Indian Science Needs Fewer Borders

Mains: *GSIII – Science and Technology*

Why in News?

India's research challenges arise less from foreign influence and more from inadequate funding, institutional constraints and administrative barriers.

What is the importance of Research Publishing System?

- **Evaluation of data** – Researchers submit manuscripts to academic journals, where editors and subject experts evaluate their quality through peer review.
- **Documentation** – The system ensures scientific credibility, knowledge dissemination and permanent documentation of research findings.
- However, journal reputation and publication counts increasingly influence researchers' careers, institutional rankings and research funding.

What are the Major Concerns in India's Research Ecosystem?

- **Commercial Concentration in Academics** – A few publishers dominate academic publishing, creating commercial concentration and imposing high publication fees.
    - India's One Nation, One Subscription (ONOS) scheme provides journal access but lacks adequate mechanisms to address steep publishing charges.
- **Overdependence on Publication Metrics** – Evaluation based on publication numbers and journal reputation rather than the actual quality and contribution of their research.
    - The San Francisco Declaration on Research Assessment (DORA) recommends assessing individual research outputs based on their scientific merit.
- **Inequality in Global Research Publishing** – Researchers from the Global South face financial constraints and disadvantages in accessing prestigious international journals.
    - Gold Open Access requires researchers to pay substantial fees to publish in open-access journals.
    - A 2024 study highlighted the preference of reviewers and editors for researchers from wealthier countries, indicating geographical bias.
- **Misplaced Concerns over Colonial Influence** – Publishing internationally does not necessarily subordinate Indian scholarship to foreign priorities.
    - Replacing international journals with domestic alternatives alone cannot guarantee better research quality or global recognition.

What are the Structural Challenges in India's Research Institutions?

- **Inadequate Research Funding** – India's R&D expenditure remains significantly lower than that of leading research economies.
- **Weak Institutional Autonomy** – Excessive administrative and bureaucratic interference restricts independent research decisions.
- **Inadequate Teaching Incentives** – Imbalanced incentives between teaching and research affect academic responsibilities.
- **Leadership Constraints** – Research institutions require greater authority to appoint their own institutional leaders.
- **Unethical Research Practices** – Quid pro quo arrangements and publication-based incentives can undermine research integrity.
- **Administrative Burden** – Excessive non-academic responsibilities reduce researchers' time for innovation and collaboration.

International Best Practices – Lessons from China
• China's Ministries of Education and Science and Technology disallowed the use of journal reputation as the basis for academic admissions and rewards. • China increased its R&D expenditure to 2.7% of GDP in 2024, compared with India's 0.84% in 2023–24. • The Chinese Academy of Sciences refused to pay publication charges to 30 open-access journals, challenging excessive commercial influence.

What is the Way Forward?

- **Increase R&D Funding** – Ensure adequate and timely financial support for research institutions and scientists.
- **Reform Research Assessment** – Evaluate research based on originality, scientific contribution and societal relevance rather than publication counts.
- **Ensure Institutional Autonomy** – Provide institutions with greater freedom in research decisions and leadership appointments.
- **Improve Academic Incentives** – Balance teaching and research responsibilities through appropriate institutional incentives.
- **Promote Research Integrity** – Introduce safeguards, incentives and sanctions against quid pro quo arrangements and unethical practices.
- **Reduce Administrative Burden** – Minimise non-academic responsibilities to allow researchers to concentrate on innovation and collaboration.
- **Ensure Equitable Publishing** – Address excessive publication fees and geographical discrimination while strengthening credible domestic journals.

What lies ahead?

- India must strengthen research through adequate funding, institutional autonomy and academic freedom rather than restricting international engagement.
- Scientific excellence requires fewer artificial borders and greater emphasis on knowledge, collaboration and independent scrutiny.

Reference

[The Hindu|Indian science needs fewer borders]

