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Challenges in the Peer-review process

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Abstract: *The peer-review process, considered as the backbone of academic publishing, faces many challenges that undermine its reliability and effectiveness. These issues affect the accuracy of published research and contribute to frustration among authors and reviewers. This study delves into these challenges through qualitative interviews with 10 academic stakeholders, including researchers, reviewers, editors, and the editor-in-chief. The primary focus of the research is to uncover the key issues impacting the peer-review system and to propose practical solutions for addressing them. Using thematic analysis, the study identifies several persistent issues, including the overwhelming workload faced by reviewers, delays in providing feedback, and the influence of personal biases on review outcomes. These factors lead to inconsistent and sometimes unreliable evaluations of research, which can hinder the publication process. Moreover, the lack of standardised review criteria further exacerbates the situation, with different reviewers applying varying standards to the same manuscript. Such inconsistencies compromise the quality and speed of the review process, resulting in significant challenges for both authors and reviewers. The paper proposes several solutions to improve the peer-review system in light of these findings. By addressing these issues, the study contributes to ongoing efforts to enhance the effectiveness of the peer-review system and ensure its continued relevance in the rapidly evolving landscape of academic publishing.*

Keywords: *Peer review process, publishing challenges, bias, transparency, AI*

Introduction

The peer review process is the cornerstone of academic publishing, ensuring the reliability, accuracy, and quality of scholarly work (Hanafizadeh & Shaikh, 2021; Drozdz & Ladomery, 2024). Scientific research integrity is maintained by applying expert evaluation to the research, which helps preserve the validity of scientific findings and practices. These elementary procedures prove difficult to understand. Researchers avoid submitting their papers to academic journals because of concerns about assessment bias, with delays in publication and inadequate reviewer availability and diminished journal transparency (Horta and Jung, 2024). The credibility and efficiency of academic publishing demand immediate solutions to these existing challenges. The peer review process is coming under rising criticism from researchers, while journal editors and policymakers show huge concerns (Lauria, 2023). Issues such as inconsistent review standards, conflicts of interest, and growing burden on reviewers have become more prominent (Jerrim & Vries, 2023). Furthermore, the situation worsens due to two factors. First, there has been a rapid expansion in academic publishing. Second, questionable and predatory journals have emerged. Although peer review is still widely regarded as the gold standard for evaluating research quality, its imperfections are becoming more evident (Äijö et al., 2024). Reports of

biased decisions, lack of accountability, and gatekeeping practices that strangle new or unconventional ideas have surfaced, prompting calls for greater transparency and the exploration of alternative review models (Hosseini & Horbach, 2023).

One of the most persistent challenges in the peer-review process is the increasing pressure on reviewers (Drozdz & Ladomery, 2024). With the ongoing rise in academic publications, journals struggle to find qualified experts who can promptly evaluate manuscripts. Since most reviewers work voluntarily while managing their research responsibilities, heavy workloads can compromise the quality of their assessments (Kadaifci et al., 2025). Furthermore, the lack of standardised training for reviewers contributes to inconsistencies in feedback. Some researchers experience imprecise critical assessments in peer review but researchers also encounter strict reviews that threaten the fairness as well as the effectiveness of the system (Bell et al., 2024). In peer review processes bias forms a pivotal obstacle that must be addressed (El-Guebaly et al., 2023). Several studies by Si et al. (2023), Schmaling & Gallo (2023) and Prakash et al. (2024) show how review results depend on author gender alongside their institutional bonds and geographic position and recognized academic profile. The review process creates systematic disadvantages that disproportionately harm young researchers together with scholars from minority backgrounds and researchers at smaller institutions. Certain academic journals have established a double-blind review process to prevent bias by keeping authors and reviewers unidentified (Kern-Goldberger et al., 2022). However, even within these systems, reviewers may infer an author's identity based on writing style, research focus, or citations, potentially undermining the fairness of the process.

The lack of transparency, along with insufficient accountability levels, represent major obstacles in peer-review procedures (Wicherts, 2016). The confidentiality of reviewer identities through traditional approaches makes it difficult to validate review fairness and objectivity. The open peer review approach serves as a suggested solution according to research groups since it provides public access to both reviewer identities and their assessment findings (Weaver et al., 2022). Open peer review implements clear frameworks with answerable processes that enable reviewers to deliver their assessments. However, academic experts have expressed concerns regarding open review methods, as authors participating in competitions may avoid authentic feedback to shield themselves from potential backlash and professional consequences that could harm their careers. Fraudulent and unethical behavior within peer review has become a significant issue undermining publishing standards in scientific fields. In some cases, authors or editors have manipulated reviews to obtain favourable evaluations. Additionally, the rise of predatory journals that publish papers without proper peer review in exchange for fees has further aggravated this problem (Prakash et al., 2022). These journals exploit the pressure on researchers to publish extensively, often prioritising quantity over quality. To address these issues, stronger oversight, enhanced reviewer accountability, and increased awareness of predatory practices are essential.

This study analyzed these issues through interviews with editors of journals and peer reviewers and scientific researchers. Research participants from peer review programs provided insights about their main worries together with the systemic issues that reduce their operational effectiveness. The study collected participant feedback through interviews

to find possible solutions to address improvement needs. This study seeks to build thorough knowledge about peer review system limitations and advantages for creating efficient solutions. Furthermore, this study offers recommendations for refining the peer-review process. As academic publishing continues to grow, addressing these concerns is vital for maintaining the trust and credibility of the scholarly community. By focusing on the perspectives of those directly involved in peer reviews, this research seeks to provide insights that can enhance the evaluation and dissemination of research.

Summary of Recent Research Studies

The peer review system encounters obstacles because of unethical practices, along with insufficient transparency and impartiality (Kadaifci et al., 2025). The problems can be resolved by implementing stakeholder incentives alongside increased stakeholder participation. The use of AI tools threatens peer review integrity, so transparent protocols must be developed to detect and correct violations (Mollaki, 2024). He further asserted that journals should create publishing policies and establish transparent procedures that enable them to investigate claims of non-compliance regarding the use of AI tools, such as ChatGPT, in the peer review process and disqualify reviewers who breach these policies to safeguard the integrity of the peer review system. Drozdz and Ladomery (2024) conducted a comprehensive review of peer reviewing, examining its historical development while assessing its modern operations and challenges, as well as outlining potential future development opportunities. The authors advocate for immediate action to enhance both quality and efficiency within peer review due to recent research and publication developments, which pose difficulties for review processes. The challenges and conflicts facing the peer review process in medical science include the impact of preprints, reliability of reviewer blinding, criteria for reviewer selection, incentivization of reviewers, and the publication of peer reviewer comments (Kusumoto et al., 2022). Waltman et al. (2023) introduced a framework comprising four schools of thought that offer varied perspectives on the principal issues of the peer review system. The proposed innovations, namely, Quality & Reproducibility, Democracy & Transparency, Equity & Inclusion, and Efficiency & Incentives, partially complement each other while exhibiting significant conflicts. Buser et al. (2023) suggest an online peer-reviewed training program aimed at enhancing the quality of peer reviews and mitigating disparities in publishing, emphasising its efficacy in developing peer review and writing competencies is required. Bancroft et al. (2022) reveal that journals should explore methods to investigate bias, diversify editorial boards, and implement triple-blind peer review to enhance equity in the peer review process.

Peer review is essential for maintaining research quality and integrity; however, issues arise in guaranteeing continuous, high-quality peer reviews (Smith & Jackson, 2022). The peer review process in academic journals is currently in crisis. This situation represents an evolutionary step in research development, and peer review will continue to play a crucial role in the scientific method despite its deficiencies (Horta & Jung, 2024). The peer review of manuscripts is regarded as a crucial activity for promoting the scientific dissemination of high-quality and reliable publications. However, peer reviewers receive scant incentives, despite the substantial income earned for publications via the peer review

process (Moher & Vieira Armond, 2025). High-quality academic research is crucial for advancing knowledge, problem-solving, and facilitating decision-making; however, generative AI techniques are increasingly essential in academic research and peer review (Salman et al., 2025).

Table1: Previous studies related to the peer-review process

Source	Title	Journal Name	Key Findings
Bancroft et al. (2022)	Promoting equity in the peer review process of journal publication.	Science Education	The study discovered that while there is a good mix of genders in the directors and editorial boards of the journals, they are primarily focused on North America, and White people are over-represented.
Bell et al. (2024)	Scholarly publishing, boundary processes, and the problem of fake peer reviews	Science, Technology, & Human Values	Continual work is needed to distinguish between legitimate and false reviews, and the concept has reaffirmed science-society boundaries in a time when they have been questioned.
Hidouri et al. (2024)	Key guidelines for responding to reviewers	F1000Research	The investigation believes that essential criteria encompass comprehensively grasping and prioritising input, upholding professionalism, and methodically addressing each remark. Authors may escalate the matter to the editor in instances of substantial dispute or misinterpretation. Developing a meticulously structured and scholarly "response to reviews" in conjunction with the amended paper can significantly enhance the probability of acceptance.
Kadaifci et al. (2025)	Fundamental problems in the peer-review process and stakeholders' perceptions of potential suggestions for improvement	Learned Publishing	The findings indicated that unethical activity was prevalent, with editors and veteran reviewers encountering it more often. Women and scholars from Türkiye were more prone to encounter ethical infractions and regarded them as more ethically serious. Incentives and stakeholder engagement were regarded as methods to improve the quality and objectivity of peer review.
Moher, D., & Vieira Armond, A. C. (2025)	Publisher and journal reciprocity for peer review: Not so much	Accountability in Research	The findings suggests that minimal, if any, of the revenue is distributed directly or indirectly to peer reviewers. Given the minimal reciprocity in the peer review process, journals and their publishers must foster and implement greater reciprocity in a system that predominantly advantages them.
Mollaki (2024)	Death of a reviewer or death of peer review integrity? The	Research Ethics	The findngs of the research emphasises the absence of policies regarding the utilisation of AI tools in the peer review

	challenges of using AI tools in peer reviewing and the need to go beyond publishing policies		process and contends that it is essential to establish transparent procedures that allow journals to examine allegations of non-compliance and make decisions that safeguard the integrity of the peer review system.
Papadopoulos et al. (2017)	Technology-enhanced peer review: Benefits and implications of providing multiple reviews.	Journal of Educational Technology & Society	The results indicated that the two groups were comparable in all respects, implying that the absence of peer evaluations can be effectively mitigated by alternative scaffolding methods, such as a scripted self-review process.
Salman et al. (2025)	Systematic analysis of generative AI tools integration in academic research and peer review	Online Journal of Communication and Media Technologies	The findings offer a comprehensive insight into the existing application of Generative artificial intelligence (GAI) within the academic research workflow and peer review process, encompassing issues, limitations, and proactive strategies for more effective utilisation of these tools.
Smith et al. (2023)	Peer review perpetuates barriers for historically excluded groups	Nature Ecology & Evolution	The investigation revealed a paucity of data assessing the usefulness of measures beyond the reduction of gender bias via double-blind reviews or the diversification of reviewer and editorial boards. Notwithstanding evidence of disparities in review outcomes related to author demographics, a limited number of journals have instituted policies aimed at reducing bias; specifically, only 15.9% of journals employed double-blind review, and a mere 2.03% provided reviewer guidelines addressing social justice concerns.
Tripathi & Thakar, (2024)	Ethical use of AI for academic integrity: Preventing plagiarism and cheating	Ethical Frameworks in Special Education: A Guide for Researchers	Research indicates that AI techniques improve plagiarism detection and examination security via real-time surveillance. Findings suggest that although AI enhances academic integrity, ethical issues like privacy and bias require meticulous oversight.

Methodology

The primary data was gathered through semi-structured interviews done by telephone with 10 participants (five peer reviewers, three journal editors, and two chief editors) of Nepalese journals. This study utilised the non-probability sampling technique known as snowball sampling. A primary justification for snowball sampling is recruiting participants using social networks, mainly through contacts of existing participants (Baltar

& Brunet, 2012). The researchers conducted thematic analysis utilising note cards and hand coding (Smith et al., 2023). Researchers systematically classified the data by analysing it, assigning codes and themes, and evaluating the outcomes (Thomas & Harden, 2008; Naeem et al., 2023). This method is appropriate for small sample sizes. Sax et al. (2022) have delineated hand coding techniques, such as cut-and-paste and note cards. The interview questions addressed five domains, including acquaintance with the peer review process and its influence on standards. What are the main challenges identified in the peer-review system? What strategies can we implement to uphold the Quality and Fairness of Reviews? How do technology and artificial intelligence influence the peer review process, and how do time and workload pressure influence this process?

Qualitative thematic analysis

The primary themes identified four groups: (a) Structural and Operational Challenges, (b) Quality and Fairness of Review, (c) Ethical and Transparency Issues, and (d) Technological and Future-Oriented Perspectives.

Structural and Operational Challenges

Structural and operational challenges in the peer-review process are often cited as a core issue undermining the system's effectiveness and credibility (Bell et al., 2024). A growing volume of submissions, lack of formal reviewer training, and time constraints have led to inconsistencies in review quality and long turnaround times (Severin & Chataway, 2021). Reviewers are frequently overburdened with academic responsibilities, making it difficult to devote sufficient time to thorough manuscript evaluations. One persistent challenge is the absence of standardised criteria across journals, which can confuse authors and reviewers and result in vague or contradictory feedback (Smith, 2006). Without clear guidelines or checklists, reviewers may focus on irrelevant aspects or overlook key methodological issues. This is further supported by participant insights, such as:

"I sometimes get review requests for things I only slightly know about. I do my best, but it's hard to know what the editor wants without explicit instructions.
(Participant 2)

AND

"Time is the most important thing for me. I want to give each paper the time and attention it needs, but between teaching, studying, and office work, I sometimes rush through the review. That is not good for anyone."
(Participant 4)

These operational barriers affect the quality of reviews and discourage potential reviewers from participating in the process. Several journals are introducing reviewer incentive programs and more evident review templates to address these issues (Waltman et al., 2023), but the widespread adoption of these is limited.

Quality and Fairness of Review

The interviews highlighted quality and fairness concerns related to peer review as the primary issue discussed by participants. Experts participating in the peer review system expressed dissatisfaction with general assessments, which were not constructive and paid

insufficient attention to the substance of submitted manuscripts (Lim & Bowman, 2024). The reviewers provided ambiguous and conflicting feedback, which created problems for writers who needed clarity to address their papers effectively (Hidouri et al., 2024). The interviewee highlighted how personal biases, disciplinary preferences, or unconscious favoritism towards prestigious institutions could demoralise the review process (Kulal et al., 2025). This was incredibly challenging for early-career researchers and scholars from developing countries who felt their work was judged more harshly. Editors, too, pointed to challenges in securing qualified reviewers who were both timely and constructive in their assessments.

Such concerns were similar in the interviews:

"In some cases, I think reviewers do not read the work. These people's comments are so general that it seems like they scanned the outline and declared what they believed.
(Participant 3)

"When I write from South Asia, I sometimes feel like we don't get the same kind of trust that Western authors do. Some of the review's tone is quite arrogant.
(Participant 7)

AND

"Two reviewers gave extremely different opinions in one review; one asked for more theory, and the other said there was already too much theory." It is frustrating and challenging to focus on.
(Participant 9)

Participants recommended structured reviewer training, more straightforward editorial guidelines, and greater recognition for high-quality reviews as potential solutions to enhance fairness and consistency (Resnik & Elmore, 2016).

Ethical and Transparency Issues

Another recurring concern was the peer review system's lack of transparency and ethical standards (Horbach & Halffman, 2018). Several participants raised issues about conflicts of interest, such as reviewers evaluating the work of close collaborators or competitors, often without proper disclosure (Resnik & Elmore, 2018). A main criticism against the blind review system emerged from its susceptibility to unethical conduct although its purpose was to protect against prejudice. Researchers expressed concerns that their work ideas could face unauthorized sharing or delays through reviewers who shared the same research areas. The editorial operations faced criticism because important decisions made by editors often lacked proper explanation or justification which weakened editorial trust (Teixeira da Silva & Dobránszki, 2017). Authors strongly preferred transparent feedback and openness in how decisions were reached.

This was illustrated in the interviews:

"I once submitted a paper and got rejected in three days without any reviewer comments. It felt like an editorial desk rejection, but no clarity was provided."
(Participant 5)

AND

"Sometimes I believed the reviewer was working on a similar topic." They released something very similar the following year. Unfortunately, it is not pleasant.

(Participant 8)

According to Craig et al. (2022), most participants supported the implementation of open peer review along with transparent editorial processes and systems to track and report unethical practices. All participants recognized these measures as vital to developing trust and ethical integrity in academic publications.

Technological and Future-Oriented Perspectives

The possible applications of technology in peer review gained universal recognition by study participants who also revealed positive and negative aspects (Papadopoulos et al., 2017). Multiple interview participants held positive views about employing artificial intelligence (AI) systems to carry out functions such as plagiarism evaluation and manuscript filtering, in addition to emotional review assessment (Kadri et al., 2024). Reviewers received substantial benefits from these automated tools because they made the evaluation process more efficient. The implementation of automated systems during peer review generated positive and negative reactions from scientific editors and publishing staff. Participants expressed concerns about putting too much trust in algorithms since they do not adequately capture the intricacies of evaluating theoretical work and innovative methods (Mollaki, 2024). They also worried about biases embedded within AI models that might replicate existing inequalities. Cross-journal reviewer pools as an innovative idea were discussed as promising developments (Bravo et al., 2019). These approaches could reduce redundancy, incentivise quality feedback, and promote transparency in reviewer contributions.

This theme was reflected in participant voices:

"Even though AI can help check for copying and other basic writing mistakes, it can't tell if a paper adds anything useful to the field of theory. That still needs a person to touch it.

(Participant 1)

"In the future, I think we need a system where one review can travel with the manuscript across journals. It would save time and reduce redundancy."

(Participant 6)

AND

"We can use technology to credit reviewers properly; something like a review scorecard or verified record could motivate reviewers to put in genuine effort." *(Participant 10)*

Participants believed technology could enhance efficiency but only if implemented with clear ethical guidelines, strong editorial oversight, and continued human involvement (Stahl & Eke, 2024).

Discussion

This research analyzed critical peer review challenges by conducting interviews and thematic data analysis which produced four major study categories: operating system problems alongside evaluation processes along with ethical transparency issues and technological development and future frameworks. The study both verifies previous peer review research and supplies nuanced details about academics and their editor and

reviewer peers who handle complex modern scholarly publication procedures. The data analysis revealed structural rigidity together with operational inefficiency as the primary themes in today's peer review ecosystem. The study revealed three persistent issues among participants which included lengthy review delays and limited availability of swift qualified reviewers along with inadequate review reward systems within universities. These insights align with findings from Kadaifci et al. (2025) and Rodriguez et al. (2021), who noted that the voluntary nature of peer reviewing, combined with increasing publication pressure, has resulted in reviewer fatigue and prolonged turnaround times. Additionally, dependence on a limited pool of reviewers often leads to the repetitive overuse of specific experts, compromising the breadth and diversity of perspectives. This operational bottleneck ultimately affects the publication pipeline and discourages the timely dissemination of knowledge, especially for early-career researchers or those working on emerging interdisciplinary topics (Äijö et al., 2024). There is a clear need for structural innovations such as rotating reviewer databases, shared reviewer networks among journals, and institutional recognition of peer review as academic labor.

The quality alongside fairness issues and assessment consistency of peer reviews served as major emotional points of concern among interview participants. Research participants felt dissatisfied when reviewers produced reviews that were too short or lacked academic rigor or displayed inconsistent evaluation across reviewers. Review quality inconsistency resulted in research confusion together with author demotivation and manuscript termination. The review process shows the findings that peer review is shown to be variable and unstandardized while individual biases affect its outcomes according to Dwivedi et al. (2022). Participants observed an underling bias in reviewer evaluations that particularly affected reviews coming from minority research institutions and geographic areas. This aligns with Smith et al. (2023), who argue that the current peer review model unintentionally perpetuates academic selectiveness by favoring authors affiliated with high-ranking institutions or from developed regions. The challenges of navigating disciplinary gatekeeping, unfamiliar review expectations, and condescending tones were frequently noted. Inconsistent or unfair reviews hinder the academic progress of affected authors and decrease trust in the review system as a whole. This calls for more structured reviewer training programs, more evident editorial feedback mechanisms, and formal recognition of high-quality reviewing as part of academic performance metrics. The theme of ethics and transparency emerged as a critical concern, with participants raising doubts about the integrity and accountability of the current peer review model. Key concerns include suspicion about idea theft and unacknowledged use of concepts submitted in unpublished manuscripts.

Several authors pointed out that their manuscripts received uninformative desk rejections and editors failed to provide clear decision points and reveal the reviewers' identities at critical stages of the process (Seghier, 2024). Authors experience powerlessness because of insufficient explanation and lack of options after facing ambiguous editorial decisions. Participants advocated for the adoption of open peer review approaches that incorporate signed reviews alongside public recognition of review activities and clear

systems for holding editors responsible. The unbalanced treatment of interdisciplinary studies and unconventional research creates ethical issues because methodological unfamiliarity may result in complete rejection without appropriate examination (Dalton et al., 2022). The ethical questions about general peer review consciousness and reviewer/editor self-awareness arise from these situations.

The research participants demonstrated positive but reserved views regarding how technology may shape the future of the peer review process. The research showed potential benefits of artificial intelligence combined with machine learning systems for initial examination and fraudulent content identification and ethical issue alerts. The use of digital tools to improve peer review consistency matches with findings from Giray et al. (2025) and Tripathi & Thakar, (2024). Reviewers expressed concerns about depending too heavily on automated systems when it comes to evaluating difficult peer review elements including theoretical contributions together with methodological appropriateness and innovative ideas. The human aspect of peer review, its interpretive and critical lens, was believed exceptional. Participant insights further suggested adopting hybrid models where AI serves a supportive function while preserving human oversight. In addition, several interviewees advocated for radical innovations in the peer review model, such as cross-journal transferable reviews, blockchain-based tracking of reviewer contributions, and reputation systems for reviewers. These ideas point toward a reimagined future of peer review that is more transparent, accountable, and inclusive.

Managerial Implications

The findings of this study have significant implications for editors, academic institutions, publishers, and scholarly communities aiming to enhance the peer review system. The following implications are derived from the core themes and participants' narratives. Journal editors must play a more proactive role in monitoring the timeliness, quality, and fairness of peer reviews. Implementing editorial dashboards that track reviewer performance (timeliness, depth of review, and consistency) can help in allocating manuscripts more judiciously and reducing reviewer fatigue. Further, standard operating procedures should be developed to guide decision-making, especially in cases of reviewer disagreement or manuscript desk rejection. Incentivizing prompt and detailed reviews through recognition programs such as annual "Outstanding Reviewer Awards," certificates, or discounts on article processing charges can improve reviewer participation and morale.

The study reveals that the quantity and style of reviews differ considerably throughout the research. All journals need to establish mandatory training programs for reviewers as an institutional requirement. Educational modules for reviewers should include instructions about ethics as well as constructive feedback methods and bias recognition and discipline-specific behavioral standards. Academic societies with publisher backing should develop central reviewer academies which provide trained reviewers with digital professional credentials. Managers together with editors need to take steps that enhance the clearness of peer review operations. It must include clearly articulating the

reasons behind editorial decisions, offering decision letters with integrated reviewer comments. Journals can also provide authors with a brief rationale for desk rejections, which improves trust and perceived fairness. Additionally, journals should establish conflict-of-interest declarations for reviewers and mechanisms to report unethical review behavior, such as idea theft or biased comments. Editorial staff benefits from advanced technology that enables automated reviewer pairing through AI systems as well as grammar review and structural analysis and article comparison features to manage larger volumes of submissions. These technological tools should work in support of human editors while preserving human judgment authority. Editors need to guarantee that technology tools provide auditable transparency and free themselves from biases and are suitable for disciplinary quality improvement needs. Review time and quality levels improve through expert review system automation that accounts for reviewer scientific capability as well as their current workload status and previous review involvement.

The modern academic ecosystem experiences an insufficient level of motivation among peers to conduct reviews. Publishers together with academic institutions need to develop strategies for including peer review activities in determining academic performance assessment. The review process now gets recognition through publication on platforms such as Publons as well as official promotion recognition. Journals should establish peer review leaderboards and send acknowledgment letters as well as offer publishing cost reductions to reviewers active in their evaluation process. Editors need to become actively aware of institutional underrepresentation in their peer review processes and should do something to decrease it systematically. Deadly-anonymized reviews serve as the mechanism to accomplish this task. The evaluation process of manuscripts will benefit from editorial boards which both represent diverse geographical regions as well as disciplinary backgrounds.

Recommendations for Business

The study demonstrates why academic publishers and journal managers must establish strategic reforms in peer review based on business-oriented methods for enhancing quality and fairness, as well as sustainability. Research-based publishers must establish thorough reviewer relationship programs where they maintain organized expert databases for quality assessment while creating reviewer shift systems to battle reviewer exhaustion while boosting speed. Research on the pattern of submitted papers allows scientists to perform more effective strategic planning. To enhance reviewer quality, publishers need to establish training systems for their reviewers. Establishing dedicated reviewer academies, offering certified programs, and incorporating gamified learning modules can improve competence and motivation. Onboarding programs for new reviewers, particularly early-career researchers, should be integrated as part of editorial business planning.

Journals need to provide recognition incentives through performance-based reward systems, including article processing charge discounts and free access, plus digital accreditation badges with institutional letters. The visibility of contribution metrics featured

on author dashboards functions as a method to permanently honor their work. The implementation of ethical auditing should establish itself as a regular business activity through repeated peer evaluations of fairness and quality standards and independent reporting channels for unethical conduct. Editorial boards should develop a review process that evaluates the performance of reviewers to maintain consistent quality measures in their operations. Moreover, technological innovation should be embraced strategically. AI tools can support editorial workflows in reviewer matching, conflict detection, and language screening, while blockchain technologies can offer tamper-proof tracking of review history. Finally, fostering diversity and inclusion is critical. Expanding the global reviewer pool through regional partnerships, implementing double-blind or hybrid review models, and decentralizing editorial boards can ensure more equitable representation. By embedding these practices, publishers and academic journals can transform peer review into a transparent, inclusive, and value-generating process that strengthens both scholarly integrity and institutional reputation.

Conclusion

This research extensively analyzed the diverse difficulties found in peer review, which emerged throughout structural features and operational elements, as well as ethical concerns and technological limitations. The current peer review framework exists as an essential requirement for maintaining academic standards, but faces issues involving delay problems and opaque review practices create barriers to achieving proper publishing standards and academic fairness at the same time. Review instrument quality, along with recurring inconsistent feedback from reviewers, shows us why better reviewer training and uniform editorial standards are essential for the scientific review process. The examination process requires transparent and accountable review practices because of ethical issues that include conflicts of interest and the risk of idea adoption. The integration of technological innovations, such as AI-driven reviewer matching and blockchain-based tracking, offers promising avenues for mitigating some of these challenges. However, the human element remains critical in ensuring that distinct academic contributions are properly evaluated. Thus, any technological implementation must be accompanied by robust human judgment. Moreover, the managerial and business recommendations outlined in this study advocate for a strategic refurbishment of traditional practices, including the development of formal reviewer engagement strategies, comprehensive training infrastructures, and incentive-based recognition systems. These interventions, coupled with efforts to diversify and democratize the reviewer pool, can foster a more efficient, equitable, and transparent peer review system.

The peer review process stands vital for scholarly publishing quality assurance, yet its continuous advancement becomes necessary to match the present academic environment's swift changes. Future research needs to evaluate both the recommended reforms about peer review alongside technological integrations with new models which combine efficiency and ethical standards. The implementation of these transformative changes ensures academic publishers and stakeholders can maintain strict quality standards

through a peer review system that develops an inclusive, forward-thinking scholarly framework.

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