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SELECTIVE TRANSPARENCY IN OPEN PEER REVIEW: A LARGE-SCALE POLICY AUDIT

TRANSPARÊNCIA SELETIVA NA AVALIAÇÃO ABERTA POR PARES: UMA AUDITORIA DE POLÍTICAS EM GRANDE ESCALA

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Nguyen Duy Phu*
*Lac Hong University, Dong Nai, Vietnam
nguyenduyphu@lhu.edu.vn

Phan Van Hoang Anh*
*Lac Hong University, Dong Nai, Vietnam
phanvanhoanganhlhu@gmail.com

Luong Thanh Tuan *
*Lac Hong University, Dong Nai, Vietnam
luongthanhtuanlhu@gmail.com

Nguyen Minh Minh*
*Lac Hong University, Dong Nai, Vietnam
nguyenminhminhlhu@gmail.com

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Abstract
Open peer review (OPR) is increasingly framed as a governance reform for improving transparency, accountability, and trust in scholarly publishing. Yet, evidence on how OPR is implemented in practice remains uneven across disciplines, publishers, and specific OPR components. This paper synthesizes findings from a recent large-scale audit of OPR implementation and re-expresses all results using a standardized reporting base of 1,000 journals and 10,000 sampled articles for interpretability and cross-study comparison. The evidence indicates that OPR adoption is geographically and institutionally concentrated—especially in Europe and among large commercial publishers—and is most prevalent in medicine and health sciences. Core OPR elements, such as mandatory reviewer identity disclosure and mandatory publication of peer review reports, remain uncommon and are typically implemented as optional features. A major implementation bottleneck is standardization: while most publicly available peer review reports provide multi-round process visibility, nearly all lack persistent identifiers (e.g., DOI), limiting citability and the possibility of reviewer credit. We translate these patterns into policy recommendations for journals, publishers,

Resumo
A revisão por pares aberta (RPA) é cada vez mais vista como uma reforma de governança para melhorar a transparência, a responsabilidade e a confiança na publicação acadêmica. No entanto, as evidências sobre como a RPA é implementada na prática ainda são desiguais entre as disciplinas, editoras e componentes específicos da RPA. Este artigo sintetiza as descobertas de uma recente auditoria em larga escala da implementação da RPA e reformula todos os resultados usando uma base de relatórios padronizada de 1.000 periódicos e 10.000 artigos amostrados para facilitar a interpretação e a comparação entre estudos. As evidências indicam que a adoção da RPA é geograficamente e institucionalmente concentrada — especialmente na Europa e entre grandes editoras comerciais — e é mais prevalente nas áreas de medicina e ciências da saúde. Elementos essenciais da RPA, como a divulgação obrigatória da identidade do revisor e a publicação obrigatória dos relatórios de revisão por pares, ainda são incomuns e geralmente implementados como recursos opcionais. Um dos principais obstáculos à implementação é a padronização: embora a maioria dos relatórios de revisão por pares disponíveis publicamente ofereça visibilidade

funders, and infrastructure providers, focusing on "default-open with safeguards," persistent identifiers for review objects, and incentive alignment to make open review sustainable.

Keywords: Open Peer Review. Scholarly Publishing Governance. Transparency. Metadata. Research Evaluation.

do processo em várias etapas, quase todos carecem de identificadores persistentes (por exemplo, DOI), o que limita a citabilidade e a possibilidade de reconhecimento do revisor. Traduzimos esses padrões em recomendações de políticas para periódicos, editoras, financiadores e provedores de infraestrutura, com foco em "abertura por padrão com salvaguardas", identificadores persistentes para objetos de revisão e alinhamento de incentivos para tornar a revisão aberta sustentável.

Palavras-chave: *Revisão por pares aberta. Governança da publicação acadêmica. Transparência. Metadados. Avaliação da pesquisa.*

1 INTRODUCTION

Peer review remains the foundational mechanism for quality control and the dominant source of legitimacy within scholarly publishing. Its primary function is multifaceted: it serves as a critical filter for submissions, enhances the scientific rigor and clarity of accepted manuscripts, and acts as a signal that the research has withstood rigorous disciplinary scrutiny (Tennant *et al*., 2017). However, the conventional, single-blind or double-blind peer review system faces persistent and growing critiques concerning its lack of transparency and inherent biases. Many editorial decisions remain challenging to audit externally, and the substantive rationales underpinning final outcomes are often inaccessible to both readers and, occasionally, the authors themselves (Smith, 2006).

1.1 The emergence and heterogeneity of open peer review

In response to calls for greater accountability, Open Peer Review (OPR) has emerged as an essential umbrella term for a range of policy and infrastructural reforms designed to increase transparency across one or more stages of the scholarly evaluation process. As synthesized in the literature, OPR is not a single model but a multi-dimensional concept that can encompass seven distinct elements: open identities (reviewer names disclosed), open reports (review content published), open interaction (direct discussion between actors), open participation (community involvement), open

commenting (post-publication feedback), open pre-review manuscripts, and decoupled review (evaluation published separately from the article) (Ross-Hellauer, 2017). Critically, journals seldom implement all these components; instead, they selectively combine elements, resulting in a highly heterogeneous array of "OPR regimes" (Wolfram *et al*., 2020).

1.2 Research rationale and Gap

The policy environment surrounding scholarly communication is rapidly evolving, driven by funder mandates and institutional imperatives for open science. Yet, the empirical evidence mapping the *de facto* implementation of OPR remains fragmented. Existing studies have largely been limited either to platform-specific case studies or analyses based on older, smaller, and potentially less representative journal samples. This gap necessitates an up-to-date, large-scale, and standardized mapping of OPR practices to inform contemporary publishing governance. Understanding which elements diffuse easily, which encounter infrastructural resistance, and which are strategically avoided is vital for developing effective policy interventions.

This paper addresses this need by presenting a policy-oriented synthesis of a recent, large-scale audit of OPR practices (Zhang *et al*., 2025). We standardize the quantitative findings to a robust reporting base of 1,000 journals and 10,000 sampled articles (10 articles per journal) to maximize readability, interpretability, and methodological comparability. The reliance on a fixed, within-journal sampling design is central to the audit's methodological strength, ensuring that the findings accurately reflect policy *implementation* and support direct comparison across journals with widely varying annual output volumes.

1.3 Research questions

This policy synthesis is structured around three core research questions:

RQ1: What are the institutional and geographical characteristics of the current OPR landscape, specifically concerning publisher type, geographic location, and disciplinary distribution?

RQ2: What is the prevalence of core OPR components, and where are the persistent governance gaps in terms of both structural adoption (mandatory vs. optional) and infrastructural support (citability)?

RQ3: Based on the observed patterns of selective openness, what specific policy levers can be recommended to journals, publishers, funders, and infrastructure providers to move OPR from optional transparency toward accountable and citable review?

2 BACKGROUND: OPR AS SELECTIVE OPENNESS

The adoption of Open Peer Review (OPR) is not merely a technical implementation but a phenomenon deeply embedded in the sociology of scholarly publishing, navigating the complex trade-offs between trust, risk, and reputation. To analyze the observed patterns of implementation, we employ the theoretical framework of Selective Openness.

A consistent empirical pattern across organizational and governance reforms aimed at increasing transparency is that actors tend toward selective adoption: they readily embrace elements that yield significant reputational benefits at a relatively low institutional cost, while systematically resisting measures that fundamentally redistribute risk, labor, or accountability (Moylan *et al*., 2014; Schmidt *et al*., 2018).

In the context of OPR, this gradient manifests clearly across the spectrum of "open" elements:

2.1 Peripheral vs. core transparency

We delineate OPR components into two categories based on their governance impact:

1. **Peripheral Transparency:** These elements focus on the administrative process, such as publishing submission, revision, and acceptance dates. Their implementation is comparatively low-risk, requiring minimal infrastructural change and imposing no immediate change upon the established incentives for authors or reviewers. Disclosing these temporal milestones signals efficiency and administrative fairness without fundamentally altering the confidentiality or anonymity of the evaluation content.

2. **Core Accountability:** These elements directly address the intellectual content and actor identities involved in the decision-making process. Publishing full, detailed review reports or mandating reviewer identity disclosure fundamentally alters the social contract of peer review. This level of transparency introduces perceived high-stakes risks, including potential retaliation against reviewers, concerns regarding the supply and quality of the reviewer pool, and increased editorial workload associated with moderation (Bravo *et al*., 2019; Haffar *et al*., 2019). The reluctance to fully adopt these core elements is thus an act of institutional self-preservation, protecting the existing labor supply mechanism.

2.2 The risk of overstated accountability

The structural outcome of selective openness is a discernible gradient: high uptake for peripheral, low-risk elements, and significantly lower uptake for core, high-stakes elements.

This gradient poses a critical challenge for scholarly governance. The use of a singular, undifferentiated "OPR label" risks masking substantial operational heterogeneity. Without clear specification regarding *which* elements have been implemented—and, crucially, whether those elements are mandatory or optional—claims of OPR adoption can severely overstate the level of real accountability delivered to the research community. This requires a policy-oriented audit that disaggregates the OPR regime into its constituent parts to accurately map where substantive transparency is achieved and where critical governance gaps persist (Ross-Hellauer, 2017).

3 METHODOLOGY AND STANDARDIZATION

This study’s policy synthesis is underpinned by a robust empirical foundation derived from a comprehensive audit of Open Peer Review practices. Establishing a precise methodology is crucial for ensuring the reliability and generalizability of the reported prevalence rates.

3.1 Evidence base and audit design

The analysis draws upon data originally generated by a large-scale, cross-sectional audit of OPR implementation conducted by Zhang *et al*. (2025). The strength of the original audit lies in its rigorous, pre-defined sampling strategy, which was designed explicitly to facilitate comparability across the heterogeneous landscape of scholarly publishing.

The key methodological features of the underlying audit include:

- **Systematic Journal Register:** The audit utilized a comprehensive registry of journals that explicitly state an OPR policy, minimizing selection bias towards single platforms or specific disciplines.
- **Fixed-Article Sampling Strategy:** Within each identified OPR journal, a fixed sample of **ten consecutive, recently published research articles** was selected within a defined publication window. This fixed-sample approach is critical, as it operationalizes the OPR policy by auditing its implementation *in practice*. This design choice ensures that journals with high publication volumes are not disproportionately represented in the evidence base and that the analysis reflects the mandatory vs. voluntary nature of OPR elements.
- **Variable Operationalization:** The audit meticulously defined seven core OPR components (e.g., Open Identity, Open Reports) and operationalized their measurement as dichotomous (implemented/not implemented) or categorical (mandatory/voluntary) variables at the journal level, and as structural features (e.g., DOI presence, process visibility) at the review report object level.

This rigorous design ensures that the data used for the policy synthesis reflects actual publishing outcomes rather than merely stated journal policy, providing a high degree of external validity.

3.2 Standardization rationale and reporting base

To overcome the inherent challenges in synthesizing data derived from varied journal scales and output volumes, this paper employs a **Standardized Reporting Base (SRB)**. The SRB provides a unified denominator for presenting complex prevalence rates,

enhancing clarity and facilitating the interpretation of relative adoption across different OPR components.

This analysis reports all findings using the SRB equivalent of **1,000 journals** and **10,000 sampled articles** (reflecting the fixed-sample ratio of 10 articles per journal):

- **Journal-Level Counts:** Statistics concerning macro-level characteristics (e.g., publisher concentration, disciplinary distribution, mandatory policy prevalence) are articulated as equivalent counts **per 1,000 journals**. This normalization allows policymakers and stakeholders to intuitively grasp the institutional penetration of OPR features.
- **Report-Level Features:** Micro-level indicators related to the physical attributes and metadata of the published review object itself (e.g., the presence of a DOI, the inclusion of multi-round versioning markers) are expressed as equivalent rates **per 10,000 public review reports**.

The strategic deployment of the SRB is a methodological necessity for achieving **uniform interpretability** and **direct comparability**. By anchoring all results to this fixed base, we minimize the cognitive load associated with interpreting disparate proportions and maximize the transparency of the reported landscape, thereby supporting robust cross-study evaluation

4 RESULTS

4.1 Portfolio infrastructure as a primary diffusion channel

A central finding of the audit is that the spread of open peer review (OPR) is not simply a matter of editorial preference at the single-journal level; it is strongly shaped by publisher portfolio capacity. The underlying dataset spans 154 publishing entities, yet the distribution is steeply skewed: three publishers account for roughly 56% of OPR journals when standardized to 1,000 journals.

On a 1,000-journal equivalent basis, the portfolio concentration is as follows:

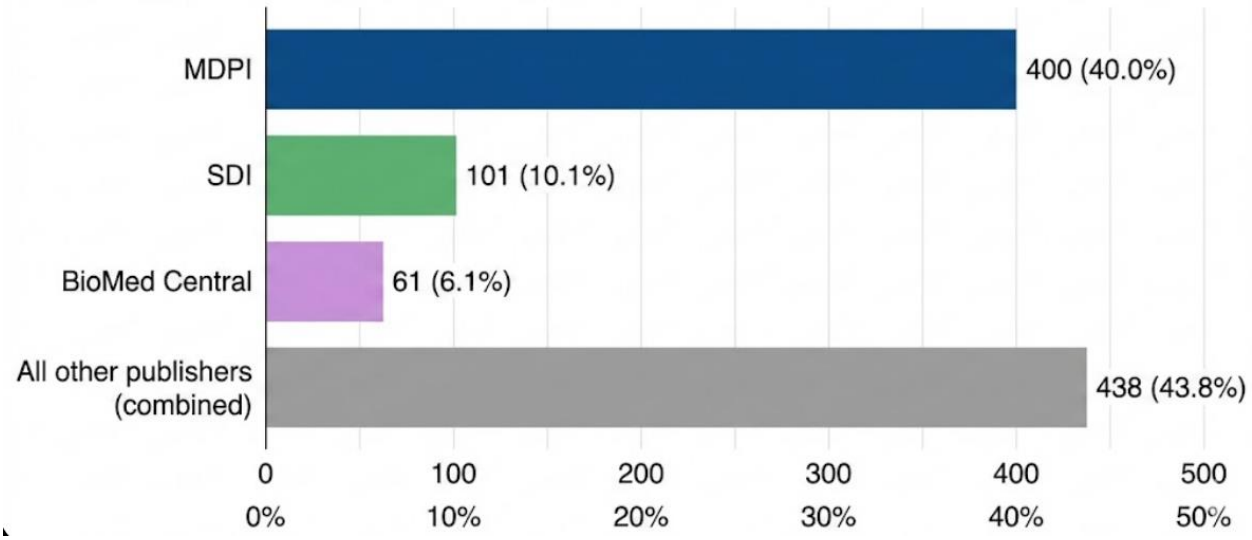
- MDPI: ~400 journals (40.0%);
- SDI: ~101 journals (10.1%);
- BioMed Central: ~61 journals (6.1%);
- All other publishers combined: ~438 journals (43.8%).

This pattern is consistent with a platform-economics interpretation: OPR implementation requires workflow tooling (submission systems that can display processing milestones, structured hosting for review reports, consistent article-page templating, moderation tools for comments, and persistent linking between manuscript versions and review rounds). Once this infrastructure exists, rolling out OPR "options" across a portfolio becomes a low marginal-cost change; for a smaller publisher running heterogeneous workflows, OPR can remain a bespoke and resource-intensive project.

The audit provides an illustrative example of how a single publisher can enable OPR across its entire portfolio, yet still observe widely varying uptake across journals—suggesting that infrastructure is necessary but not sufficient. Even under a uniform policy environment, some titles show full uptake in sampled articles while others show minimal uptake, highlighting that author and reviewer communities ultimately determine whether optional openness becomes routine practice.

Figure 1

Publisher concentration among OPR journals.



4.2 Institutional logics: commercial acceleration vs. scholarly caution

A second layer of concentration is institutional. Commercial publishers appear to treat OPR as part of a broader market positioning strategy—a way to signal speed, transparency, and editorial rigor—whereas society, university, and research-institute publishers tend to be more cautious in adopting newer review regimes.

This does not imply that scholarly publishers oppose transparency; rather, it reflects different constraints and priorities. Scholarly publishers often operate with tighter staffing, heavier dependence on volunteer labor, and stronger sensitivity to community norms (particularly in small fields where openness can increase social friction). In governance terms, this matters because it means OPR diffusion is currently publisher-led more than community-led: the entities most capable of scaling OPR are not necessarily those most embedded in disciplinary self-regulation.

4.3 Geographic clustering: Europe as a headquarters effect and a policy environment

Geographic clustering is pronounced when journals are classified by publisher location. Standardized to 1,000 journals, approximately:

- Switzerland: ~453 journals;
- United Kingdom: ~176 journals;
- Netherlands: ~59 journals;
- Rest of world: ~312 journals.

Two mechanisms plausibly contribute to this clustering. First, there is a headquarters effect: large OPR-active publishers are legally domiciled in European countries, which mechanically increases Europe's share in publisher-location coding. Second, the study frames Europe as an enabling ecosystem where open science norms are comparatively mature and where funders and academic communities emphasize openness in research inputs (data, methods) and outputs (including evaluation and review).

Policy implication. If OPR remains concentrated in a small number of commercial portfolios and a handful of publishing hubs, then system-level governance of peer review transparency becomes vulnerable to vendor choices. A practical policy response is to lower the "fixed costs" of OPR for smaller and non-commercial publishers—through shared platforms, interoperable plugins, and community infrastructure—so that transparency does not depend on being inside a large commercial portfolio.

4.4 Disciplinary distribution

4.4.1 Field imbalance: medicine dominates, agriculture lags

OPR adoption is uneven across disciplines. Using the seven-field grouping in the audit, the most represented area is Medicine & Health Sciences (~318 journals per 1,000), while Agriculture & Food Sciences is the least represented (~45 journals per 1,000).

The study attributes medicine's prominence to a distinctive combination of high accountability expectations and public-facing risk, where credibility and oversight are not merely academic concerns but social ones. In fast-moving public health contexts, more open forms of review are argued to facilitate quicker scientific exchange and scrutiny.

A related historical mechanism is path dependence: long-running OPR practice within major medical publishing platforms may have normalized openness as a legitimate mode of evaluation in that field.

Life sciences also appear to have an enabling ecosystem—multiple high-visibility journals provide OPR as a structured option—suggesting that disciplinary culture can stabilize openness once the practice becomes familiar rather than experimental.

4.4.2 Subfield cultures: the case of computing and post-publication interaction

The audit flags an additional pattern in Engineering & Technology, where computing-related communities show relatively high receptiveness to open commentary—consistent with cultural exposure to public technical discussion spaces such as GitHub and other open-source fora.

From a governance perspective, this matters because it suggests that "openness readiness" is not uniform even inside broad fields; policies and platform designs may need to be discipline-sensitive rather than universal.

4.4.3 OPR is not led by elite journals

Using the Journal Citation Indicator (JCI) as a field-normalized impact proxy, the study notes that most OPR journals sit at or below field average (JCI ≤ 1), implying that

OPR adoption is currently driven more by mid-tier and lower-tier outlets than by the very top of the prestige hierarchy.

This has two governance interpretations:

1. Legitimacy and differentiation: mid-tier journals may use OPR to signal process quality and transparency where brand power is weaker.
2. Risk management at the top: highly prestigious journals may be slower to mandate core openness because they face higher reputational costs from visible controversy, and because they rely on reviewers whose participation may be more elastic to perceived risk.

That said, the study documents movement among major journals toward stronger disclosure requirements (e.g., transitions from voluntary to mandatory open reports). In policy terms, this hints that top-tier resistance is not fixed; it may shift once norms stabilize and when policy defaults change from opt-in to opt-out.

4.4.4 The agriculture paradox

A notable exception is Agriculture & Food Sciences: the field has relatively few OPR journals, yet it is highlighted as the only field where higher-impact journals can outweigh lower-impact ones—an inversion that the authors suggest may reflect discipline characteristics or publisher strategy.

This is governance-relevant because it implies that "low volume" does not necessarily mean "low feasibility"; certain fields may be small but structurally well positioned for stronger openness norms.

4.5 Implementation of OPR components: a clear gradient

4.5.1 Selective openness as a risk–cost strategy

The prevalence of individual OPR elements shows a consistent gradient: journals more readily adopt low-risk, low-cost transparency (process signals) than high-stakes accountability (identity disclosure and citable review outputs). This aligns with the study's broader characterization of "peripheral openness" approaching consensus while "core openness" remains cautious.

4.5.2 Timeline transparency: fast diffusion and near-baseline status

Processing milestone disclosure (received–revised–accepted) is present in ~901 of 1,000 journals.

The study suggests this element is both low-controversy and increasingly treated as a baseline service: it directly addresses author concerns about time-to-decision and may strengthen a journal's competitive positioning.

Governance reading: this is transparency without redistribution of social risk—no one is personally exposed, yet the journal becomes more accountable for speed.

4.5.3 Editor identity disclosure: accountability at the gatekeeping layer

Handling editor identity is disclosed in ~725 per 1,000 journals, and a smaller subset enforces it consistently across papers (the study reports a mandatory subgroup).

The rationale is institutional rather than interpersonal: editors shape reviewer selection and the interpretation of reports, so naming editors creates an oversight mechanism over the "gatekeeping" function.

Governance reading: editor disclosure is a "manageable risk" intervention—stronger than timeline openness, but typically less socially fraught than naming reviewers.

4.5.4 Reviewer identity: high perceived risk and low mandatory uptake

Only ~125 per 1,000 journals mandate reviewer identity disclosure; most provide it as an option.

Critically, optionality often results in non-participation: the study reports that 39.24% of journals show no reviewer signatures in the sampled set, despite offering open options.

This is a key governance point: a voluntary regime can preserve reviewer autonomy, but it also tends to produce uneven transparency—including "all anonymous" outcomes that look indistinguishable from conventional peer review.

The audit also identifies systematic differences by publisher type: mandatory reviewer identity is disproportionately located in commercial publishing environments,

whereas societies, universities, and institutes tend to prefer voluntary schemes—an institutional risk-preference signature.

Policy implication: if reviewer identity disclosure is considered a public good (improving accountability), then relying on opt-in decisions alone is unlikely to achieve broad uptake without either (a) incentives that offset perceived risk or (b) community safeguards that reduce the costs of disclosure.

4.5.5 Open commenting: participation requires moderation capacity

Public commenting is enabled in ~473 of 1,000 journals, while ~527 of 1,000 do not support it.

Where it exists, the audit describes approaches that separate commenting from editorial decisions or archive comments in ways that preserve the scholarly record.

The fact that a majority still avoid commenting is consistent with the practical governance burden: moderation demands time, clear community norms, and procedures for privacy and abuse prevention.

Governance reading: open commenting is not only a transparency choice but a community management commitment.

4.5.6 Open reports: mandatory openness remains limited, and voluntary often under-delivers

Open peer review reports show a similar pattern to identity disclosure. The audit reports 24.84% mandatory and 75.16% voluntary regimes.

The implementation gap is concentrated inside the voluntary category: among voluntary-mode journals, 38.61% show no publicly available review reports in the sampled set—suggesting that optionality frequently translates into "policy without practice."

Scaled to a 1,000-journal baseline, this corresponds to roughly 290 journals whose declared openness is not realized in observed articles.

The study also documents striking within-publisher heterogeneity, indicating that even with common infrastructure, uptake can vary substantially by title—again pointing to the importance of author and reviewer willingness in optional regimes.

4.5.7 OPR elements are bundled, not independent

A particularly useful insight for policy design is that OPR components are often adopted as bundles rather than as isolated features. The study finds a strong association between open reports and signed reviews (Cramer's V = 0.526) and notes that, within journals using voluntary reviewer signing, 83.7% align this with voluntary open reports.

Governance implication: journals appear to treat identity disclosure and report disclosure as mutually reinforcing (reports gain credibility when signed; signing has clearer meaning when connected to a visible report). Policies that target only one element may therefore encounter resistance unless accompanied by a coherent package.

Table 1

Measurement framework used in the audit (as applied in standardized reporting)

Construct	**Indicator**	**Operational definition (audit logic)**
Publisher concentration	Publisher portfolio share	Share of journals by publisher
Geographic clustering	Publisher country/region	Country/region of publisher
Discipline	Broad field (7 categories)	Journal field grouping
Timeline transparency	Received–revised–accepted disclosed	Dates visible on article page/PDF
Open editor identity	Handling editor named	Editor identity visible
Open reviewer identity	Reviewer identity disclosed	Mandatory vs voluntary regime
Open commenting	Comment function enabled	Presence of an open comment module
Open reports	Review reports public	Mandatory vs voluntary regime
Report traceability	DOI for review reports	Review report has its own DOI
Report process visibility	Rounds/versions shown	Round/version markers present
Report access mode	Web/attachment/hybrid	Presentation format

Table 2

Prevalence of OPR elements (standardized to 1,000 journals) and governance interpretation

OPR element	**Prevalence (from audit)**	**1,000-journal equivalent count**	**Governance interpretation**
Processing milestones disclosed	90.10% Investigation and analysis of t…	901	Low-risk transparency; likely becoming baseline
Handling editor identity disclosed	72.50% Investigation and analysis of t…	725	Accountability at editorial layer with manageable risk
Reviewer identity mandatory	12.5% Investigation and analysis of t…	125	High perceived risk; rarely required

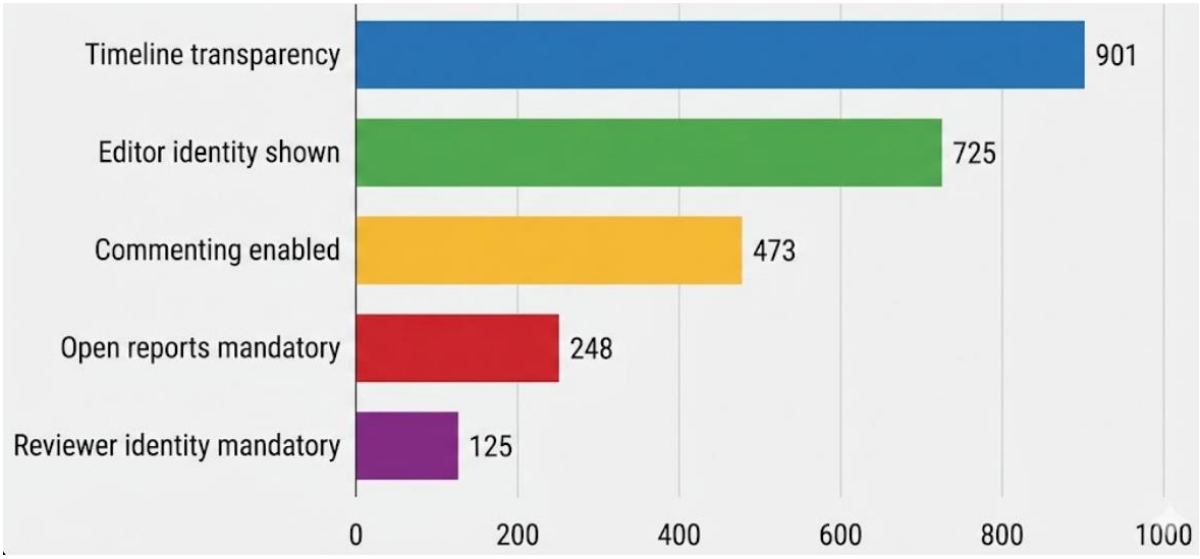
OPR element	Prevalence (from audit)	1,000-journal equivalent count	Governance interpretation
Commenting enabled	47.34% Investigation and analysis of t…	473	Requires moderation capacity and community norms
Peer review reports mandatory	24.84% Investigation and analysis of t…	248	Core openness remains limited
Peer review reports voluntary	75.16% Investigation and analysis of t…	752	Optionality often reduces uptake
Voluntary journals with zero open reports (in sample)	38.61% of voluntary journals	~290 (of 752)	Optional regimes frequently under-deliver in practice

4.6 The standardization Gap in review reports

4.6.1 Visibility is strong; traceability is weak

Figure 2

Selective openness profile across OPR components



When review reports are published, the audit suggests journals are generally willing to make the process legible: 96.04% of public reports include revision rounds/version markers.

However, the same reports typically lack the infrastructure needed for recognition and reuse: 97.95% of reports do not have an independent DOI.

The study frames this as a "field defect" because it undermines the ability to cite, track, and credit review contributions—despite Crossref having proposed metadata standards to support DOIs for peer review artifacts.

A policy-relevant interpretation is that the system has achieved transparency of dialogue without achieving formal recognition of labor. The study explicitly describes the resulting disconnect: the review "process" becomes visible, yet the review "contribution" remains hard to acknowledge as a scholarly output.

This gap likely weakens incentives for reviewers to participate in more open regimes, especially where reputational exposure is already a concern.

4.6.2 Presentation formats shape accessibility and reuse

Standardized to 10,000 public review reports, the dominant access mode is web presentation:

- Webpage: 7,610 (76.10%);
- Attachment: 1,613 (16.13%);
- Hybrid (web + attachment): 777 (7.77%).

Format is not cosmetic; it affects preservation, machine readability, and user cost. The study notes that hybrid modes can facilitate centralized record management while lowering readers' time and technical barriers—yet only a minority of journals use them.

4.6.3 Policy directions emerging from the standardization gap

From a policy standpoint, the standardization deficit is actionable because it does not necessarily require changing social norms first; it requires workflow defaults and metadata implementation. The study's evidence supports three practical directions:

1. DOI assignment for review reports as a default artifact rather than an exception.
2. Structured metadata alignment (e.g., Crossref-compatible deposits) so that reports can be indexed, credited, and analyzed.
3. Readable, low-friction access formats (including hybrid) to reduce participation costs for readers and downstream users.

5 DISCUSSION: POLICY IMPLICATIONS

The empirical findings from the 1,000-journal standardized audit reveal a complex and often contradictory landscape of Open Peer Review (OPR). While the rhetoric of "open science" implies a comprehensive shift toward transparency, the data suggests a fragmented reality. This section interprets these patterns through the lens of policy governance, highlighting the structural barriers that prevent OPR from evolving from a niche experiment into a systemic norm.

5.1 The "OPR Label" Hides a Two-Speed System

The standardized data exposes a distinct bifurcation in how openness is operationalized. We observe a "two-speed" system where low-risk transparency features—such as the disclosure of submission timelines and editorial identities—have achieved widespread diffusion, likely because they signal administrative efficiency without disrupting the traditional social dynamics of review. In contrast, core accountability measures that expose the intellectual content of evaluation (mandatory open reports) or the actors involved (mandatory open identities) remain stalled at low adoption levels.

This gradient presents a governance risk: the conflation of "administrative openness" with "intellectual accountability." If policymakers and indexers accept any single transparency element as sufficient for the "Open Peer Review" label, they unintentionally incentivize a form of "open-washing"—where journals adopt low-cost signaling mechanisms while avoiding the more challenging, substantive reforms that drive research integrity (Schmidt *et al*., 2018). Effective policy must therefore distinguish between *process transparency* (dates, names) and *substantive transparency* (content of reports), recognizing that the former does not automatically guarantee the latter.

5.2 Optionality as a structural brake

A defining feature of the current OPR landscape is the prevalence of voluntary or "opt-in" models, particularly regarding the publication of review reports. While optionality is often defended as a necessary flexibility to accommodate diverse author

and reviewer comfort levels, the audit data suggests it functions as a structural brake on adoption. The finding that a significant proportion of "voluntary" journals yield zero open reports in practice indicates that status quo bias and perceived social risk stifle participation when the default setting is closed.

Consequently, "optional openness" should be viewed not as a stable governance endpoint, but as a transitional mechanism that has arguably reached its limit. Without a shift in the "choice architecture"—specifically moving from opt-in to opt-out models—the cultural inertia of anonymous, closed review will continue to dominate. If the governance goal is reliable accountability, optional regimes are structurally incapable of delivering it at scale.

5.3 The critical bottleneck: citability and credit

Perhaps the most actionable finding is the "standardization gap." While the audit confirms that peer review is becoming more *visible* (readable on websites), it remains *bibliometrically invisible*. With nearly 98% of public reports lacking a persistent identifier (DOI), these outputs are effectively disconnected from the scholarly record (Cantor & Gero, 2015).

This infrastructure deficit creates a severe misalignment of incentives. We ask reviewers to perform the labor of open review—exposing themselves to public scrutiny—without providing the currency of the academic prestige economy: citability. A review report without a DOI cannot be easily tracked in citation databases, added to ORCID profiles with verified status, or included in institutional research assessments. Until the infrastructure for credit (DOIs, metadata) catches up with the platform for visibility (web display), OPR will remain an altruistic activity rather than a professional asset. As argued by Beck *et al*. (2018), sustainable OPR requires infrastructure that transforms reviews into first-class research objects.

5.4 Strategic recommendations for stakeholders

To bridge the gap between the promise of OPR and its current implementation, we propose a multi-stakeholder policy framework:

- **For Publishers: From "Opt-in" to "Default-Open."** Publishers should transition from voluntary systems to "open by default" models for peer review reports. While "opt-out" mechanisms must remain to protect sensitive cases (e.g., conflicts of interest or vulnerable authors), shifting the default setting utilizes behavioral nudges to normalize transparency. Furthermore, publishers must integrate DOI assignment into standard production workflows, ensuring every published report is as citable as the article it assesses.
- **For Funders and Institutions: Valuing Process over Venue.** Research assessment reform (e.g., CoARA, DORA) must move beyond journal-level metrics to assess individual contributions. Funders should explicitly recognize public peer review reports—validated via DOIs—as distinct, citable research outputs in grant applications and tenure dossiers (O'Carroll *et al*., 2017). This legitimizes peer review as a scholarly "service" equivalent to other forms of publication.
- **For Infrastructure Providers: Reducing Transaction Costs.** The current cost and technical complexity of registering DOIs for review reports remain prohibitive for smaller, independent journals. Infrastructure organizations (e.g., Crossref, DataCite) should develop streamlined, low-cost workflows specifically designed for peer review metadata. Additionally, ensuring interoperability standards (linking Article DOI, Review DOI, and Author ORCID) is essential to create a machine-readable graph of research trust (Hendricks *et al*., 2020).

6 CONCLUSION

This study provides a comprehensive audit of the Open Peer Review (OPR) landscape through a standardized 1,000-journal and 10,000-article framework, offering robust empirical evidence that contradicts the notion of OPR as a monolithic or uniform practice. The findings reveal a system defined by structural stratification and selective openness.

First, OPR adoption is geographically and institutionally uneven. It is heavily concentrated within the European policy sphere and driven disproportionately by a small number of large commercial publishers, particularly in the medical and health sciences. This concentration suggests that OPR diffusion is currently a function of platform

infrastructure and publisher strategy rather than a universal disciplinary norm. Consequently, there is a risk of a "two-speed" scholarly ecosystem where transparency becomes a premium feature of well-resourced platforms, leaving smaller or society-based journals behind.

Second, the audit illuminates a clear transparency gradient. Publishers readily adopt "low-risk" transparency features, such as the disclosure of processing timelines and editor identities, which signal efficiency without fundamentally altering the social contract of peer review. Conversely, "core" accountability measures—specifically mandatory open reports and open reviewer identities—remain rare and are largely relegated to optional features. The data on voluntary uptake indicates that optionality functions as a structural brake; when transparency is a choice rather than a default, participation remains suboptimal. This confirms that "opt-in" regimes are insufficient for establishing systemic accountability.

Third, and perhaps most critically, this paper identifies a significant infrastructure gap regarding the standardization and credit of review work. While the visibility of the peer review process has improved, its citability has not. The near-total absence of persistent identifiers (DOIs) for review reports renders this intellectual labor "bibliometrically invisible," preventing it from being effectively tracked, cited, or rewarded in research evaluations. This disconnect undermines the sustainability of OPR by failing to align reviewer incentives with the demand for transparency.

Policy Implications Moving forward, the governance of OPR must shift from passive visibility to active integration into the scholarly record. We propose three strategic pivots for stakeholders:

1. From Optional to Default: Journals and publishers should transition review reports to a "default-open" model with clear opt-out safeguards, overcoming the inertia of voluntary participation.
2. From Webpage to Record: Infrastructure providers and publishers must prioritize the assignment of DOIs and standardized metadata to review reports, treating them as first-class research objects rather than supplementary web content.
3. From Ideology to Incentives: Funders and institutions must update evaluation frameworks to recognize open reviews as verifiable scholarly contributions.

Ultimately, transparency without standardization limits the utility of open science. By addressing these structural bottlenecks, the scholarly community can transform Open

Peer Review from a fragmented collection of experiments into a reliable, accountable, and credit-yielding pillar of modern science communication.

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Authors' Contribution

All authors contributed equally to the development of this article.

Data availability

All datasets relevant to this study's findings are fully available within the article.

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