Vol. 5, No. 3, 2025, 1-18. DOI: 10.47909/ijsmc.250

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ORIGINAL ARTICLE

Retractions in business, management, and accounting journals: Analysis of documents published in Scopus between 2000 and 2023

Cristian Zahn Muñoz[1], Nancy Alarcón-Henríquez[2], Patricio Viancos-González[3], Ezequiel Martínez-Rojas[4]

[1] Universidad de Los Lagos, Chile.
[2] Universidad de Los Lagos, Chile.
[3] Universidad de la Serena, Chile.
[4] Universidad Arturo Prat, Chile.
Corresponding author
Email: emartinezr@unap.cl. **ORCID:** https://orcid.org/0000-0002-0914-951X.

ABSTRACT

Objective. This study analyzed the retraction of scientific articles in business, management, and accounting between 2000 and 2023.

Methodology. The Retraction Watch database was utilized as a source, and 365 formally retracted documents were selected for analysis. A comprehensive examination of the variables was conducted, encompassing the publication and retraction dates, author affiliation, country of publication, rationale for retraction, and journal quartile..

Results. The findings indicated a persistent increase in retractions, with substantial spikes commencing in 2012, concomitant with enhanced ethical and methodological oversight. China and the United States led in absolute numbers of retractions; however, some countries exhibited high proportions relative to their total output. The analysis of co-authorships revealed clusters of researchers with multiple retractions, evidencing specific patterns of misconduct. The predominant cause of retraction was scientific misconduct (72.6%), surpassing unintentional and editorial errors. The prevalence of retracted articles in high-impact journals (Q1 and Q2) was also notable, indicating that malpractice transcended the quality of the publication.

Conclusions. The study's findings indicated that substandard academic practices were not confined to the academic sphere. Rather, their ramifications could propagate beyond this domain, exerting influence on economic, social, and political decision-making processes. This evidence underscored the necessity of fortifying academic integrity and transparency within the review and publication processes.

Keywords: retraction; research ethics; Retraction Watch database; business; management; and accounting.

Received: 23-04-2025. **Accepted:** 17-06-2025. **Published:** 27-07-2025.

How to cite: Zahn-Muñoz, C., Alarcón-Henríquez, N., Viancos-González, P., & Martínez-Rojas, E. (2025). Retractions in business, management, and accounting journals: Analysis of documents published in Scopus between 2000 and 2023. *Iberoamerican Journal of Science Measurement and Communication; 5*(3), 1-18. DOI: 10.47909/ijsmc.250

INTRODUCTION

In recent years, the phenomenon of retractions in scientific journals has acquired increasing relevance in the debate on academic integrity and the quality of scientific production (Fanelli, 2013; Koo & Lin, 2024; Sharma *et al.,* 2023). This increase can be attributed to two factors: the growth in the number of journals published and the consequent expansion in the total volume of scientific articles (Bar-Ilan & Halevi, 2018; Christensen & Miguel, 2018; Gholampour *et al.,* 2022; Katavić, 2014; Steen *et al.,* 2013; Yuan & Liu, 2023). In this context, the number of retracted articles has continued to rise (Elango *et al.,* 2019; Grieneisen & Zhang, 2012; He, 2013; Li *et al.,* 2024; Tang *et al.,* 2020; Van Noorden, 2023), sparking the interest of numerous researchers. However, it is estimated that less than 5% of scientific publications are subject to retractions (Bakker *et al.,* 2024). A multitude of studies have examined this issue, taking into account the progression in the number of retractions, their geographical distribution, their presence in various journals, and the underlying motivations for these decisions. While early research on retractions focused primarily on articles related to human health (Call *et al.,* 2024; Foo, 2011; Stavale *et al.,* 2019; Toma *et al.,* 2022), in recent years, researchers have expanded their focus to include fields such as psychology, economics, humanities, and the arts (Alrawadieh & Zareer, 2019; Butler *et al.,* 2017; Cox *et al.,* 2018; Craig *et al.,* 2020).

The analysis of retractions in business, management, and administration (BMA) journals is of particular pertinence, as this field guides strategic business decisions and exerts a significant influence on public policy and regulatory frameworks. The increasing number of retracted studies has led to concerns regarding the reliability of the extant knowledge, which can result in erroneous decisions being made by entrepreneurs, investors, and policymakers, leading to financial losses and the development of ineffective strategies that can negatively impact economic and organizational development (Basumatary *et al.,* 2025; Tourish & Craig, 2020). Retraction serves as a mechanism for correcting literature and alerting readers to articles that contain seriously flawed or erroneous content or data, such that their findings and conclusions cannot be considered reliable (Bordino *et al.,* 2020). Despite their minor representation within the broader scientific corpus, retractions have been shown to exert a substantial influence on the credibility of research and to impede its progress, thereby engendering a state of uncertainty within the academic community and the sectors that rely on research for decision-making (Sharma, 2021). Retraction is a critical mechanism for correcting published scientific knowledge when irregularities arising from fraud, significant errors, or ethical breaches are identified (Bakker *et al.,* 2024; Lei *et al.,* 2024). This process enables the correction of academic literature while safeguarding scientific integrity by raising awareness within the community of studies whose validity may be questionable. It thereby prevents the misuse and misinterpretation of these studies (Decullier *et al.,* 2012; Sox & Rennie, 2006). Retractions and other forms of correction have progressively transformed the domain of scientific publishing. However, the extent of their impact on the production, dissemination, and evaluation of research remains uncertain (Ribeiro *et al.,* 2022).

Scientific article retractions may occur for various reasons, with research misconduct being among the most prevalent. This category encompasses data fabrication or falsification, plagiarism, and self-plagiarism (Fang *et al.,* 2012; Lewis *et al.,* 2011). While retractions can also result from unintentional errors, empirical evidence indicates that fraudulent practices are more prevalent (Freijedo-Fariñas *et al.,* 2024; Lei *et al.,* 2024). A comprehensive categorization of the underlying causes of retraction reveals three predominant classifications: (1) ethical violations: duplicate publication, failure to credit collaborators, lack of ethics committee approval, authorship disputes, manipulation of the peer-review process, and citation manipulation; (2) scientific misconduct or distortion: data manipulation or falsification, unsupported conclusions, concerns regarding data validity, problems with reproducibility, and both intentional and unintentional analytical errors; and (3) errors of an administrative or editorial nature may be observed, which include, but are not limited to, the publication of a manuscript in an incorrect issue, the premature release of a draft version in lieu of the

final manuscript, or other mistakes attributable to the publisher (Bar-Ilan & Halevi, 2018). Moreover, retractions compromise the integrity of research due to the potential dissemination of unreliable results, which can justify their exclusion from the scientific literature (Banks *et al.,* 2016; Gholampour *et al.,* 2022; Khan *et al.,* 2021; Kocyigit & Akyol, 2022). The proliferation of such cases in recent years can be attributed to various factors, including the pressure to publish and a lack of awareness about ethical practices (Alrawadieh, 2018; Campos-Varela & Ruano-Raviña, 2019). Additionally, a divergence in the interpretation of the results emerges when considering the gender of the researchers. A general tendency has been observed indicating that the number of retractions from women is generally lower than the number of retractions from men. Furthermore, a paucity of reasons has been documented in cases involving women, with the most prevalent reasons relating to fraud or plagiarism. (Decullier & Maisonneuve, 2023; Pinho-Gomes *et al.,* 2023; Sebo *et al.,* 2023).

Empirical evidence suggests that authors of retracted articles may be affiliated with institutions in developed and developing countries, indicating that research misconduct is a global problem rather than one unique to specific regions (Fang *et al.,* 2012; Resnik *et al.,* 2015). However, a multitude of studies have approached the retraction phenomenon from diverse perspectives, considering factors such as the period of analysis, the source of publication, and other elements (Lei & Zhang, 2018). As noted by Tang *et al.* (2020), China is distinguished by the rapidity with which its publications are retracted in comparison to other nations. However, a study by Campos-Varela and Ruano-Raviña (2019) indicates that Iran records the highest proportion of retracted articles (15.52 per 10,000), followed by Egypt (11.75 per 10,000) and China (8.26 per 10,000), respectively (Ghorbi *et al.,* 2021). Research misconduct can be regarded as a form of corruption that undermines the trust placed in science by altering its fundamental principles (Little *et al.,* 2022; Montgomery, 2022). This phenomenon is driven by ineffective institutional controls, the high associated personal benefits, and the low probability of detection and sanction (Were *et al.,* 2023). In this context, predatory journals have emerged as a mechanism that exploits the structure of scientific communication, allowing the dissemination of studies without adequate peer review and thereby compromising the integrity of knowledge (Angadi & Kaur, 2020; Johal *et al.,* 2017).

As Tourish and Craig (2020) emphasize, public choice and agency theories elucidate how incentives can engender misconduct when the perceived benefits of corrupt behavior exceed the costs of such actions. The proliferation of article mills, where data are fabricated or manipulated to increase the number of publications, exacerbates this problem. In some academic environments, the conditions that facilitate these practices are created, resulting in the convergence of the means, motivation, and opportunity for fraud, particularly in countries that prioritize publication in high-impact journals or where the monetization of business schools has become a distorted incentive (Chapman & Lindner, 2014; Teixeira da Silva, 2022). The objective of this investigation is to address the following research questions: What is the temporal evolution of retractions in BMA journals indexed in Scopus? What characteristics are present in the retracted articles and the involved authors? What are the most frequent reasons that motivate these retractions? Do patrons exist according to the country, and if so, what is the type of authorship? Therefore, this article will examine retractions in the Scopus database within the BMA area, identifying trends, authorship, motives, and characteristics of affected publications. The objective of this study is to analyze articles retracted from journals indexed in Scopus from the BMA area between the years 2000 and 2023. This analysis will provide empirical evidence that will facilitate a more profound comprehension of this phenomenon within the disciplinary field.

2. METHODOLOGY

This study employs a quantitative and descriptive approach, enabling us to systematically examine general patterns, trends, and structural relationships within the universe of articles in the BMA field published between 2000 and 2023 in journals indexed in Scopus. The selection of this approach is predicated on the

primary objective of the study, which is to characterize and describe its distribution, evolution, and typologies. The compilation of documents was carried out using the Retraction Watch (RW) database, recognized as the world's largest repository of retracted publications (Dal-Ré & Ayuso, 2020). The RW database was downloaded on January 17, 2025, and contained 55,203 retractions. For this study, only articles with formally documented retraction were included, excluding notices of correction, expressions of concern, and reinstatements from the sample. The selected articles were subsequently organized into a database, with several variables taken into consideration. The following variables were included in the study: document type, publication date, retraction date, author names, institutions of affiliation, country, reason for retraction, journal, and publisher. The SCImago Journal Rank (SJR) was employed to ascertain the journal's ranking, with consideration given to the quartile corresponding to the year of the document's publication. The descriptive analysis entailed the calculation of absolute and relative frequencies, as well as percentages, and the examination of temporal trends through the utilization of simple chronological series. These procedures facilitate the observation of the annual evolution of the number of retractions, as well as their distribution by country, editorial, reason, and type of document.

To address the research questions posed, a number of analytical dimensions were examined, including the temporal evolution of retractions and the volume of publications; the characterization of the sources and the involved authors; the reasons that led to the retractions; and the identification of patrons according to country, type of authorship, and time passed until the retraction. A total of 2,350 retracted articles in the BMA areas were identified by downloading the Scopus publication source database as of December 2024. The database under consideration encompassed both active and inactive sources from various publication outlets, including journals, trade journals, and book series. Subsequently, a comprehensive search was conducted in RW for all retracted publications associated with Scopus sources in the aforementioned area, yielding 369 retractions. Consequently, documents published prior to the year 2000 were excluded, yielding a final sample of 365 retracted publications. The sample selection process is schematically detailed in Figure 1 to provide a clear and structured view of the methodology used.

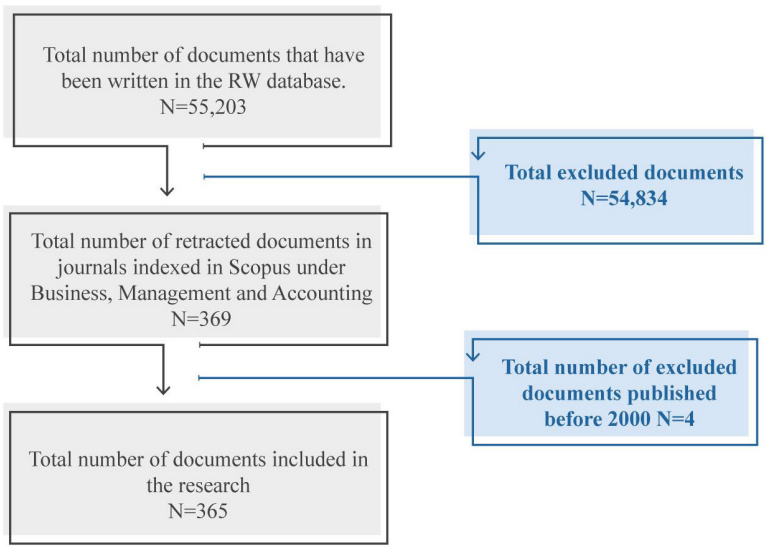

Figure 1. Diagram of the sample selection procedure.

The Scopus database was employed as a tool to ascertain the retraction rates within the designated field. This endeavor utilized a specialized search engine that enabled the filtration of publications by subject area, document type, and time frame. The exclusion of records already classified as retracted was also explicitly implemented. The search strategy was

subsequently refined to calculate retraction rates by country, incorporating the author's institutional affiliation as an additional criterion. For instance, this approach was applied to the case of Malaysia using the following search query: *SUBJAREA (busi) AND AFFILCOUNTRY (Malaysia) AND PUBYEAR > 1999 AND PUBYEAR < 2024 AND (LIMIT-TO (SRCTYPE, "j") OR LIMIT-TO (SRCTYPE, "d") OR LIMIT-TO (SRCTYPE, "k")) AND (EXCLUDE (DOCTYPE, "tb"))*.

The analysis of co-authorship networks was developed from the individual evaluation of documents retracted in Scopus, resulting in a database of 347 valid records for this analysis. Of the total of 365 retracted documents identified, 18 were excluded from this stage because Scopus did not record authorship information in these cases, which made their incorporation into the relationship matrix impossible. The visualization and grouping of data are carried out using the VOSviewer software. Concurrently, the network's structural metrics, including degree of centrality, intermediation, and connected components, are analyzed using UCINET and NetDraw based on an adjacency matrix constructed from 893 authors and their co-authorship links. The treatment of retraction reasons involved a meticulous process of refinement and categorization. In this phase, vague or imprecise reasons were excluded, and the documents were classified into three main categories: misconduct, unintentional error, and errors related to the journal or publisher. The categorization was completed by two independent authors, resulting in an initial agreement of 89.5% on the initial assignments. The documents that lacked consensus were reviewed collectively until a final categorization was achieved.

3. RESULTS

3.1. Frequency and rates of retraction

Figure 2 illustrates the temporal progression of document retractions in the domains of BMA during the period spanning from 2000 to 2023. A particularly pronounced upward trend is evident, commencing from 2012 onwards. The most significant increases were observed in 2015 and 2023, indicating a potential shift in the dynamics of academic quality control or an increase in the rigor of the review and retraction processes for scientific publications. The findings of this study are corroborated by the results of a statistical analysis employing simple linear regression, which yielded a coefficient of determination $R^2 = 0.668$, adjusted $R^2 = 0.649$, $F(1.18) = 36.158$, $p = 0.000$. Consequently, these findings suggest that approximately 66.8% of the observed variability in the number of retractions can be attributed to the temporal factor, and the adjusted R^2 value (0.649) substantiates the robustness of the proposed model.

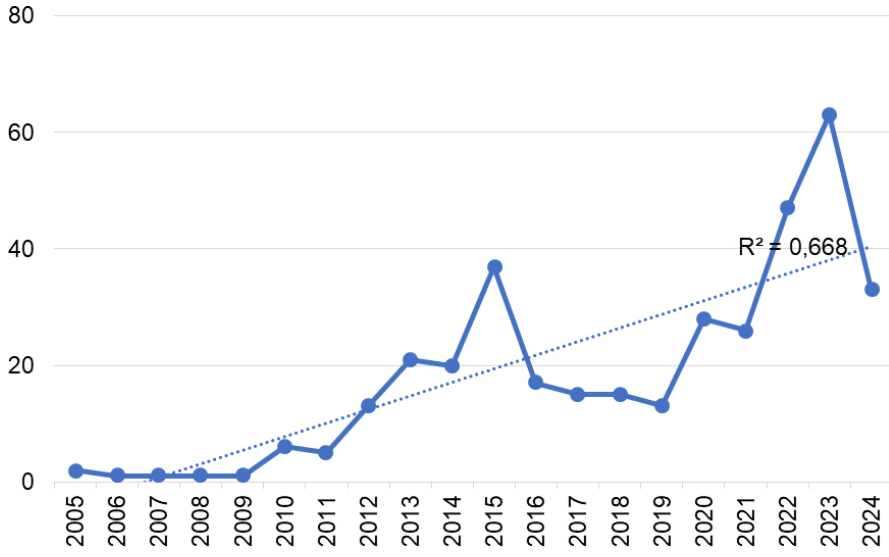

Figure 2. Evolution of the number of retractions.

Figure 3 demonstrates a marked increase in publications within BMA from 2000 to 2023, indicative of heightened scientific productivity, augmented visibility, and elevated academic activity within this domain. The observed upward trend is further validated by a simple linear regression analysis, which yielded a coefficient of determination (R^2 = 0.893, adjusted R^2 = 0.888, F (1,22) = 182.987, p = 0.000). The statistical analysis indicates that 89.3% of the variability in the number of publications can be attributed to the time factor, suggesting an almost linear and consistent growth over time. Furthermore, the close value of 0.888 of the adjusted R^2 confirms the robustness of the model, validating the hypothesis of a significant increase in academic production in this area (p = 0.000).

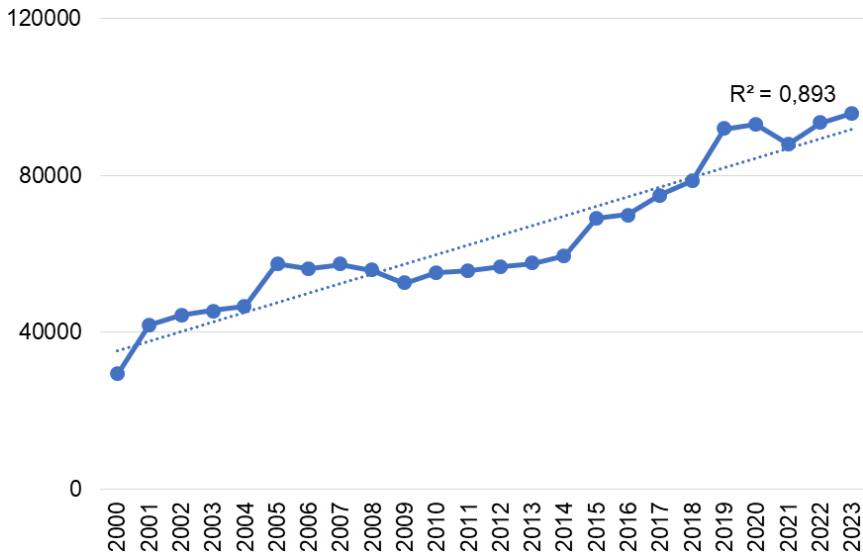

Figure 3. Evolution from 2000 to 2023 of the number of publications in the business peer-review.

As illustrated in Table 1, there has been an upward trend in publication retraction rates in BMA over the years. A simple linear regression analysis was performed, yielding a coefficient of determination of 0.344, an adjusted R^2 of 0.315, and an F-test that was found to be significant. The result of this calculation, expressed as F (1,22) = 11.554, p = 0.003, indicates a statistically significant relationship between the variables under consideration. The low retraction rate observed for papers published in 2023 has exerted a deleterious effect on the coefficients. This discrepancy can be attributed to the fact that the average time for a paper to be retracted is 31.8 months. This suggests that a significant number of recent publications have not yet had sufficient time to complete this process. To assess the impact of this variable, the linear regression model was recalculated, excluding data from the year 2023. This resulted in an R^2 of 0.529 and an adjusted R^2 of 0.506. These values indicate a notable improvement in the model's explanatory power regarding the variability of retraction rates. This finding underscores the influence of the retraction aging period on statistical interpretations and, consequently, on the conclusions drawn about trends in academic integrity within the field under study.

As indicated in Table 2, the 10 countries with the highest number of retracted documents are listed based on the authors' affiliation. In addition to the number of retracted documents, the total number of publications and the percentage of retractions by country are included. The findings indicate that the overall rate of retraction is relatively low. China and the United States lead in absolute numbers of retracted documents, with 95 and 93, respectively. However, an analysis of the retraction rates reveals that China exhibits a rate of 0.102%, which is approximately three times higher than that of the United States (0.027%). Conversely, Saudi Arabia and Pakistan have the highest retraction

Year	Total publications in the area	Total of retractions	Retractions per 10,000 publications	Retraction percentage (%)
2000	29,236	2	0.684	0.007
2001	41,854	2	0.478	0.005
2002	44,220	6	1.36	0.014
2003	45,530	2	0.439	0.004
2004	46,517	1	0.215	0.002
2005	57,392	5	0.871	0.009
2006	56,234	6	1.07	0.011
2007	57,318	6	1.05	0.010
2008	55,758	10	1.79	0.018
2009	52,456	12	2.29	0.023
2010	55,141	18	3.26	0.033
2011	55,631	15	2.70	0.027
2012	56,656	14	2.47	0.025
2013	57,524	11	1.91	0.019
2014	59,422	10	1.68	0.017
2015	68,952	14	2.03	0.020
2016	69,969	22	3.15	0.031
2017	75,047	15	2.0	0.020
2018	78,554	21	2.67	0.027
2019	91,832	22	2.40	0.024
2020	93,146	17	1.83	0.018
2021	88,070	65	7.38	0.074
2022	93,336	67	7.18	0.072
2023	95,900	2	0.21	0.002

Table 1. Retraction rate based on year of publication.

rates, with 0.280% and 0.164%, respectively. This suggests that, while the absolute number of retractions may not be the highest, the proportion of retracted papers relative to the total published is considerably higher compared to other countries.

Country	Number of retracted documents	Number of publications (2000-2023)	Retraction percentage (%)
United States	93	338,266	0.027
China	95	93,261	0.102
India	42	69,358	0.061
Saudi Arabia	20	7,153	0.280
Malaysia	17	24,891	0.068
United Kingdom	17	127,117	0.013
Germany	15	65,955	0.023
Pakistan	13	7,923	0.164
Netherlands	12	31,289	0.038
Australia	11	64,871	0.017

Table 2. List of 10 countries with the highest number of retracted articles based on author affiliation.

3.2. Authorships

Table 3 presents a detailed analysis of the BMA field, focusing on the number of authors per document and the recurrence of retractions. A total of 893 authors were identified, associated with 365 retracted publications, yielding an average of 1.16 retractions per author. The authorship distribution indicates that the majority of retracted articles were co-authored by

two or three individuals (52.6%), with a significant proportion of papers having four or five authors (21.6%). Single-authored publications accounted for 19.5% of the publications, while articles with six or more authors represented the smallest share, at 6.3%. With respect to recurrence, 91.9% of authors were associated with a single retraction, whereas 8.1% were linked to multiple retractions. Among the 72 authors with repeated retractions, the majority (63.9%) had two retractions, 30.6% had between three and five, and a small group, comprising 5.6% (four authors), had six or more retractions.

	Number of retracted documents	Retraction percentage (%)
AUTHORSHIP BY DOCUMENTS		
One author	71	19.5
Two and three authors	192	52.6
Four and five authors	79	21.6
Six or more	23	6.3
Total	**365**	**100**
TYPES OF AUTHORS		
One retraction	821	91.9
Recurrences	72	8.1
Total	**893**	**100**
RECURRENT AUTHORS		
Two retractions	46	63.9
Three and five retractions	22	30.6
Six or more retractions	4	5.6
Total	**72**	**100**

Table 3. Characteristics of retractions by authorship.

As illustrated in Table 4, a thorough investigation of the nations with the highest number of scientific article retractions has been conducted, with the analysis being based on the affiliation of the initial author of the retracted documents. Furthermore, the aggregate number of author signatures associated with each country is enumerated, thereby offering a comprehensive perspective on each nation's contribution to retracted publications in the domains of BMA. China and the United States are particularly noteworthy in the ranking, accounting for 24.1% and 19.7% of first authorships on retracted papers, respectively. Furthermore, these countries have the highest number of author signatures, with the United States registering 227 signatures (21.9%) and China registering 222 signatures (21.4%). This finding suggests a high frequency of retracted papers led by authors from these countries, as well as a significant global share of authorship in retracted publications. India holds third place

Country	Number of first authorships	Percentage of first authorships (%) (n = 365)	Number of total signatures	Percentage of total signatures (%) (n = 1,035)
China	88	24.1	222	21.4
United States	72	19.7	227	21.9
India	32	8.8	97	9.4
Germany	14	3.8	22	2.1
Malaysia	13	3.6	47	4.5
Saudi Arabia	11	3	37	3.6
Indonesia	10	2.7	32	3.1
Netherlands	10	2.7	26	2.5
United Kingdom	10	2.7	24	2.3
Australia	8	2.2	22	2.1

Table 4. Frequency and percentage of countries of affiliation of first authorships.

with 32 first authorships, accounting for 8.8% of the total. It is followed by Germany, Malaysia, Saudi Arabia, Indonesia, the Netherlands, the United Kingdom, and Australia, which collectively account for less than 5% of the total. These data demonstrate the geographical diversity of retractions, although with a clear concentration in some academic powerhouses and countries with high scientific output.

3.3. Co-authorship networks

The co-authorship network map presented in Figure 4 reveals the complex collaboration structure among recurring researchers involved in retracted scientific publications. The visualization underscores the presence of distinctly delineated clusters, thereby suggesting that retractions are more likely to occur within relatively cohesive collaboration groups. A salient aspect of the analysis pertains to the authors' dispersion at the periphery of the co-authorship network, which is marked by their limited connections with other researchers. This observation may imply that specific instances of retraction are more likely to occur as isolated events, rather than being part of a recurring collaborative pattern. The low network density (0.0035) further corroborates this interpretation, indicating that the majority of authors have collaborated with only a few peers, while a minority exhibit a higher degree of interconnectedness within the network. Quantitative network analysis, performed using Ucinet and NetDraw software, reveals a highly fragmented structure with 266 connected components, indicating a lack of complete interconnectedness in the co-authorship network. Furthermore, certain researchers occupy a central role in the network, as evidenced by the case of James Hunton, who is noteworthy not only for being the author with the highest number of retractions (36) in the study but also for his high degree centrality (0.0348) and betweenness centrality (0.0012). Other authors who have contributed to this field include Frederick Walumbwa, Abdullah Gani, Shakeel Ahmad Bhat, and Victor Chang. In summary, the analysis of the co-authorship network accomplishes two primary objectives. First, it identifies the key players in retracted publications. Second, it provides critical insight into how collaborative dynamics could influence the recurrence of poor scientific practices. This highlights the need for greater oversight and transparency in academic networks.

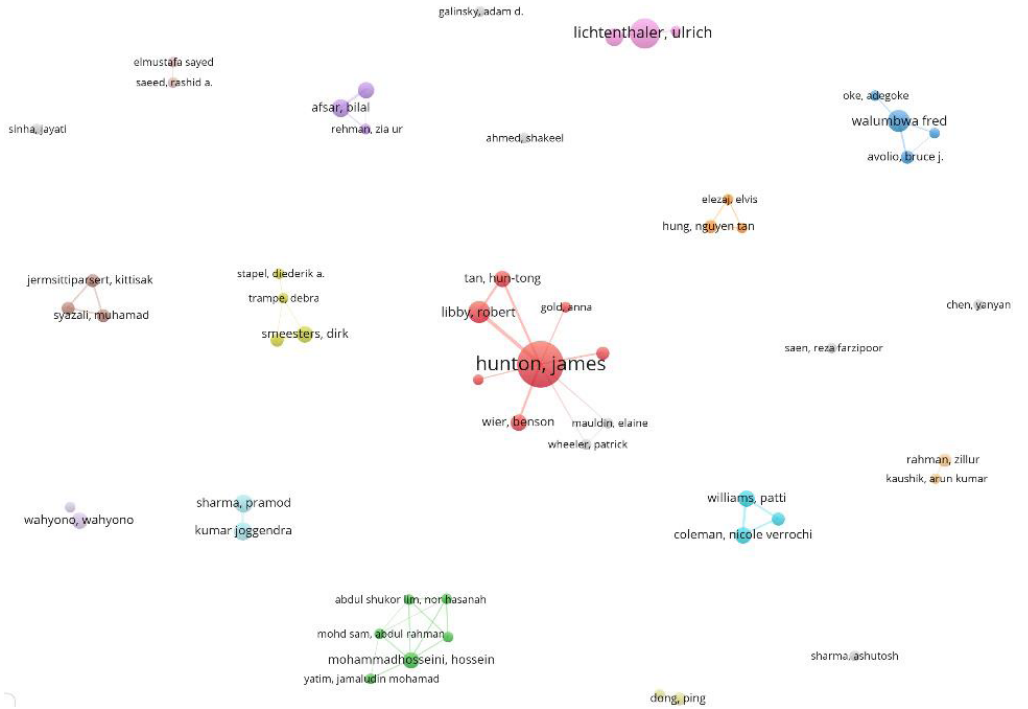

Figure 4. Co-authoring networks.

3.4. Reasons for retractions

As illustrated in Figure 5, the distribution of reasons associated with retracted documents is presented, along with the frequency and percentage of each category. A review of the extant literature reveals that the majority of retracted documents (34.8%) present a single reason for retraction, suggesting that, in many cases, the reason for retraction is clear and specific. A review of the documents reveals that documents citing two reasons for retraction account for 25.8% of the total, suggesting that a considerable proportion of cases involve the convergence of multiple factors contributing to the decision to retract an article. A total of 12.3% of the documents were attributed to three reasons, while 8.8% and 8.2% of the documents were attributed to four and five reasons, respectively. A noteworthy observation is the presence of documents that cite six or more reasons for retraction (6.8%), which may be indicative of research with significant methodological, ethical, or academic integrity issues. Moreover, 3.3% of the documents lack specific information regarding the rationale for retraction, which could indicate a lack of transparency in the retraction process or difficulties in adequately categorizing the underlying reasons.

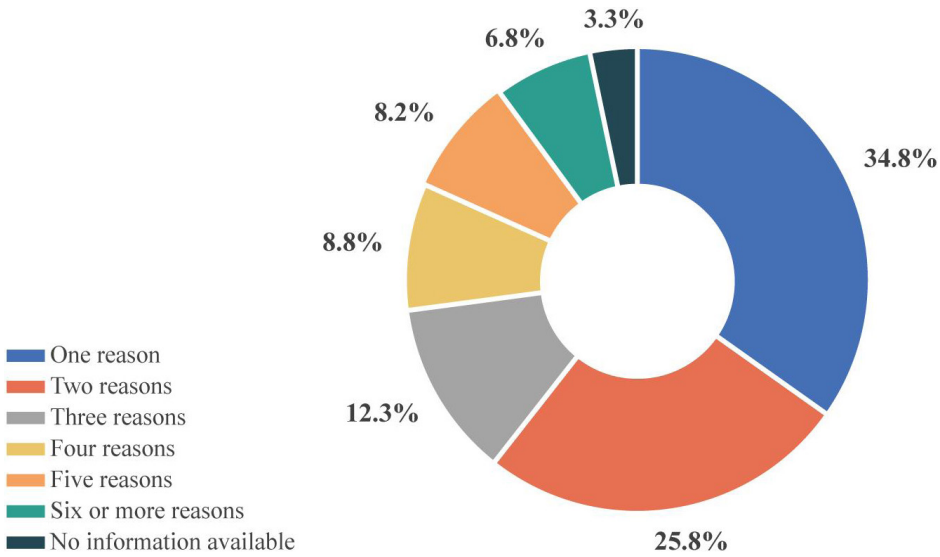

Figure 5. Frequency of the number of reasons in retracted documents.

In accordance with the aforementioned data, Table 5 presents the 15 most prevalent reasons for document retraction in the "business, management, and accounting" field. Documentation lacking explicit information regarding the rationale for retraction was excluded from the analysis, resulting in the identification of 903 reasons within 353 documents. This equates to an average of 2.6 retraction reasons per document. The predominant rationale for retraction, identified in 110 documents (representing 31.2% of cases), is "unreliable results." This finding suggests a substantial issue with the validity and reliability of the findings reported in scientific articles. The second most common reason cited is "concerns/issues about referencing/attributions" (21.5%), which suggests a high incidence of errors in citing sources or assigning authorship. This phenomenon may be indicative of deficiencies in the editorial review process and could give rise to concerns regarding potential ethical infractions, including plagiarism and citation manipulation. A worrisome discovery emerged from the analysis: the occurrence of "fake peer review," which was documented in 17.8% of the reviewed papers. This category comprises deceptive practices during the review process, including the misrepresentation of reviewer identities and the manipulation of assessments. Additionally, the category "concerns/issues with peer review" emerges in 16.1% of retractions, underscoring the necessity of implementing robust and transparent peer review processes to safeguard scientific integrity.

Reasons for retraction	Number of retracted documents	Retraction percentage (%)
Unreliable results	110	31.2
Concerns/issues about referencing/attributions	76	21.5
Fake peer review	63	17.8
Concerns/issues with peer review	57	16.1
Concerns/issues about data	53	15
Concerns/issues about results	53	15
Rogue editor	44	12.5
Plagiarism of article	41	11.6
Misconduct by the author	37	10.5
Duplication of article	35	9.9
Falsification/fabrication of data	35	9.9
Paper mill	30	8.5
Euphemisms for plagiarism	27	7.6
Randomly generated content	23	6.5
Error in data	22	6.2

Table 5. List of the 15 most common reasons for retraction.

Table 6 presents the frequency and percentage of retractions of scientific articles in the field of "business, management, and accounting," grouping the reasons into general categories. The data reveal that "scientific misconduct" is the predominant cause of retractions, accounting for 72.6% of cases. This includes behaviors such as data falsification, plagiarism, and manipulation of peer review, which underscore the importance of ethical integrity in academic research. Second, "unintentional errors," including methodological or calculation errors, account for 20% of retractions. While these errors do not necessarily indicate bad faith, they underscore the necessity to enhance the review and validation procedures for results prior to publication. Finally, retractions attributable to "journal or editor errors," such as technical problems or unwarranted editorial decisions, account for 4.1% of cases. While not as prevalent, these instances underscore the shared responsibility of authors and editors to uphold the standards and credibility of scientific literature.

Retraction category	Number of retracted documents	Retraction percentage (%)
Error in journal	15	4.1
Unintentional error	73	20
Misconduct	265	72.6
No information	12	3.3
Total	**365**	**100**

Table 6. Frequency and percentage of retraction by category.

3.5. Publication sources

As illustrated in Table 7, a thorough investigation has been conducted into the publishers and journals that have experienced the highest number of retracted articles within the "business, management and accounting" field. Additionally, the study has evaluated the quality of these journals by assessing their impact quartile. With regard to publishers, 28 publishing houses were identified as having at least one retracted publication. The five publishers with the highest number of retractions are as follows: Springer (68 articles, 18.6%), Taylor and Francis (58 articles, 15.9%), Elsevier (55 articles, 15.1%), Wiley (47 articles, 12.9%), and Hindawi (38 articles, 10.4%). These publishers wield significant influence on a global scale, underscoring the fact that retractions are not confined to inferior publications but also

extend to esteemed journals. With regard to journals, the 365 retractions are disseminated across 157 different journals. *The Journal of Advanced Transportation* has the distinction of having the highest number of retracted articles (39 articles, 10.7%), followed by the *Journal of Sustainable Finance and Investment* and *Operations Management Research* (both with 23 articles, 6.3%). Furthermore, the *International Journal of System Assurance Engineering and Managemen*t has presented 22 retractions, constituting 6% of the total publications, while the *Journal of Cleaner Production* has documented 12 retractions, amounting to 3.3% of its publications. With respect to the quality of academic journals, a salient finding is that 60.3% of retractions originate from journals classified in quartile 1 (Q1), representing the most prominent journals within their respective domains of expertise. In the second quartile (Q2), journals accounted for 26.8% of retractions, indicating that 87.1% of retracted articles were published in medium to high-impact journals. Lower-impact journals, defined as those in Q3 and Q4, account for 10.6% of retractions, while 2.2% of retractions correspond to journals not assigned to a quartile.

	Number of retracted documents	Retraction percentage (%)
PUBLISHER		
Springer	68	18.6
Taylor and Francis	58	15.9
Elsevier	55	15.1
Wiley	47	12.9
Hindawi	38	10.4
JOURNALS		
Journal of Advanced Transportation	39	10.7
Journal of Sustainable Finance and Investment	23	6.3
Operations Management Research	23	6.3
International Journal of System Assurance Engineering and Management	22	6
Journal of Cleaner Production	12	3.3
QUARTILE OF JOURNALS		
Q1	220	60.3
Q2	98	26.8
Q3	33	9
Q4	6	1.6
SQ	8	2.2

Table 7. Characteristics of publication sources.

3.6. Retraction times

Figure 6 reveals a clear trend in the timing of retractions of scientific articles in the field of "business, management, and accounting." The majority of retractions (60.5%) transpire within the initial two years following publication, with 37.8% of the documents retracted within the first year, and 22.7% between 12 and 24 months.. The frequency of retractions exhibits a decline over time. A study of a sample of articles published between 24 and 48 months after the publication date revealed that 17% of articles were retracted, with only 16.2% of retractions occurring after 48 months. Additionally, a proportion of documents, amounting to 6.3%, lack the provision of precise information regarding the timing of retraction. These results suggest that problems leading to retraction are often detected relatively early, likely due to continuous review processes or the early exposure of errors or misconduct. However, it is also evident that certain issues may arise several years after publication, underscoring the necessity of sustained vigilance regarding the quality and integrity of scientific publications over time.

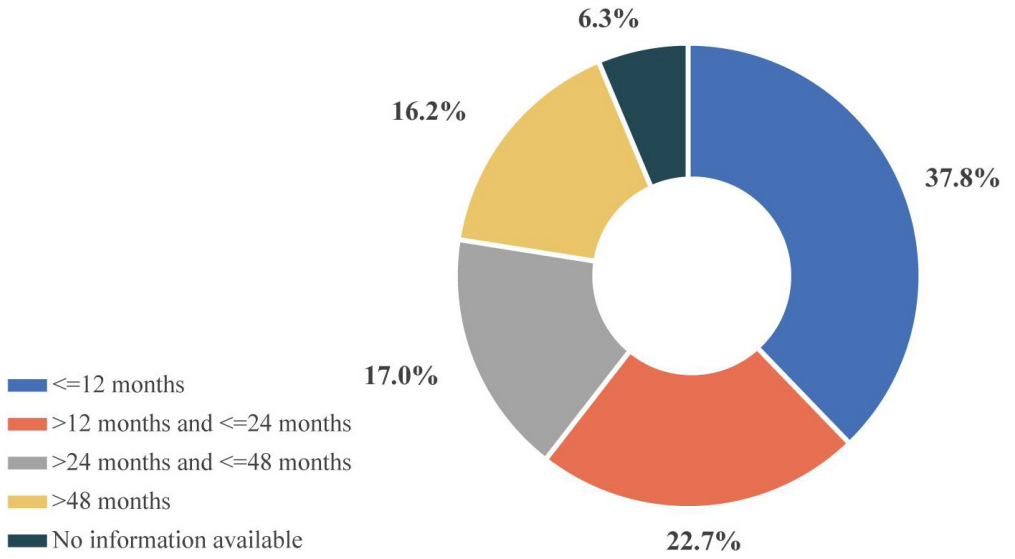

Figure 6. Retraction period from the date of publication.

4. DISCUSSION

The findings of this study indicate a persistent increase in the number of retracted articles in BMA published between 2000 and 2023, with a particularly salient rise from 2012 onward. This increase, as substantiated by linear regression analysis, aligns with the findings reported in related research conducted in other fields (Koo & Lin, 2024; Marco-Cuenca *et al.,* 2019; Mousavi & Abdollahi, 2020; Rubbo *et al.,* 2017; Stavale *et al.,* 2019). This increase in the frequency of retractions can be attributed to heightened ethical and methodological vigilance in scientific publishing, as well as the use of more advanced tools to detect academic malpractice (Campos-Varela & Ruano-Raviña, 2019; Grieneisen & Zhang, 2012). However, it is also plausible that this phenomenon reflects an intensification of the pressure to publish in indexed journals. This increased pressure has been identified as a contributing factor to the adoption of questionable research conduct (Fanelli, 2013; Steen *et al.,* 2013). One of the most notable hallmarks is the high proportion of retractions in high-impact journals (Q1 and Q2), which account for 87.1% of cases. This suggests that scientific practices are not limited to the publication of lesser-quality work, but this could also affect even the most prestigious journals in the field. An analysis of this phenomenon can be facilitated by considering it from at least two complementary perspectives. On the one hand, the journals Q1 and Q2 have greater visibility and a broader readership, which facilitates the early detection of errors or irregularities (Fanelli, 2013; Teixeira da Silva, 2022). On the other hand, the intense pressure to publish in high-impact journals —which can be pivotal in obtaining academic recognition, financing, and professional advancement— can motivate unethical practices among researchers who seek to adhere to institutional requirements or progress in their careers (Steen *et al.,* 2013; Tourish & Craig, 2020). These structural tensions within the scientific system offer a partial explanation for the elevated incidence of retractions observed in the most prominent journals within the field.

Geographically, China and the United States lead in the absolute number of retracted articles, consistent with their high scientific output in business. However, when analyzing the retraction rate as a proportion of the total volume of publications, countries such as Saudi Arabia and Pakistan exhibit significantly higher rates. This finding is consistent with the extant literature, which suggests that certain countries are more prone to retractions (Sebo & Sebo, 2025b). This phenomenon may be associated with the aforementioned countries' reliance on bibliometric metrics for academic accreditation and policies that incentivize publication in indexed journals without ensuring quality and ethical standards in research (Campos-Varela & Ruano-Raviña, 2019). These results underscore

the necessity of incorporating institutional and regulatory factors into analyses of scientific integrity. The co-authorship network analysis reveals the existence of clusters of researchers with multiple retractions, indicating systematic patterns of misconduct within certain research groups. The identification of authors with a greater number of retracted articles suggests the potential institutionalization of these practices within specific collaborative settings. This finding aligns with the conclusions of previous studies, which have identified scientific misconduct as a systemic problem rather than a mere individual issue. These studies have demonstrated that the pressure to publish and the absence of internal controls in academic work dynamics are key factors that contribute to the perpetuation of scientific misconduct (Chapman & Lindner, 2014; Ribeiro *et al.,* 2022).

With respect to the underlying causes of retraction, scientific misconduct has been substantiated as the predominant factor, accounting for 72.6% of all documented cases. Within this category, data falsification, peer review manipulation, and plagiarism are the most common forms of misconduct. These results align with previous research, which has documented that while unintentional errors and editorial errors can lead to retractions, most cases are related to dishonest practices that compromise the credibility of scientific knowledge (Campos-Varela & Ruano-Raviña, 2019; Fang *et al.,* 2012). Our findings are consistent with those of other studies analyzing the area, such as Basumatary *et al.* (2025), who identified false peer review and plagiarism as the most common reasons for retractions in BMA research in India. In a similar vein, Martínez and Zahn's (2025) study on the causes of retraction in Latin American knowledge areas revealed that 83.3% of documents in the business economics field were retracted due to misconduct. This finding underscores the importance of strengthening mechanisms for detecting and preventing research malpractice, including scientific audits and increased transparency in peer review processes. A notable finding is the average retraction time, which is observed to be 31.08 months. A total of 60.5% of articles are retracted in the first few years after their publication, which indicates that the literature detection and correction processes are working relatively quickly. The results of this study align with those reported by Basumatary *et al.* (2025), which found that 84.4% of business retractions in Indian science occurred in the years following its publication. However, the observation that some retractions occurred after a period of four years suggests the potential for methodological or ethical problems to remain concealed for extended periods. This underscores the necessity for continuous and diligent monitoring of the scientific literature to detect and address any potential irregularities that may emerge.

5. STUDY LIMITATIONS

A primary constraint of the study is the exclusive utilization of RW as a data source. While this database is one of the most comprehensive retraction records, its coverage may not be exhaustive, especially when compared to other platforms such as Scopus and Web of Science (Bakker & Riegelman, 2018; Sebo & Sebo, 2025a). Future research could expand this analysis by considering other databases and examining the institutional factors that influence article retraction in BMA. A notable limitation is the average retraction time of approximately 31 months, suggesting that some articles published in recent years may not have yet undergone retraction, which could influence the observed trends. The absence of standardized guidelines for the dissemination of retraction notifications complicates the determination of whether a retraction was initiated voluntarily by the authors or imposed by the journals. This limitation impedes the discernment of specific patterns of misconduct.

6. CONCLUSIONS

This study makes a significant contribution to the existing body of knowledge concerning scientific integrity in the field of BMA. It does so by conducting a comprehensive analysis of retractions indexed in Scopus and reported by RW, with a focus on publications from the period between 2000 and 2023. The results of this study allow us to gauge the magnitude of flawed literature in scientific production and highlight the fragility of some of the pillars on which trust in academic knowledge is based.

While the figures are comparatively low in relation to the total number of publications, they do reveal systematic patterns of misconduct and expose ethical, editorial, and institutional gaps that require urgent attention. This study demonstrates that poor academic practices are not exclusive to the academic sphere and that their consequences can extend beyond it, affecting economic, social, and political decision-making. Consequently, incorporating the analysis of retractions as a component of the study of scientific production at the BMA facilitates the identification of system weaknesses and promotes the development of a more critical, ethical, and reflective research culture. The results of this study suggest the need for further exploration of understudied dimensions, including the relationship between institutional incentive policies, academic culture in different geographical contexts, and the evolution of scientific review mechanisms. The objective of our research was to stimulate critical reflection on the construction, validation, and dissemination of knowledge in the business field. The responsibility for cultivating a culture of scientific integrity lies with a variety of entities, including editors, reviewers, training institutions, evaluation systems, and the research community. Advancing toward more rigorous, transparent, and socially responsible science is possible through a structural and collaborative approach.

Conflict of interest

The authors of this article declare that they have no conflict of interest.

Contribution statement

Conceptualization: Cristian Zahn-Muñoz, Nancy Alarcón-Henríquez, Patricio Viancos-Gonzáles

Data curation: Cristian Zahn-Muñoz

Formal Analysis: Cristian Zahn Muñoz, Ezequiel Martínez-Rojas

Methodology: Cristian Zahn Muñoz, Patricio Viancos-González, Ezequiel Martínez-Rojas

Writing – Original Draft: Nancy Alarcón-Henríquez, Patricio Viancos-González

Writing – Review and Editing: Cristian Zahn Muñoz, Nancy Alarcón-Henríquez, Patricio Viancos-González, Ezequiel Martínez-Rojas

Statement of data consent

The data generated during the development of this study have been included in the manuscript. ●

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