JDIS | Journal of Data and Information Science

Research Notes

The role of national research policy and publisher practices in shaping retraction dynamics: A case study of Romania

Vasile Cernat[1†], Jaime A. Teixeira da Silva[2]

[1] George Emil Palade University of Medicine, Pharmacy, Science, and Technology of Târgu Mureș, N. Iorga St. 1, 540088 Târgu Mureș, Romania
[2] Independent researcher, Ikenobe 3011-2, Kagawa-ken 761-0799, Japan

Citation: Cernat, V., & Teixeira da Silva, J. A. (2025). The role of national research policy and publisher practices in shaping retraction dynamics: A case study of Romania. *Journal of Data and Information Science*, 10(2), 6–12. https://doi.org/10.2478/jdis-2025-0022

DOI: 10.2478/jdis-2025-0022 **CSTR:** 32295.14.jdis-2025-0022

Received: Jan. 8, 2025; Revised: Mar. 6, 2025; Accepted: Mar. 15, 2025

ABSTRACT

Purpose: This study examines the impact of research policy changes on scientific retractions of publications authored by Romanian authors, focusing on national trends and the interplay between policy reforms and publishing practices.

Design/methodology/approach: Using data from the Retraction Watch Database and Web of Science (WoS), 188 unique retractions involving Romanian authors (2000–2022) were analyzed. The study compared retraction patterns before and after the 2016 reforms, which prioritized the publication of articles in WoS-indexed journals over non-WoS outputs.

Findings: The analysis identified two key trends: (1) before the 2016 reforms, retractions predominantly involved non-WoS journals (99 non-WoS retractions to 38 WoS retractions), a trend that reversed post-reform (16 non-WoS to 35 WoS), and (2) while the total number of WoS-indexed retractions increased after the reforms, the retraction rates for WoS articles remained stable. Post-reform reliance on MDPI journals, which have low retraction rates, partially explains this stability. Excluding MDPI publications, retraction rates for articles and reviews increase by 14.91%, aligning with patterns seen elsewhere.

Research limitations: The study focuses on retractions involving Romanian authors, limiting its generalizability. Furthermore, reliance on database records may not fully capture all retractions.

Practical implications: These findings underscore the need for research policy reforms to consider a broader range of effects, and the need for nuanced interpretations of retraction data, which are influenced by a complex range of factors, including specific publisher practices.

Originality/value: This research is the first to investigate the complex relationship between research policy reforms, publisher behavior, and retraction trends.

Keywords EU; Integrity; Misconduct; Publishing; Research Policy; Retractions

1 Introduction

Most studies on retractions focus on national and international trends, emphasizing retraction types and reasons. This study examines a less explored issue: the potential effects of research policy changes on scientific retractions. It centers on Romania, a country located at the eastern edge of the European Union (EU) in a geopolitically sensitive region.

Previous research assessing retraction rates in Romania found that the country exhibits a high or very high rate of retractions compared to other EU nations. Teixeira da Silva and Erfanmanesh (2021) found that Romania ranked tenth among 27 EU and eighth among closely associated non-EU nations. They used data from the Retraction Watch Database (RWDB), Web of Science (WoS), and Scopus up to October 2020, identifying 136 entries in the RWDB, including corrigenda and retractions, with 28 and 12 retractions recorded in WoS and Scopus, respectively. Marco-Cuenca et al. (2021), using the RWDB and WoS, analyzed EU nations based on three retraction reasons (falsification, fabrication, and plagiarism) and found that Romania ranked sixth overall among EU nations and third when only plagiarism was considered.

Beyond examining sheer retraction volumes, it is crucial to assess whether retractions vary systematically over time in response to changes in research policy. A recent analysis highlighted that Romania's implementation of an inconsistent research policy mix, beginning in 2016, has had significant consequences for national research output. First, although the reforms imposed stringent quantitative publication requirements, the sharp and sustained reduction in funding negatively impacted overall publication numbers compared to pre-reform trends. Specifically, the results showed that Romania's overall WoS output would have been 29.85–31.21% higher in the absence of the reforms. Second, the reforms prioritized publications in WoS journals with a Clarivate impact factor, leading to a steep decline in previously dominant formats, such as national journals and proceeding papers, which were explicitly sidelined. Third, while the total number of WoS-indexed articles increased modestly post-reform, there was a very strong surge in articles published in Multidisciplinary Digital Publishing Institute (MDPI) journals (Cernat, 2024). These shifts likely have implications for scientific retractions.

Based on these studies, we propose two main hypotheses:

(1) The post-2016 exclusion of previously preferred outlets may have altered the retraction landscape. Specifically, we hypothesize that before 2016, retracted papers were predominantly published in national or international journals not indexed in WoS, but after 2016, this pattern should gradually reverse, with retractions increasingly concentrated in WoS-indexed journals.

(2) The combination of reduced funding and increased pressure to publish in high-impact WoS journals post-2016 may also influence retraction rates. We tested the hypothesis that the shift toward WoS-indexed articles and review articles—formats most incentivized by the reforms—is likely to result in higher retraction rates for these outputs compared to both (a) pre-2016 national trends and (b) patterns observed in other European countries.

2 Data and methods

To test the first hypothesis, we merged the 165 entries from the RWDB① with the 73 retracted papers from WoS, creating a new dataset of 188 unique retractions involving works published by Romanian authors between 2000 and 2022. We stopped at 2022 because, according to the RWDB data, the average distance between publication and retraction is around two years (Van Noorden, 2025). To test the second hypothesis, we zoomed in from the overall WoS output to retracted WoS articles and review articles, comparing pre- and post-reform periods for Romania, and two groups of countries, one from East Europe (i.e., Poland, Czech Republic, Slovenia, Slovakia, Hungary, Bulgaria, Croatia, Serbia, and Ukraine), and the other one from West Europe (i.e., Germany, France, Netherlands, Belgium, Spain, Italy, Portugal, Greece, Sweden, Denmark, Finland, Austria, and Ireland).

3 Results and discussion

Consistent with the first hypothesis, the ratio of non-WoS to overall WoS retractions shifted significantly between the 2000–2015 and 2016–2022 periods. During 2000–2015, the ratio was 99:38, favoring non-WoS retractions. In contrast, during 2016–2022, the ratio reversed to 16:35, favoring WoS retractions ($\chi^2(1) = 24.47$, $p < .001$). This trend is illustrated in Figure 1 and Table 1.

The data presented in Table 1 could also partially address the second hypothesis. Specifically, the annual number of retracted non-WoS papers decreased from an average of 5.8 in the pre-reform period to 2.1 post-reform. Conversely, retracted WoS publications increased from 2.4 to 5.0 per year. While this may seem consistent with the second hypothesis, this is more likely to reflect the very low volumes of WoS publications in the first half of the 2000–2015 period (between 2000 and 2010, Romania published fewer articles and review articles than between 2011–2015).

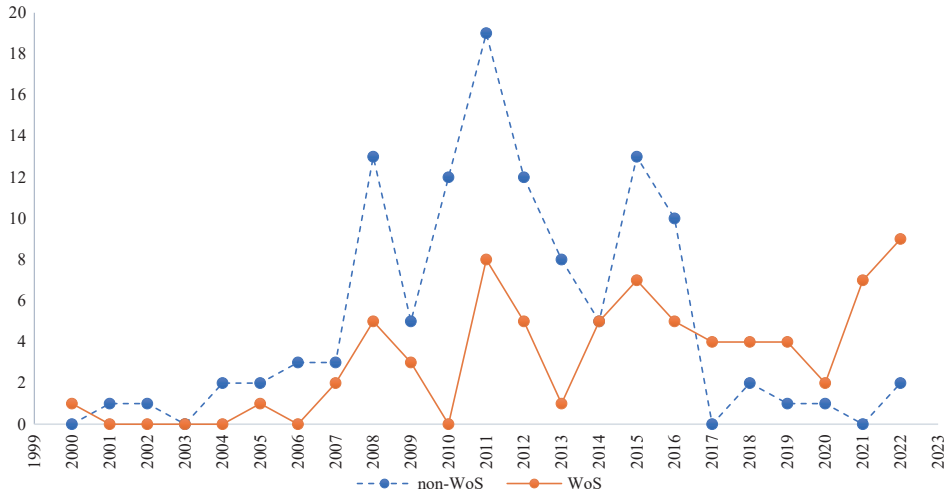

Figure 1. The dynamics of retracted papers authored by Romanian scientists during the 2000–2022 period. The dashed line represents papers not indexed in WoS while the continuous line represents WoS-indexed papers.

Table 1. Retracted papers authored by Romanian scientists by years and WoS-indexing status.

Year	non-WoS	WoS	Total
2000	0	1	1
2001	1	0	1
2002	1	0	1
2003	0	0	0
2004	2	0	2
2005	2	1	3
2006	3	0	3
2007	3	2	5
2008	13	5	18
2009	5	3	8
2010	12	0	12
2011	19	8	27
2012	12	5	17
2013	8	1	9
2014	5	5	10
2015	13	7	20
2016	10	5	15
2017	0	4	4
2018	2	4	6
2019	1	4	5
2020	1	2	3
2021	0	7	7
2022	2	9	11
Total	115	73	188

Research Notes

The data for articles and review articles reveal a different trend. As shown in Figure 2a and Table 2, Romania's retraction rate for these outputs remained constant across the pre- and post-reform periods, at 3.32 and 3.31 retractions per 10,000 published articles, respectively ($\chi^2(1) = .00$, p = ns). By contrast, in Western Europe, the retraction rate for articles and review articles decreased from 2.96 to 2.60 ($\chi^2(1) = 10.40$, $p < .01$), while in Eastern Europe, it increased from 2.04 to 3.03 ($\chi^2(1) = 14.21$, $p < .001$). This is not consistent with the second hypothesis.

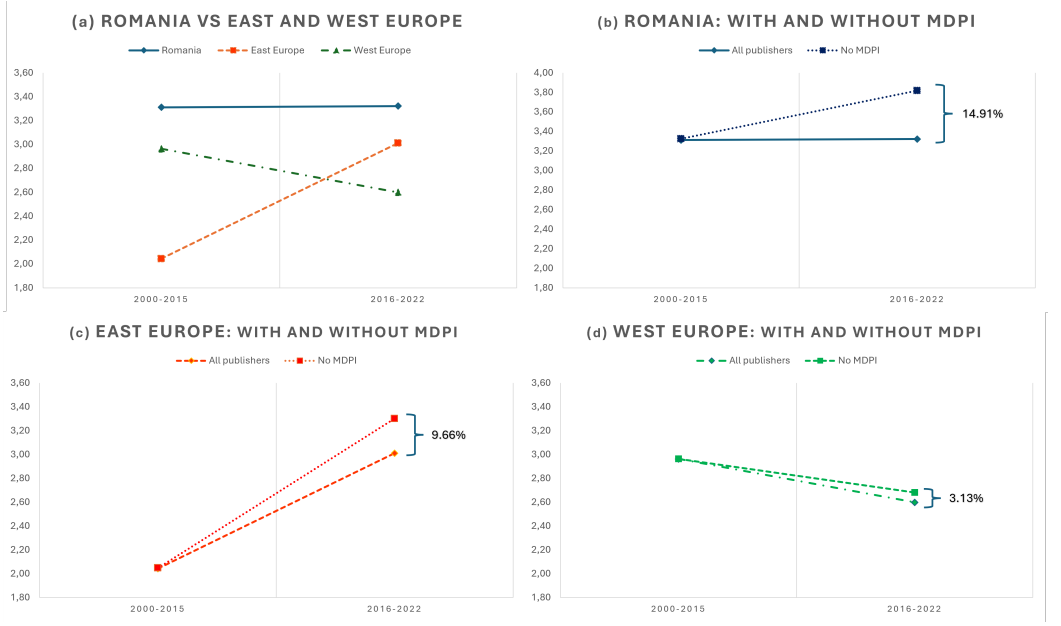

Figure 2. Diagram (a) displays the rate of retracted WoS-indexed articles and review articles by country or region (Romania vs. East and West Europe) and period (2000–2015 vs 2016–2022). Diagrams (b), (c), and (d) show how retraction rates changed when MDPI publications were excluded from the analysis.

Table 2. Published and retracted WoS articles and review articles by country or region, publishers, and period.

		All publishers		MDPI excluded	
Period		2000-2015	2016-2022	2000-2015	2016-2022
Romania	Published	93,619	90,319	93,253	75,981
	Retracted	31	30	31	29
	Retraction rate	3.31	3.32	3.32	3.82
East Europe	Published	841,960	717,319	839,694	635,955
	Retracted	172	216	172	210
	Retraction rate	2.04	3.01	2.05	3.30
West Europe	Published	5,315,488	3,851,361	5,299,627	3,566,590
	Retracted	1,575	1,001	1,570	956
	Retraction rate	2.96	2.60	2.96	2.68

Why did Romania's retraction rate for articles and review articles remain virtually the same pre- and post-reform? Romania stands out globally in only one critical respect regarding article production: its post-reform national research output became disproportionately concentrated in MDPI journals. MDPI accounted for 98% of Romania's increased publication output in 2021 compared to 2013—the highest share worldwide (Cernat, 2024). In addition, MDPI has a markedly low retraction rate compared to other major publishers. According to the WoS data, between 2016 and 2022, the rate of retracted papers per 10,000 publications for Springer-Nature, Wiley, Taylor & Francis, Sage, and Elsevier were 11.98, 10.62, 8.59, 17.65, and 5.47, respectively. In contrast, MDPI had a rate of only 2.01.

These idiosyncrasies probably shaped Romania's publishing profile during the 2016–2022 period, characterized by a strong preference for MDPI journals and the low retraction rate associated with this publisher. Figures 2b, 2c, and 2d show that, when MDPI publications were excluded from the analysis, the country's retraction rate for 2016–2022 was 14.91% higher than between 2000–2015. This seems to be consistent with the second hypothesis.

Furthermore, Romania's post-reform retraction rate decreased in the areas where MDPI's output increased the most. Specifically, Romania's growth in MDPI review articles far exceeded that of MDPI articles: MDPI review articles represented over 30% of all the review articles published between 2016 and 2022, whereas MDPI articles made up nearly 15% of total articles. However, while the retraction rate for articles remained relatively constant at around 3 per 10,000 publications, the retraction rate for review articles decreased from 14.68 pre-reform to 7.98 post-reform. Unfortunately, this analysis is limited by the low number of retractions of review articles. Moreover, besides publisher behaviors, we cannot rule out the influence of other significant factors such as reforms and researcher behaviors in other countries, such as Ukraine (Hladchenko, 2022), Poland (Korytkowski & Kulcyzcki, 2019) or other post-socialist countries (Hladchenko & Moed, 2021), volunteer watchdog behavior pre- and post-reform (Oransky, 2018), changes in the pattern of authorship, and others.

To conclude, while Romania's latest research policies have likely redefined its retraction patterns, current findings underscore the importance of considering both policy changes and publisher characteristics in understanding national retraction dynamics.

Author contributions

Vasile Cernat (vasile.cernat@umfst.ro) and Jaime A. Teixeira da Silva (jaimetex@yahoo.com) contributed equally to the following aspects of the paper: conceptualization, visualization, interpretation, writing, and editing. Vasile Cernat extracted data from RWDB and WoS, and conducted the analyses.

Data availability

The data that support the findings of this study are available on request from the corresponding author.

References

Cernat, V. (2024). The unprincipled principal: How Romania's inconsistent research reform impacted scientific output. *Scientometrics*, 129(9), 5557–5575. https://doi.org/10.1007/s11192-024-05118-9

Hladchenko, M. (2022). Implications of publication requirements for the research output of Ukrainian academics in Scopus in 1999–2019. *Journal of Data and Information Science*, 7(3), 71–93. https://doi.org/10.2478/jdis-2022-0016

Hladchenko, M., & Moed, H. F. (2021). The effect of publication traditions and requirements in research assessment and funding policies upon the use of national journals in 28 post-socialist countries. *Journal of Informetrics*, 15(4), 101190. https://doi.org/10.1016/j.joi.2021.101190

Korytkowski, P., & Kulcyzcki, E. (2019). Examining how country-level science policy shapes publication patterns: The case of Poland. *Scientometrics*, 119(3), 1519–1543. https://doi.org/10.1007/s11192-019-03092-1

Marco-Cuenca, G., Salvador-Oliván, J. A., & Arquero-Avilés, R. (2021). Fraud in scientific publications in the European Union. An analysis through their retractions. *Scientometrics*, 126(6), 5143–5164. https://doi.org/10.1007/s11192-021-03977-0

Oransky, I. (2018). Volunteer watchdogs pushed a small country up the rankings. *Science*, 362, 395. http://doi.org/10.1126/science.362.6413.395

Teixeira da Silva, J. A., & Erfanmanesh, M. A. (2021). Errata and retractions associated with research papers published by authors with Hungarian affiliations. *European Science Editing*, 47, e60203. https://doi.org/10.3897/ese.2021.e60203

Van Noorden, R. (2025). These universities have the most retracted scientific articles. *Nature*, 638, 596–599. https://doi.org/10.1038/d41586-025-00455-y