

In recent years, several research councils and institutions worldwide have taken steps to eliminate predatory publishing in their institutions and countries.

In 2017, the University Grants Commission of India established the Center for Publication Ethics to develop a list of journals that researchers from India can publish – a whitelist. In contrast, the Chinese Academy of Sciences developed an Early Warning List of International Journals that lists journals with questionable practices.

Constructing a whitelist or blacklist requires great caution because a similar attempt by the South Africa Department of Higher Education and Training’s accredited journal list was shown to contain predatory journals. The Zimbabwe Council for Higher Education and Research Council of Zimbabwe, in consultation with the Zimbabwe Academy of Sciences and Zimbabwe Young Academy

of Science, should develop a comprehensive discipline-based list of accredited journals and guidelines for determining acceptable journals. There is a need for establishing a

College of Excellence in REsearch Publication (CEREP) tasked with evaluating the accredited journal list triennially.

5.2 Develop more robust ethical standards in science publishing

Predatory journals are unethical as they often do not consider the social and clinical value of the research, scientific validity, repeatability, or respect for the future subjects of the study.

There are several cases where companies selling medicine published fake studies in predatory journals to mislead customers by saying their product was scientifically approved. Since peer review is essential for assessing the scientific validity and repeatability of the research, researchers who avoid peer review end up tainting the scientific record.

The ZIMCHE and RCZ play a critical role in cultivating trust in science among the

Zimbabwean public. For the accredited journal list to eliminate predatory publishing, the ZIMCHE and RCZ should develop ethical standards in research publishing that are clear and firm. These standards will help institutions, in consultation with the proposed **College of Excellence in REsearch Publication** taskforce, to educate and empower their faculty on the dangers of predatory publishing.

5.3 *Eliminate the use of research output volume as a faculty assessment metric*

The use of a number of research publications for appointment, promotion, and bonuses has been associated with an increase in unethical research publication practices such as predatory publishing and data manipulation. Countries such as South Africa, Spain and China that paid their faculty for publishing saw a marked increase in the number of publications in predatory journals.

The ZIMCHE, in consultation with the Zimbabwe Academy of Science and Zimbabwe Young Academy of Sciences, should develop a framework for assessing research productivity and quality that is not centered on research output volume. Such a framework should focus on research quality (e.g., the novelty, global impact, and

repeatability) rather than mere numbers. In addition, Zimbabwean universities and research organizations should co-sign the San Francisco on Research Assessment (DORA) to demonstrate their commitment to best practices in faculty and research output evaluation.



Consultation

ZIMYAS is open for partnership with ministries of higher education, science and technology, health, environment, agriculture, and mining to develop scientific publishing policies. ZIMYAS is available to work with universities, national research organizations, and private companies to provide support and solutions to **combatting predatory publishing** among researchers in Zimbabwe and all the solutions suggested above.

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For more information about Zimbabwe Young Academy of Sciences:

<https://www.zimbabweyas.org>

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Resources

- How to check if a journal is reputable: <https://thinkchecksubmit.org/>
- List of predatory journals and publishers: <https://beallslist.net/>

Zimbabwe Young Academy of Sciences enables research excellence among young scholars, giving them an influential voice on policy matters.

ZIMYAS is an independent, cross-disciplinary platform for outstanding young scholars in Zimbabwe and the Diaspora that seek to foster research excellence through scientific capacity building, promotion of interdisciplinary collaborations, and contributions to societal development.

