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ANALYSIS OF RETRACTED PUBLICATIONS IN BUSINESS AND TECHNOLOGY DUE TO ARTIFICIAL INTELLIGENCE: TRENDS AND ETHICAL CONCERNS

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Abstract

Artificial intelligence (AI) is increasingly used in business and technology research, but its rapid adoption has raised serious ethical concerns. The study argues that undisclosed or inappropriate use of generative AI poses a serious threat to research integrity by weakening trust in scholarly publishing. This study examines retracted publications in the business and technology domain that were linked to computer-aided or computer-generated content. Using data from the Retraction Watch Database, 1,202 retracted papers published between 2010 and 2025 were analyzed. The results show that AI-related retractions were almost nonexistent before 2022, followed by a sharp rise after 2023, with the highest number occurring in 2025. China and India contributed the largest share of retracted papers, highlighting regional concentrations linked to institutional and publication pressures. It concludes that stronger AI governance, mandatory disclosure, improved editorial oversight, and ethical reform of research evaluation systems are essential to protect the credibility of business and technology research in the AI era.

Keywords: *Artificial intelligence; Research ethics; Retractions; Business and technology research; Generative AI*

INTRODUCTION

Artificial intelligence (AI) has become a foundational technology in business and technology research, influencing the research and publication landscape. While AI-driven methodologies enhance efficiency and scalability, their rapid adoption has introduced new ethical and methodological challenges. The use of AI for automated text generation, synthetic data creation, algorithmic decision-making, and peer review assistance has blurred traditional boundaries between legitimate research support and misconduct(Kocak, 2024).

Retractions serve as a critical mechanism for correcting the scholarly record and maintaining trust in academic publishing(Kocyigit & Akyol, 2022). Retraction notices typically arise from issues such as data fabrication, plagiarism, citation manipulation, peer review fraud, or ethical violations. Recently, AI has emerged not only as a research tool but also as a contributing factor to several of these retraction causes. Examples include undisclosed AI-generated manuscripts, fabricated datasets produced through automated systems, manipulated images or results, and AI-assisted peer review fraud.

Several studies have shown that the integration of Artificial Intelligence (AI) into the research lifecycle has transformed data processing and manuscript preparation(Oduque de Jesus et al., 2021). While some studies suggested that has also led to new forms of scientific misconduct. In 2023, there were 667 retractions of AI-related articles out of 764 publications that were examined. 30.4% of these cases involved engineering subjects(Kocyigit et al., 2025). Unethical AI use emerged distinctly with 238 cases, encompassing undisclosed generative tools for text, data fabrication, or images without ethical disclosure.

In another study, biomedical retractions research misconduct among authors affiliated with European institutions. A cross-sectional study was conducted, using Retraction Watch database, Journal Citation Reports and PubMed as data sources. Research misconduct accounted for most retractions (66.8%). Retractions of papers by authors affiliated with European institutions are increasing and are primarily due to research misconduct(Freijedo-Farinas et al., 2024).

Artificial intelligence (AI) has seen a notable rise in research output, leading to an increase in retracted publications. This study analyzed 764 retracted AI-related papers from PubMed, with the highest number of retractions occurring in 2023, predominantly from China(Koçyiğit et al., 2025).

Previous studies on retracted publications have largely focused on biomedical and life sciences literature, leaving a gap in understanding how AI-related misconduct affects business and technology research. Moreover, the availability of the Retraction Watch database provides a unique opportunity to systematically examine retraction patterns across disciplines with multiple reasons for retractions.

This study aims to analyze retracted publications in business and technology fields associated with artificial intelligence, focusing on chronological trends, geographic distribution, journal characteristics, and ethical concerns. By identifying patterns and vulnerabilities linked to AI use, this research seeks to inform researchers to strengthen ethical standards and safeguard research integrity in the age of artificial intelligence.

METHODS

Study Design and Data Source

This study conducted a descriptive cross-sectional design to analyze retracted publications in business and technology fields attributable to artificial intelligence related content generation. The Excel sheet were retrieved from the Retraction Watch Database (https://gitlab.com/crossref/retraction-watch-data) on 27 December 2025, which contained 68,131 retracted records across six major subject categories: Business and Technology (B/T), Basic Life Sciences (BLS), Environmental Sciences (ENV), Health Sciences (HSC), Humanities (HUM), Physical Sciences (PHY), and Social Sciences (SOC). The primary subject considered as a main subject of the paper("Retraction Watch Database User Guide Appendix A," 2018).

There are 107 reasons for the retraction and a paper can be retracted by multiple reasons. So, the first reason considered as primary reason. Among these, retractions attributed to the reason "Computer-Aided Content or Computer-Generated Content" were identified as content created using automated systems such as generative artificial intelligence, randomizing algorithms, or text-generation tools("Retraction Watch Database User Guide Appendix B," 2018).

Out of 1,660 total retractions attributed to computer-aided or computer-generated content across all disciplines, 1,202 publications were identified within the Business and Technology subject category and were included in the final analysis.

Data Analysis

Descriptive statistics were used to summarize trends. Frequencies and percentages were calculated for year-wise, country-wise, and subject-wise distributions. The temporal

evolution of retractions was examined to assess growth patterns associated with the emergence of generative AI tools. Country-level contributions were analyzed to identify geographic disparities in AI-related retractions.

RESULTS

Overall Characteristics

In the following figure 1, the retracted papers between 2010 and 2025, a total of 1,202 retracted publications in the Business and Technology domain were attributed to the reason Computer-Aided Content or Computer-Generated Content. These accounted for 72.4% (1,202 / 1,660) of all such AI-related retractions across the Retraction Watch database.

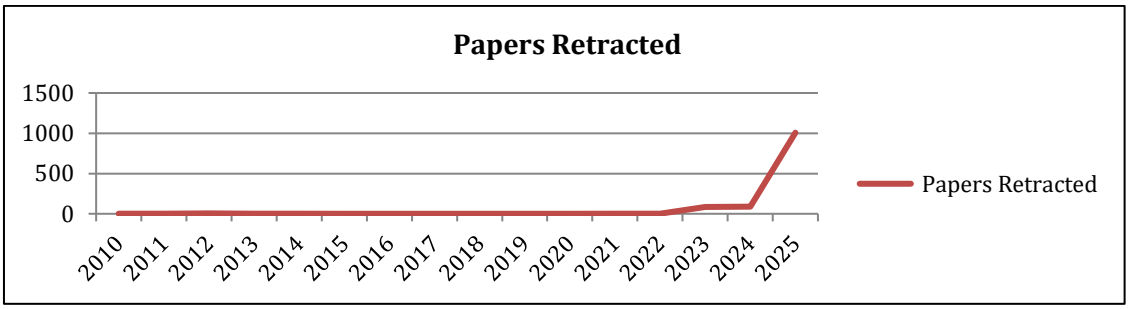

Figure 1: Year wise retraction

A negligible number of retractions occurred prior to 2022. A sharp escalation was observed beginning in 2023, followed by exponential growth in 2024 and a dramatic peak in 2025, which alone accounted for 83.8% of all retractions in this category.

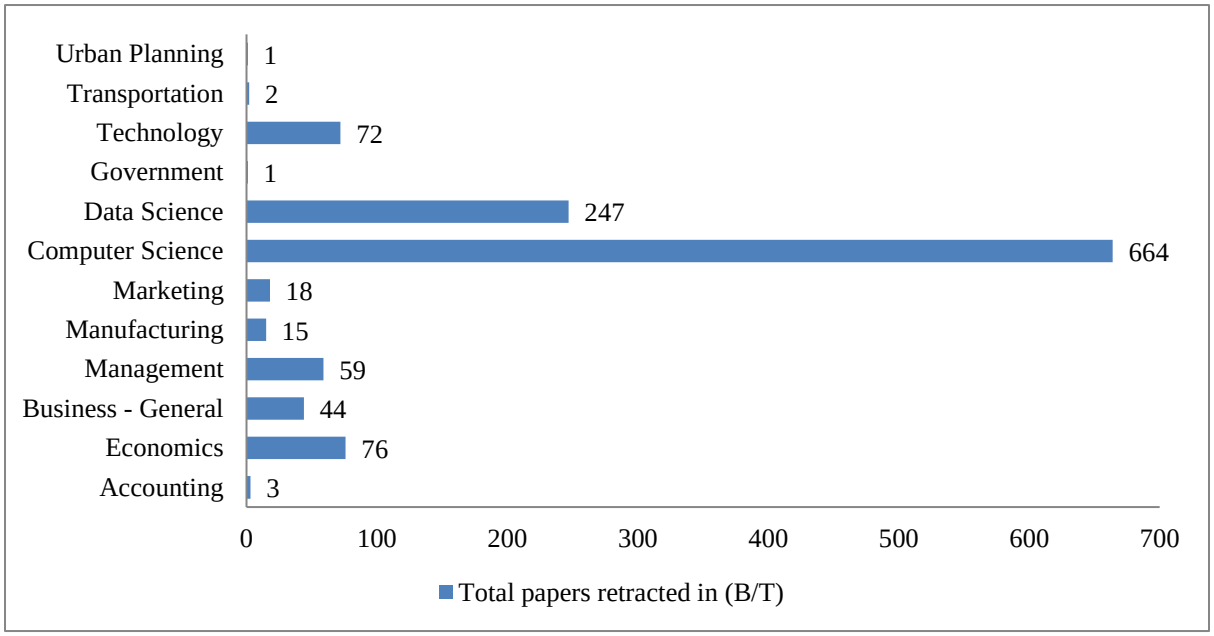

Figure 2: Subject-Wise Distribution within Business and Technology

The above figure 2 shows that Computer Science (55.2%) and Data Science (20.5%) together accounted for over 75% of all retractions, indicating that computational disciplines are the most vulnerable to AI-generated misconduct. India contributed 282 retractions (23.5%), with the highest shares in Computer Science (191) and Data Science (66).

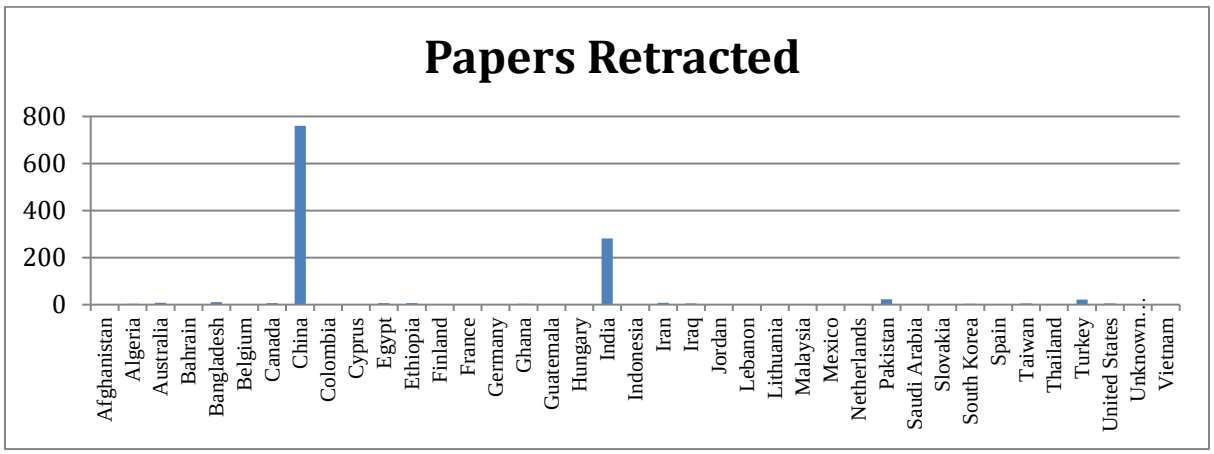

Figure 3: Country-Wise Distribution

China alone accounted for 63.3% of all retracted papers, followed by India at 23.5%. Together, China and India contributed nearly 87% of AI-related retractions in Business and Technology. These results clearly demonstrate that AI-generated or computer-aided content has become a dominant cause of retractions in business and technology disciplines, particularly since the global diffusion of generative AI tools after 2022.

DISCUSSION

This study provides the first systematic analysis of retractions in business and technology research attributable specifically to computer-aided or computer-generated content. The findings reveal a dramatic transformation in the nature of publication misconduct following the diffusion of generative artificial intelligence tools. The near absence of such retractions before 2022, followed by an explosive increase in 2023-2025 culminating in more than 1,000 retractions in 2025 alone suggests that generative AI has fundamentally altered the risk landscape of academic publishing.

AI as a Structural Risk to Epistemic Integrity

Unlike traditional forms of misconduct such as plagiarism or data falsification, computer-generated content introduces a qualitatively different ethical challenge. Generative systems can produce grammatically fluent, statistically plausible, and domain-specific manuscripts at scale, eroding the reliability of peer judgment(Chetwynd, 2024). In business and technology disciplines especially computer science and data science, which together accounted for over 75% of retractions. This creates a structural vulnerability: reviewers are often asked to evaluate work in fast-moving technical domains where plausibility can substitute for veracity. From a research perspective, this phenomenon undermines epistemic trust, a core institutional value of scholarly communication. When journals unwittingly disseminate AI-generated research, they compromise not merely procedural norms but the moral contract between scholars, editors, and society that research outputs represent authentic intellectual labor.

Geographic Concentration and Institutional Pressures

The overwhelming concentration of retractions in China (63.3%) and India (23.5%) raises complex ethical questions regarding institutional incentives and global asymmetries in research governance. These patterns should not be interpreted as national moral failings but as indicators of systemic pressures: intense “publish or perish” regimes, promotion systems heavily indexed to publication counts and uneven enforcement of research integrity norms(Khan et al., 2024).

Business ethics scholarship has long emphasized that misconduct is rarely a product of individual vice alone but often of organizational design failures. The rise of AI-generated papers exemplifies this logic: when evaluation systems reward output volume over epistemic quality, AI becomes an economically rational though ethically indefensible means of compliance.

The Moral Status of AI-Generated Scholarship

The category "computer-aided or computer-generated content" collapses a morally significant distinction between assisted and substituted authorship. AI used transparently as a cognitive aid may be ethically permissible; AI used to replace human intellectual labor while being presented as original scholarship constitutes deception. The retraction data suggest that this boundary is being crossed at scale.

From a normative standpoint, undisclosed AI-generated research violates principles of honesty, accountability, and fairness. It misrepresents the origin of knowledge, unfairly advantages those willing to outsource intellectual labor to machines, and pollutes the evidentiary base upon which managerial, technological, and policy decisions are made.

Failures of Editorial Gatekeeping

The temporal clustering of retractions in 2023-2025 indicates not only increased misconduct but delayed detection. This lag suggests that editorial systems were unprepared for generative AI and lacked both the technical capacity and ethical frameworks required to identify machine-generated manuscripts. Peer review models designed for human error are ill-suited to machine-scale fabrication.

This is an ethical failure of governance. Journals, publishers, and scholarly associations have a fiduciary duty to maintain the integrity of the knowledge commons. The absence of mandatory AI disclosure policies, limited use of detection tools, and inconsistent enforcement practices collectively enabled the proliferation of inauthentic scholarship.

IMPLICATIONS

This study has four core ethical implications for the field:

1. *AI governance must be treated as a matter of research integrity*, not merely technological risk. The generation of knowledge is a moral practice embedded in trust-based institutions(Alsamhori & Alnaimat, 2024).

2. *Disclosure is a moral obligation*, not a procedural formality. Any AI assistance in writing, data generation, or analysis must be declared, allowing reviewers to evaluate epistemic responsibility(Hosseini et al., 2023).

3. *Incentive systems require ethical redesign*. Universities and funding bodies must shift from output-maximization metrics to quality-weighted and integrity-sensitive evaluation models.

4. *Publishers are moral gatekeepers*. Journals must adopt AI-detection workflows, require data provenance statements, and treat undisclosed AI-generated content as serious misconduct rather than technical irregularity(Samuel et al., 2021).

CONCLUSION

The unprecedented surge of retractions in business and technology research due to computer-generated content marks a watershed moment in the ethics of scholarly publishing. Generative AI has not merely introduced new tools; it has destabilized the moral architecture of academic work.

This study demonstrates that AI-driven misconduct is no longer peripheral. It is systemic, geographically concentrated, and institutionally enabled. If left unaddressed, it threatens the legitimacy of business scholarship and the trust that underpins evidence-based management, innovation, and policy.

Restoring epistemic integrity in the AI era requires more than technical fixes. It demands a normative re-commitment to honesty, accountability, and human intellectual responsibility as non-negotiable foundations of scholarly life.

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