



DAILY EDITORIAL ANALYSIS

TOPIC

**INDIA'S RESEARCH PARADOX: FROM
RESEARCH VOLUME TO REAL-WORLD
IMPACT**

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INDIA'S RESEARCH PARADOX: FROM RESEARCH VOLUME TO REAL-WORLD IMPACT

Context

- India's research output has surged between 2020 and 2025, but weak citation impact, low patent commercialisation and rising retractions raise concerns over a growing '**paper fortress**'.

About India's Research Ecosystem

- India has emerged as a major global producer of academic knowledge. Between **2020 and 2025, Indian researchers published nearly 1.6 million papers in Scopus-indexed journals**, the highest among countries, **ahead of the US, UK and China**.
 - Some private universities recorded **over 760% growth** in paper output in five years.
- Patent activity has also expanded sharply. University patent filings rose almost fourfold, from **11,150 in 2020–21 to 45,776 in 2024–25**.
 - Some private universities have collectively surpassed the IITs in patent filings.
- In **QS World University Rankings 2026**, India had **54 institutions**, compared with **only 11 in 2015**, becoming the fourth-most represented country globally. **Eight Indian institutions** entered the global top 100 for citations per faculty.
 - IIT Delhi was India's highest-ranked** institution at **123rd**, while IIT Bombay and IIT Madras followed; IIT Madras rose **47 places**, from 227th to 180th.
- However, the **Times Higher Education (THE) 2026** rankings are more sobering: although India had **120+ ranked institutions**, only four entered the global top 500. IISc was placed in the **201–250 band**.

India's Research: From Publication Volume to Real-World Impact

- Publication Volume vs Research Impact:** The central challenge is that **quantity has not translated proportionately into influence**.
 - India ranks third globally in annual publication volume but only **19th by h-index**.
 - Its aggregate h-index is **925**, compared with **3,213 for the US**.
 - Thus, India produces enormous amounts of research but comparatively less research that is subsequently read, cited, adopted or built upon.
- Patent Paradox:** The patent story reveals a similar disconnect. Although university filings increased from **11,150 to 45,776**, patent grants in **2024–25 fell by 67%** from the previous year.
 - Over the last five years, the overall patent-grant rate averaged about **24%**, but for universities it was reportedly as low as **3%**.
 - More concerning, the share of granted patents actually put to commercial use, the **working rate** fell from **12.1% in 2022–23 to just 1.6% in 2024–25**.

Related Issues & Concerns

- Incentive Structure:** The **NIRF** assigns **30% weightage to Research and Professional Practice**, substantially rewarding publications and patent applications/grants.
 - The problem is that institutions can gain from filing or publishing without equivalent penalties for poor downstream outcomes.
- Monetary Incentive Problem:** Several private universities offer cash incentives, sometimes **lakhs of rupees per paper, patent or conference presentation**.

- ♦ Such incentives, when weakly monitored, can encourage predatory publishing, questionable authorship and paper-mill activity.
- ♦ The contrast between **IIMs and IITs** is instructive. Some IIMs offer incentives of up to **₹10 lakh for papers in top-tier journals**, partly compensating faculty for the opportunity cost of consulting.
- ♦ Older IITs generally do not offer direct publication bonuses; they rely instead on research infrastructure, conference support, academic prestige, named chairs and technology-transfer opportunities.
- **Research Integrity:** India now ranks **third globally in outright retractions**. Its retraction rate increased from **1.5 per thousand papers in 2012 to 3.5 in 2022**.
- ♦ A study of **3,244 Indian-affiliated retracted papers over two decades** found around **60% linked to private institutions**, with fake peer review, fabricated data and plagiarism among major causes.

Related Efforts & Initiatives

- India has strengthened its research ecosystem through **ANRF**, the **National Education Policy (NEP) 2020**, **IPR reforms** and institutional research-ethics mechanisms.
- India still lacks a fully independent national research-integrity body with strong investigative powers unlike the UK's **Research Integrity Office (established in 2006)** and Denmark's statutory **Board on Research Misconduct**.

Way Forward: From Paper Fortress to Knowledge Power

- India needs to shift from **'publish more' to 'create impact'**.
- **Reform NIRF metrics** to reward quality-adjusted citations, reproducibility and genuine research impact.
- Count patents primarily after **grant and successful commercialisation**, not merely filing.
- Introduce penalties for **retracted papers, fabricated research and unethical authorship**.
- Establish an **autonomous national research-integrity authority** with investigative powers.
- Replace crude cash-per-paper incentives with funding for laboratories, doctoral training, conferences and technology translation.
- Measure research through four lenses: **scholarly, technological, economic and societal impact**.
- Encourage academia-industry collaboration, start-ups, licensing, public-policy translation and locally relevant research.

Conclusion

- India possesses extraordinary intellectual capital and a vast demographic base, demonstrated by achievements ranging from **Chandrayaan to a rapidly expanding research ecosystem**.
- The next transformation, however, cannot be measured merely in papers filed or patents counted.
- **Quality, integrity, utilisation and societal impact must become the true currency of Indian research** if India is to evolve from a paper-producing nation into a genuine global knowledge power.

Source: TH

Daily Mains Practice Question

- [Q] **Critically examine the structural and institutional factors behind India's research paradox. Suggest measures to make India's research ecosystem more quality-driven, ethical and innovation-oriented.**



