Publishing infrastructures in the semi-periphery: How research assessment shapes the research output of Spain and Lithuania

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Abstract

National research assessment policies, designed to boost international competitiveness, have intensified "publish or perish" pressures and reshaped the global academic publishing landscape. However, the impact of these pressures on the domestic publishing infrastructures of semi-peripheral nations remains underexplored. This paper investigates how a nation's domestic publishing infrastructure shapes whether new, high-volume open-access publishing models function as a portfolio addition or a systemic substitute. Using a comparative mixed-methods analysis of Spain and Lithuania, we combine bibliometric data from the Web of Science (2004–2024) with 28 semi-structured interviews with researchers. The findings reveal two divergent, rational strategies. In Spain, a resilient domestic publishing infrastructure, accommodated by a flexible evaluation system, allowed researchers to adopt new publishers as a pragmatic portfolio addition to an already diverse set of options. In stark contrast, Lithuanian research assessment policies actively marginalised domestic journals, creating acute strain on the country's publishing ecosystem. Researchers in Lithuania thus adopted these same new publishing models as a systemic substitute and a survival measure. We conclude that control over a community-managed domestic publishing infrastructure is a key factor shaping the autonomy of a national academic system. It is this infrastructure that separates a strategy of dependent displacement from one of autonomous coexistence: a crucial lesson for policymakers engaged in global research assessment reforms.

Keywords

research evaluation; science policy; national innovation system; scholarly publishing; scientometrics

1. Introduction

The rapid growth in the number of researchers worldwide [1] and the formalisation of metrics [2] have intensified the "publish or perish" pressure and the demand for new publishing venues

[3–4]. The rise of open-access journals was a natural outgrowth of this demand, but this expansion has been controversial, generating a contentious debate around so-called "predatory" publishing and its links to the open science umbrella [5]. This discourse, initially shaped by Jeffrey Beall's critique of the author-pays model [6], has become more complex over time, with researchers now using a range of evolving terms such as "dubious," "questionable," or "grey" to describe a complex spectrum of controversial publishing practices [7–9].

While early debates focused on the behaviour of specific publishers, a growing body of research argues that the root cause lies in deeper systemic problems [10–13]. The focus has rightfully shifted to national research assessment policies as a primary driver of author behaviour [14]; these policies can be considered a key mechanism of a broader global trend towards an "accelerated academy," a culture of increasing speed and competition that has even prompted a counter-movement advocating for "slow science" [15]. The situation in Spain is particularly illustrative: there, changes in national evaluation policies led authors to shift en masse to specific publishers, sparking an intense public dispute [16–17]. Indeed, recent large-scale analyses have identified a growing increase in cases of "extreme publishing behaviour," linking its spectacular rise in countries such as Spain directly to these national incentive systems [18]. Numerous case studies reveal how national research evaluation systems (through journal lists, inconsistent reforms, or based on the metric system) can powerfully incentivise researchers to publish in controversial journals [19–23].

This research arrives at a pivotal moment for global science, with a growing consensus that the current systems for both research evaluation and scholarly publishing are no longer effective. This has led to two major, interconnected reform movements. First, the methods used to assess research are undergoing a profound re-evaluation worldwide, with increasing calls to replace simplistic metrics with more qualitative and responsible forms of assessment [24]. Second, and in parallel, the system of scholarly publishing is facing a crisis of commercialisation, with high-level reports arguing that market incentives often fail to align with the core goals of science [25–26]. In response to this, a Diamond Open Access movement[1] is gaining momentum. This movement champions a community-owned, non-commercial model of publishing that is free for both authors and readers, calling for the support of national and regional publishing infrastructures to ensure their resilience [27–28]. It is in this dynamic context of crisis and reform that understanding the foundational publishing structures of national research systems becomes most urgent.

European academics, like their peers abroad, face intense pressure to "internationalise" by publishing in prestigious, core-based journals; this is seen as the ultimate measure of success and the most effective means to accelerate the "cycle of credibility" [29]. Although the link between national evaluation systems and the pressure to publish internationally is well-established, its specific impact on a nation's own publishing infrastructure remains underexplored. Hence, this paper presents a comparative analysis of two semi-peripheral European nations, Spain and Lithuania, with two distinct infrastructural models. Spain possesses what we term a resilient domestic publishing infrastructure, dominated by a large number of journals issued by universities and societies, mainly in Spanish and thus potentially

[1] The 2nd Global Summit on Diamond Open Access was held from 8 to 13 December 2024 at the University of Cape Town in South Africa. Summit Report https://doasummit.uct.ac.za/summit-report/ accessed on 28 July 2025.

reaching readers and authors throughout Latin America. While this domestic output constitutes a minority share of the nation's total WoS publications, its sheer scale and stability provide a crucial buffer against total dependency on the Anglophone core [30]. Lithuania, meanwhile, represents a small academic system in which national policies have actively dismantled the role of the domestic institutional infrastructure within the research assessment system, even as this infrastructure continues to function and obtain financial support [31].

This study is therefore guided by one central research question:

How do different national research assessment systems, acting upon different domestic publishing infrastructures, lead to divergent publication strategies in the semi-periphery?

To answer this central question, we explore two complementary sub-questions:

1. *What are the key differences in the publication portfolios of scholars in Lithuania and Spain with regards to the roles of domestic journals, major commercial publishers, and new players such as MDPI?*
2. *How do the specific pressures of the Spanish and Lithuanian research evaluation systems interact with their different infrastructures to explain why new publishing models function as a portfolio addition in one context and a systemic substitute in the other?*

To analyse these divergent national responses, we introduce a conceptual framework built on two pairs of linked terms. The first pair describes the strategic function of new publishing models at the micro-level. We term the Spanish case a portfolio addition, where new open-access publishers are added to a diverse and resilient ecosystem of existing domestic and international venues. We term the Lithuanian case a systemic substitute, where these new publishers function as a replacement for a domestic infrastructure that has been systematically devalued.

These different strategic functions, in turn, lead to two different outcomes at the macro-level. Spain's strategy results in a state of autonomous coexistence, where the national system maintains its own centre of gravity and coexists with the global commercial market from a position of relative strength. Lithuania's strategy, conversely, results in a state of dependent displacement, where the national system has been almost entirely displaced by, and has become dependent upon, the logics of a few external commercial actors.

We argue that these divergent publication patterns are shaped by the interplay between national research assessment policies, the strategic actions of academic communities, and, crucially, the policies' treatment of the domestic publishing infrastructure. By comparing the two cases, we demonstrate that Spanish scholars' ability to leverage a vast domestic ecosystem of community-controlled journals affords them a significant strategic advantage. They are able to operate across a diversified portfolio of three distinct publishing circuits: traditional commercial publishers, a resilient domestic infrastructure, and new open-access models.

In contrast, Lithuanian scholars, whose domestic outlets have been devalued by national policy, are forced to compete in the high-stakes international field without the strategic buffer of a viable domestic circuit. They have rationally turned to accessible, network-based international publishers such as MDPI to achieve career success, leading to a state of greater dependency on a smaller number of external publishing models. This proves that control over a large-scale, community-managed publishing infrastructure is a decisive factor separating a strategy of dependent displacement from one of relative autonomous coexistence.

2. Theoretical framework

This study analyses the publication strategies of scholars in Spain and Lithuania as situated adaptations to the multi-layered pressures of global, national, and institutional academic systems. To build a comprehensive explanatory model, we construct a framework that integrates three levels of analysis. First, we use world-systems theory [32–33] to understand the macro-level dynamics of the global academic field, which establishes a core-periphery structure. Second, we employ Latour and Woolgar's cycle of credibility [34] to analyse the meso-level mechanics of scientific production, focusing on how a nation's publishing infrastructure forms part of the machinery for this cycle. Finally, we draw on Merton's strain theory [35] to explain the micro-level strategic responses of individual actors as they navigate the resulting pressures. Together, these theories allow us to explain why different infrastructural conditions lead to divergent publishing strategies.

2.1. The global academic field and the semi-periphery

To understand the external pressures on nations such as Lithuania and Spain, we first position them within the academic world-system [33]. This system is characterised by a core-periphery structure where core academic nations—defined by their control over the primary means of knowledge production and validation—set the global standards [36–37]. These nations, largely situated in the Anglophone West, form what we call the academic core. Consequently, publications in Web of Science-indexed journals, overwhelmingly owned by publishers from these nations, function as the dominant currency of the global scientific community. This creates intense pressure for "internationalisation," where publishing in prestigious, core-based journals becomes the ultimate measure of success for academics and institutions worldwide [38–40].

Both Lithuania and Spain occupy a semi-peripheral position in this global field, which creates a fundamental tension. While differing in scale—Spain is now 11th in global scientific output, while Lithuania is 63rd[2]—both nations are driven to compete according to the standards set by the core, yet they grapple with historical disadvantages and lower performance on the elite-tier indicators that define the top of the global hierarchy [41]. This context explains the universal "publish or perish" pressure felt by researchers and the corresponding focus of national policymakers on improving performance in global rankings, a phenomenon well-documented in both Spain [16–17] and Lithuania [21,42].

2.2. The cycle of credibility and publishing infrastructure

To analyse the internal mechanics of the academic system, we use Latour and Woolgar's cycle of credibility [34]. In this model, credibility is the central currency of science, which scientists seek to maximise. The cycle functions as an economic system of investment and return: a scientist invests their existing credibility to gain access to resources (funding, instruments, data), which allows them to produce new claims. These claims are inscribed into articles, which are then submitted for publication. If an article is published and positively received (i.e., read

[2] SJR Scimago Journal & Country Rank, 2024, https://www.scimagojr.com/countryrank.php accessed on 25 September 2025

and cited), the author's credibility is enhanced. This new, larger stock of credibility can then be reinvested into more ambitious projects, securing more resources and starting the cycle anew. While Latour and Woolgar's cycle of credibility provides a powerful general model, recent research has shown that the specific mechanisms for accumulating credibility and the speed of the cycle can vary significantly across different epistemic cultures [43].

Within this framework, the published article is not merely a report of work done; it is the essential vehicle for converting research labour into measurable credibility. The global hierarchy described by Wallerstein can thus be seen as a system of credibility markets. As Fernanda Beigel [44] has argued, this system is not monolithic but is composed of multiple "segmented circuits" (mainstream, regional, and national), each with its own rules and currencies of prestige. Journals and publishers based in the core function as the most lucrative of these circuits, offering the highest "return on investment" in terms of globally recognised credibility.

This is where a nation's domestic publishing infrastructure becomes critical. We conceptualise this infrastructure as the local machinery that allows researchers to participate in credibility cycles. A resilient infrastructure, as seen in Spain, may help to provide a stable, community-controlled domestic credibility cycle. Its network of university and society journals offers accessible and reliable, if less globally prestigious, avenues for converting research into publications. This creates a parallel circuit for credibility accumulation, giving scholars a strategic buffer and a diversified set of options.

A dismantled infrastructure, as in Lithuania, no longer possesses this local machinery. Researchers are left with fewer options, forcing them to compete almost exclusively in the high-risk, high-reward global credibility market controlled by the core. This creates a more direct and acute pressure to find any viable mechanism for converting their work into internationally recognised outputs.

2.3. Strain and strategic response (portfolio addition vs systemic substitution)

Finally, to understand the behaviour of individual researchers, we draw on Robert K. Merton's strain theory [35]. Within the credibility-driven field of science, the culturally prescribed goal is the continuous accumulation of credibility for career survival and advancement. Among the institutionalised means to achieve this goal are the available publishing infrastructures. When a disjunction between the goal and the available means occurs, actors experience strain and pursue adaptive strategies. This framework allows us to interpret the divergent publication patterns in Spain and Lithuania as distinct rational adaptations to different infrastructural conditions.

The Spanish strategy—a portfolio addition. Spanish scholars operate within a system with different functioning credibility circuits: a global one, a domestic/Latin American one and, in some fields, regional ones for regional ones for languages such as Catalan and Basque. They can pursue a diversified portfolio strategy to accumulate credibility. In this context, the emergence of new publishing venues—be they journals or entire publishers—functions as an addition to an existing portfolio. These new players become useful means of participating in the global cycle, adopted alongside the stable domestic options without fundamentally changing the diversified structure of the system.

The Lithuanian strategy—a systemic substitute. Having seen their domestic publishing infrastructure dismantled by national policies, Lithuanian researchers experienced a more acute form of strain, as their primary means for local credibility accumulation was removed. The subsequent mass shift to new publishing models is a textbook example of Mertonian innovation: faced with blocked or inefficient avenues, scholars rationally adopted a new and highly effective infrastructure. Here, new journals or publishers do not merely supplement their options; they function as a systemic substitute for the dismantled domestic machinery, offering an accessible and rapid way to convert research into the WoS-indexed publications required for career progression.

3. Methodology

To investigate our research questions, this study employs a comparative mixed-methods research design. This approach was chosen to provide a comprehensive understanding of the research problem, combining a quantitative bibliometric analysis to identify broad publication patterns with semi-structured interviews to uncover the strategic rationales and lived experiences of the scholars themselves. The findings from both methods were integrated at the interpretation stage to corroborate and enrich one another.

3.1. Case selection

This study is built on a comparative analysis of two semi-peripheral European nations: Lithuania and Spain. These cases were selected purposefully not for their similarity, but for their starkly different structural conditions and publishing infrastructures, allowing for a targeted analysis of how these variables impact publishing strategies.

Spain represents a large semi-peripheral country. Its primary strategic advantage is a resilient domestic publishing infrastructure, dominated by a diverse ecosystem of university and society presses. This domestic system is complemented by the large global reach of the Spanish language, which connects its scholars to a vast, transnational academic community, particularly in Latin America.

Lithuania, by contrast, was chosen as a case representing a significantly smaller academic system operating within a unique, non-transnational linguistic context. The small size of the Lithuanian research community has been a long-standing concern in national policy debates [42]. This makes its relationship with the global academic field fundamentally different. Crucially, as this paper details, its domestic publishing infrastructure was actively dismantled by national policies, creating a "single-field dependency" on the external, Anglophone-dominated system.

3.2. Bibliometric analysis

To identify national publication patterns, we conducted a comparative bibliometric analysis of all research articles and reviews with at least one author affiliated with Lithuania or Spain, covering the period from 2004 to 2024. The data was retrieved from the in-house version of the Web of Science (WoS) database maintained by CWTS at Leiden University (including SCIE, SSCI, A&HCI, and ESCI indexes).

We consciously chose the Web of Science for this analysis because it represents the specific, high-stakes arena in which the pressures of national research evaluation are most acutely felt. We acknowledge that vast domestic publishing infrastructures exist in both countries that are not fully indexed in WoS. For instance, a 2020 survey identified 225 active scholarly journals in Lithuania [31], while the Navas-Fernández analysis of Spanish journals [30] found that of 1,748 titles, only 167 were indexed in Web of Science. However, as the national research assessment policies in both Spain and Lithuania are designed to incentivise publication in internationally visible journals with high quartile rankings, WoS is the pivotal database for understanding researchers' strategic responses to these career-defining pressures. It is the de facto "playing field" where the game of international prestige is won or lost.

For each publication, we collected data on the journal publisher and its country of origin. We analysed the annual distribution of publications across different publishers, with a particular focus on large commercial publishers [45] and one of the most discussed open-access publishers, MDPI [46–48]. Additionally, we analysed the output of the WoS-indexed domestic institutional presses in each country. This data was used to examine publishing strategies in two ways: first, by calculating the annual proportional share of different publishers to visualise trends over time, and second, by determining the total proportional share to provide a cumulative overview. This allows for a direct, quantitative comparison of the two nations' publication portfolios.

3.3. Semi-structured interviews

To understand the motivations and rationales of authors, we conducted 28 semi-structured interviews (14 in Lithuania and 14 in Spain). A purposive sampling strategy was used to recruit researchers in each country, with 13 of the 14 interviewees in each sample having authored several papers in MDPI journals, and one in each having no MDPI papers. The inclusion of one researcher with no MDPI publications in each sample was designed to provide a contrasting perspective and to ensure our analysis was not limited only to users of these new platforms. The interviews explored researchers' experiences with publishing pressures, their strategic choices regarding publication venues, and the perceived value of domestic versus international publishing infrastructures.

While the overarching goals were the same, the data collection and analysis process differed slightly between the two cases. In Lithuania, we interviewed 14 researchers from different universities and disciplines between June 2022 and December 2024. All interviews were audio-recorded, transcribed verbatim, and analysed using a general inductive approach [49] to identify recurrent topics. In Spain, we interviewed 14 senior researchers (associate and full professors) from various departments of a major regional institution in July 2025. In this case, detailed notes were taken during the conversations, which then formed the basis of the analysis. In both cases, data collection followed an iterative process wherein some participants were contacted with follow-up questions to clarify and elaborate on emerging themes.

To encourage candid responses about sensitive topics such as institutional strategies and controversial publishing, all interview participants were assured of their anonymity and the confidentiality of their responses. All identifying credentials have been removed from the quoted interview data.

4. Quantitative pressure within national research evaluation systems

Despite their vastly different national contexts, both Spanish and Lithuanian scholars are subject to the same overarching pressures of the global academic field. A primary driver of their behaviour is the intense pressure to publish in top-tier, core-based journals to gain international prestige and meet career requirements. These pressures are not abstract; they are formalised and enforced through powerful national evaluation systems designed to boost competitiveness. The following subsections detail the specific mechanisms of these systems in both Spain and Lithuania, establishing the direct causes of the strategic adaptations we later analyse.

4.1. The Spanish context

In Spain, universities may only hire and promote lecturers who have been approved by the national agency, ANECA, or equivalent regional bodies such as the Catalan AQU. Individual research incentives, known as sexenios, and career accreditations are both awarded by these agencies. Although field-specific commissions retain a certain degree of autonomy that allows some domestic journals to "survive," in practice, the evaluation process is highly rigid and primarily considers papers published in journals with high impact factors and quartiles. As one interviewee noted, the agencies "basically count papers."

This quantitative focus is codified in official regulations that prioritise publications in high-impact international journals, often at the expense of domestic ones. The resulting intense pressure for "internationalisation" is clearly visible in Spain's publication patterns. As the data shows, the push to publish in prestigious, core-based journals has been remarkably successful. Between 2004 and 2020, over half (51.6%) of all Spanish articles in the Web of Science appeared in journals from publishers based in two nations at the academic "core" of the world-system [33]: the United States and the United Kingdom (see Figure 1). Internationalisation is a multi-faceted concept that also includes the diversity of a journal's readership, authorship, and editorial board. However, for the purpose of this study, which focuses on the impact of national research assessment, the journal publisher's country of origin is critical because it is a primary indicator used by policymakers to measure the international prestige of research. We therefore use the country of the publisher as a proxy for revealing the historical and ongoing concentration of the global publishing infrastructure. The fact that over half of Spain's indexed output is published in two core countries reflects both a successful integration of its scholars into the scientific mainstream and the powerful, enduring influence of the major Anglo-American publishers who have historically dominated the Web of Science index.

The system's obsession with high-quartile (Q1) placement in databases such as Journal Citation Reports (JCR) incentivises researchers to adopt what Delgado López-Cózar & Martín Martín [16–17] term "inflationary strategies"—seeking out journals that offer the quickest path to a Q1 publication. The bibliometric data reveals a striking strategic response to these pressures. While the traditional Anglophone core remains dominant, a profound diversification in the geography of "internationalisation" has occurred. As shown in the yearly output chart (Figure 2), the most dramatic trend is the surge in publications in journals based in Switzerland, which grew from just 5% of the national output in 2016 to a peak of 22% by 2022. This signifies that many Spanish researchers, in their quest to secure high-quartile publications, have

opportunistically turned to new and effective international venues outside the traditional core countries. The scale of this strategic shift is remarkable; by 2022, Switzerland was hosting a volume of Spanish research nearly equal to that of United States publishers, illustrating a major recalibration in the pathways researchers use to meet national evaluation demands. A more granular, publisher-level analysis in Section 5 will reveal the specific actors driving this trend.

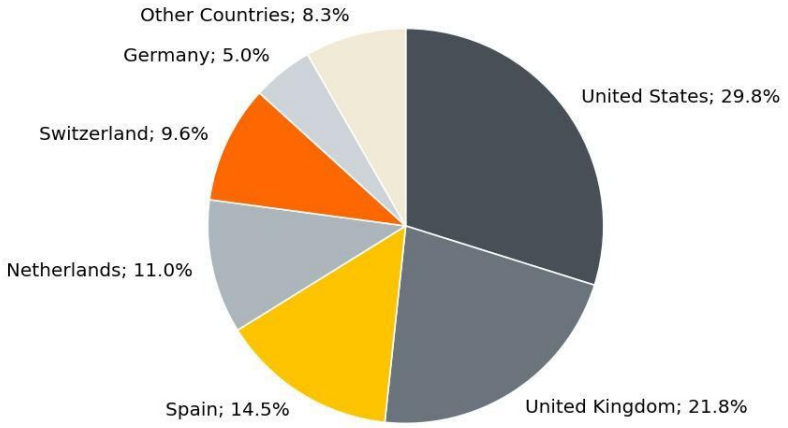

Figure 1. Share of Spanish WoS publications by country of journal publisher (2004–2020).

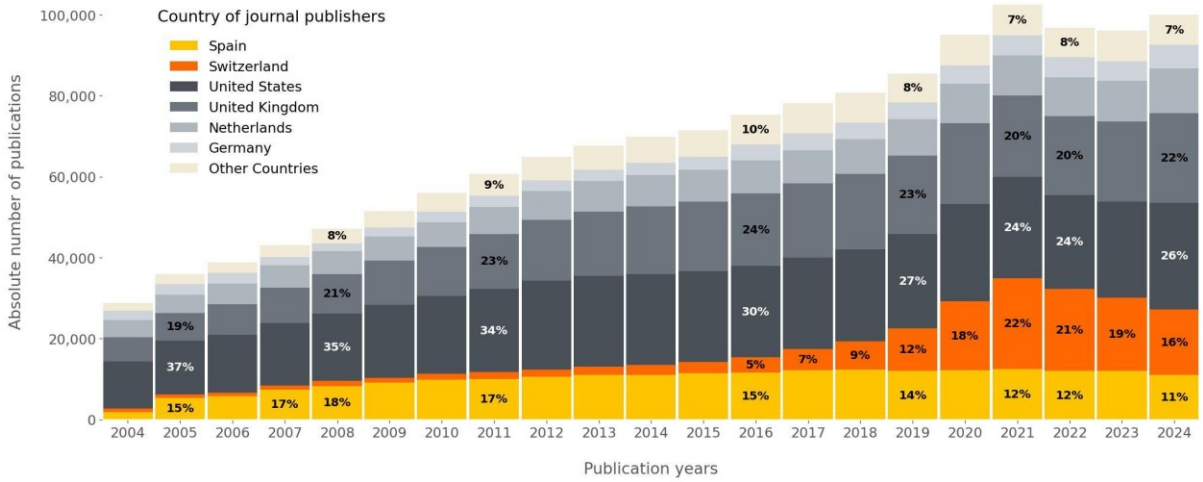

Figure 2. Annual distribution of Spanish WoS publications by country of journal publisher (2004–2024).

4.2. The Lithuanian context

After its separation from the Soviet Union, the nation of Lithuania sought to integrate into the global research community by developing a quantitative research assessment system to incentivise internationally recognised publications—the same rationale as was offered in Spain following Franco's dictatorship. The Lithuanian metrics-based system is built on three main strands: regulations for scientific degrees and ranks, minimum qualification requirements for employment for individuals, and a performance-based funding system for institutions. Lithuanian institutions directly mirror these national regulations in their internal assessments, reinforcing the focus on publishing in high-quartile foreign journals instead of Lithuanian ones [21,42].

The effect of this policy focus, combined with the expansion of the Web of Science (WoS) database, is apparent in the nation's publication data. Initially, the WoS expansion led to the indexing of numerous Lithuanian journals; these quickly became the backbone of the country's indexed output, peaking at 52% of all national WoS publications in 2008 (Figure 3). However, policymakers viewed this domestic dominance as a failure to achieve "true" internationalisation and launched a direct policy counterattack. From 2010, complex citation thresholds and, later, a journal "suspension" list were introduced to actively marginalise domestic outlets. The impact was dramatic: the domestic infrastructure's share of national output plummeted from its 52% peak to just 7% by 2024. This collapse did not lead to a proportional increase in publishing with traditional core-country publishers such as the US or the UK. Instead, researchers turned en masse to new international venues. Publications in Swiss-based journals, negligible before 2016, exploded to make Switzerland the single largest destination for Lithuanian authors, reaching 35% of total output by 2022. The relatively large and fluctuating share of the "other countries" category (11–17%) further underscores this pattern of displacement, suggesting that researchers, unmoored from a stable domestic base, are constantly probing a wider variety of foreign publishers in a search for accessible niches.

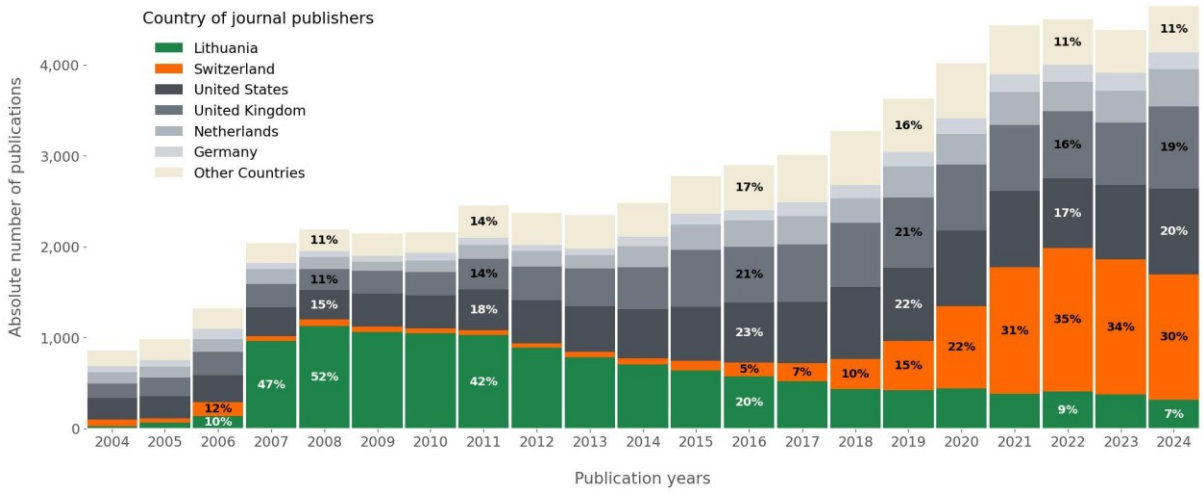

Figure 3. Annual distribution of Lithuanian WoS publications by country of journal publisher (2004–2024).

This wholesale replacement of the domestic publishing system fostered what interviewees describe as a "cult of metrics," focused on the foreign core-based journals as in Spain and preferring quantity over quality. One interviewee mentioned that "even the social sciences and humanities [were] forced to look for foreign journals," leading to widespread cynicism about the outcomes of research assessment policies. Researchers stated that the system promotes individuals based on papers in journals with high impact factors rather than for groundbreaking discoveries; as one professor mentioned, "[for academic advancement] journal quartiles became more important than human behaviour." This overemphasis on metrics has extended to national science awards which, as another interviewee noted, often favour researchers who themselves "cannot clearly explain in plain language why their papers […] are so important."

Unlike the Spanish dual-focus system which preserved its domestic pillar, the Lithuanian evaluation framework fostered a singular dependency on the international field, leading to the effective abandonment of its national publishing infrastructure in favour of new, more efficient global players.

This overall pattern visualises the "displacement" strategy in action. The active dismantling of the domestic infrastructure, combined with the persistent barriers of the traditional Anglophone core, forced a national-level pivot. This is a textbook example of Mertonian "innovation": Lithuanian scholars, faced with blocked institutional means, rationally adopted a new and highly effective infrastructure as their primary means to survive and achieve strategic autonomy.

4.3. Divergent policy responses to a new player

A final, crucial point of contrast between the two national systems is how their policymakers and scholarly communities have responded to the rise of new, high-volume publishers. In Spain, the massive growth in publications with publishers such as MDPI prompted a fierce, public, and data-driven debate led by Spanish scholars themselves [16–17,47]. This domestic debate was combined with intense international scholarly scrutiny, highlighting anomalous publishing patterns [18]. In this context the national evaluation agency, ANECA, issued a report questioning the publisher's practices and, as a result, MDPI published its own harsh rebuttal [46]. This, in turn, led the agency to retract the report with an appeal to its poor technical quality and, most surprisingly, to CoARA principles.

This episode demonstrates that the issue is a high-profile topic of national debate among Spanish scholars and policymakers. The Lithuanian academic community and its policymakers have been virtually silent by comparison. Despite the even more dramatic and rapid displacement of its domestic publishing infrastructure by these same new players, neither the national research council nor the ministry have issued any official statements or taken formal action. This lack of a coordinated public debate or policy intervention creates a different set of conditions for researchers, where the choice to use these venues is not subject to the same level of official scrutiny or national controversy as in Spain.

4.4. Shared scepticism of quantitative metrics

Despite the differences in their national contexts, a striking similarity emerged from the interviews: a shared, deep-seated scepticism about the possibility of meaningful change. Interviewees in both countries expressed a desire to move away from the flawed quantitative assessment system. However, a significant portion of the researchers also doubted whether a better, unbiased alternative existed. Many interviewees mentioned the Coalition for Advancing Research Assessment (CoARA) sarcastically, demonstrating an awareness of reform efforts while remaining sceptical or even cynical about their potential to succeed against the entrenched culture of metrics.

The preceding analysis has established the divergent policy frameworks and their starkly different impacts on the geography of publishing in Spain and Lithuania. We have seen how national evaluation systems can either preserve a domestic publishing infrastructure, leading to a "portfolio addition" strategy, or dismantle it, necessitating a "systemic substitute."

The data clearly shows these macro-level shifts, particularly the dramatic rise of Switzerland-based publishers as a major destination for publications from both nations.

To fully understand the mechanisms behind these divergent outcomes, we must now move from the level of publisher-countries to the level of the publishers themselves. The following section, therefore, delves into the specific publication portfolios of Spanish and Lithuanian scholars, identifying the key corporate and institutional actors driving these trends. This will reveal precisely how a new player in the global field can function as a complementary addition in one context and a foundational substitute in the other.

5. Publisher portfolios and strategic adaptations

This section presents the core empirical findings that demonstrate the divergent strategic adaptations of researchers in the semi-periphery. The analysis firsts detail the contested global publishing landscape in which these strategies unfold. It then moves to the two case studies, showing how the different national publishing infrastructures—the "machinery" of the cycle of credibility—created different conditions of strain, leading to a strategy of portfolio addition in Spain and of systemic substitution in Lithuania.

5.1. The contested landscape and the justification for a new player

To understand the publisher-level patterns, we must first situate them within a shifting and contentious global landscape. The dynamic is so fraught that critical analyses of publishing practices can themselves become subjects of intense dispute or even threats of litigation and strong pressure from some publishers, as vividly illustrated by the controversy surrounding a paper on so-called predatory publishers [50–52]. This contested environment was shaped by two key innovations in open-access publishing. First, the introduction of the author-pays Article Processing Charge (APC) model established a new economic logic. This was later combined with the emergence of the "soundness-only" peer-review model, pioneered by journals such as PLOS ONE, which moved the focus from assessing a paper's perceived importance to simply ensuring its methodological soundness. It was this powerful combination of the APC business model with the high-volume potential of soundness-only review that enabled the rise of "mega-publishers" such as MDPI and Frontiers [53–54]. These new players operate in a complex space, often described as "grey" publishing [14], and have faced intense scrutiny. In Spain, for example, a massive shift by opportunistic authors to MDPI [16–17], amidst scholarly critiques [47] and rebuttals [48], prompted the national evaluation agency, ANECA, to issue and then retract a report on the publisher's practices [46].

It is within this context that our analysis focuses primarily on MDPI. The reason for this focus is data-driven: the surge in Swiss-based publishing is not diffuse but is overwhelmingly driven by this single actor. In the case of Spanish authors, MDPI accounts for 65% of all articles published in Swiss-based journals, while for Lithuanian authors, its dominance is even more pronounced at 77%. Given that MDPI so clearly constitutes the bulk of this transformative trend, analysing its role provides the most direct path to understanding the divergent strategies researchers have adopted.

5.2. The Spanish situation: A portfolio addition

A granular analysis of the publishers chosen by Spanish authors confirms a strategy of portfolio addition, enabled by the country's diverse and resilient publishing infrastructure. The data reveals that the system is composed of four major, stable pillars, and the emergence of a new player was absorbed into this ecosystem without causing much structural displacement.

As shown in Figure 4, Spanish researchers have consistently relied on a varied portfolio. Two pillars have been foundational for decades: the domestic infrastructure of Spanish publishers (gold) provides a stable 10–16% of the national output, and the large, heterogeneous group of "other publishers" (beige), which includes major scientific societies and well-known university presses, consistently accounts for over a quarter of all publications. Alongside these, the legacy commercial publishers, led by Elsevier (dark grey), form a third, dominant pillar.

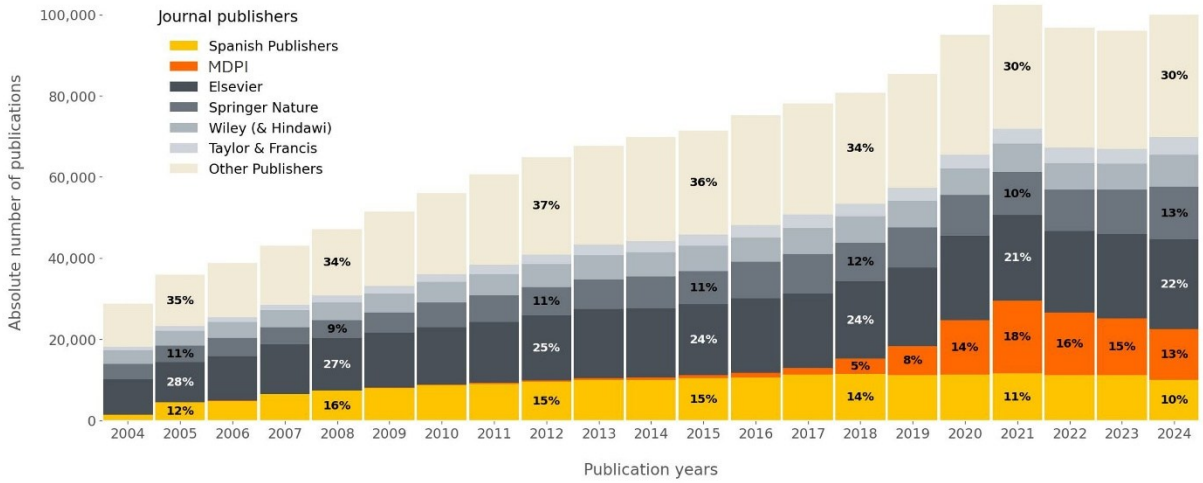

Figure 4. Annual distribution of Spanish WoS publications by publisher (2004–2024).

It is within this multi-pillared, stable context that the rise of MDPI (orange) must be understood. From 2018 to 2021, it grew rapidly to peak at an 18% market share, becoming a significant new component of the Spanish portfolio and, for a time, the second-largest single publisher. In fact, the ratio of Spanish publications in MDPI and Frontiers was much higher than for any other country producing a similar share of the global scientific output. However, its growth did not cause a collapse in any of the other foundational pillars; the domestic, society-led, and legacy commercial circuits all remained intact. This is the visual hallmark of what we call a portfolio addition: Spanish scholars, supported by a highly diversified set of existing options, adopted a new, efficient publisher as another major tool, but its emergence did not fundamentally alter the varied structure of the system. MDPI became another significant player in an already crowded field, rather than a force of systemic replacement.

The logic behind this portfolio strategy, as revealed in the interviews, is one of pure pragmatism driven by career pressures. Spanish researchers explained that their primary motivation for using new publishers such as MDPI was not a belief in their superiority, but a calculated response to the demands of the evaluation system. The main reasons cited were the speed of publication and the perception of a lower rejection threshold, both of which are crucial for meeting the quantitative requirements for promotion and funding. In addition, there is a general perception within Spanish academia that publication in this type of journals has not

been homogeneous and that some opportunistic authors have used it very profusely to obtain accreditations and promotions; these are often sarcastically called "MDPI professors."

Most interviewees admitted to strategically triaging their manuscripts, sending what they considered to be their most important or robust work to traditional, high-prestige journals, while submitting less central papers, or those that had been rejected elsewhere, to faster open-access venues. While a majority felt that the quality of peer review was, on average, lower at these new venues, they also expressed a general sentiment that the quality of peer review is declining across the entire publishing system. The special issue model was viewed with particular scepticism by some Spanish scholars, with one describing it as a "Ponzi scheme." This indicates a clear-eyed, instrumental use of these publishers: they are seen as a necessary and efficient tool for career advancement in a competitive environment, but not necessarily a source of academic pride. As one scholar noted, publishing with MDPI may now even "damage your CV" as both Spanish evaluation bodies and Spanish colleagues have become more sceptical. This growing scepticism was likely amplified by two key events: the controversy with the national evaluation agency, ANECA, and the delisting of MDPI's flagship *International Journal of Environmental Research and Public Health* from the Web of Science in March 2023.[3] These developments plausibly contributed to the subsequent decline in the overall presence of Spanish authors in MDPI journals, which, as shown in Figure 4, fell from a peak of 18% to 13% of the national output.

5.3. The Lithuanian strategy: A systemic substitute

In sharp contrast, the publisher-level data for Lithuania provides a clear illustration of systemic substitution, a strategy necessitated by the policy-driven dismantling of the domestic publishing infrastructure. The data shows a near-total replacement of the national publishing system by a single new player.

Figure 5 vividly charts the marginalisation of the domestic infrastructure within the national research evaluation landscape. Lithuanian publishers (green), which dominated the country's WoS output in the late 2000s with a peak share of 52%, entered a steep descent after the Web of Science expansion [42] and continuously declined from 2012 onwards, falling to a marginal 7% of the total output by 2024. This created a significant vacuum in accessible, indexed publishing venues for the nation's researchers.

This void was not filled by the traditional core publishers such as Elsevier or Springer Nature, whose market shares remained relatively small and stable. Instead, the collapse of domestic publishing is almost perfectly mirrored by the meteoric rise of MDPI (orange). Growing from a negligible presence before 2018, MDPI surged to become the single largest publisher for Lithuanian authors, accounting for nearly a third (31%) of all national publications in 2022. This pattern demonstrates that for Lithuanian scholars, MDPI did not merely represent another choice in a diverse portfolio; it functioned as a direct substitute for the dismantled domestic publishing system, providing an essential and accessible infrastructure for career survival and success in a high-pressure evaluation environment.

[3] Christos Petrou (Sep 18, 2023) Guest Post — Reputation and Publication Volume at MDPI and Frontiers. The Scholarly Kitchen blog.

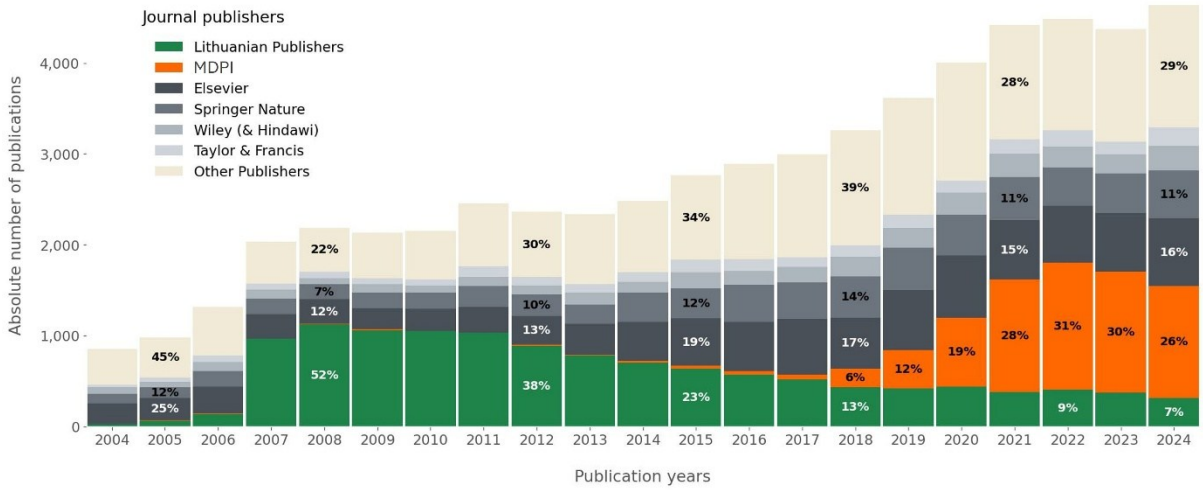

Figure 5. Annual distribution of Lithuanian WoS publications by publisher (2004–2024).

The quantitative data shows a clear displacement; the interviews with Lithuanian scholars reveal why this substitution was not only possible but perceived as necessary. A central theme emerging from the interviews was the persistent and often frustrating experience of gatekeeping when submitting to prestigious Anglophone journals. Interviewees explained that rejections often stemmed from a fundamental disconnect between the two academic systems, described as a "threefold challenge" for peripheral scholars. The first barrier is linguistic, as non-native speakers must master the specific stylistic norms of academic English. The second is cultural, involving the difficulty of explaining locally nuanced research problems to a global audience that may lack the necessary context. The third, and deepest, barrier is a different theoretical background, which can make it difficult for Western gatekeepers to value the scholarly traditions being presented. This multi-layered disconnect would then manifest in subjective reviewer comments, from critiques of "improper language" to the outright dismissal of a topic's relevance due to the country's small size.

This phenomenon was compounded by what interviewees, particularly those in the social sciences and humanities, perceived as "Western arrogance," where critical arguments challenging core theories were often muted or neutralised during peer review. As one interviewee bluntly stated, researchers often concede to these changes because "you do anything for the sake of that publication in a Western journal required by politicians." Faced with these barriers in the traditional "core" circuit, and with their own domestic infrastructure being actively devalued by national policy, new publishers such as MDPI emerged as a rational solution. The key appeal was not a superior review process but the absence of these specific forms of gatekeeping. Researchers reported that their work was not rejected because it came from a "small country" or was deemed unimportant, providing a crucial sense of intellectual autonomy and allowing them to "publish what they think."

Furthermore, the economic and social models of these new publishers were highly effective. The system of offering discounted vouchers for peer reviews was a major draw, allowing Lithuanian researchers to turn their academic labour into a currency to pay for their own article processing charges (APCs). The special issue model was also considered a vital community-building tool by Lithuanian researchers, enabling those in niche fields to create a

global community around a specific topic and thus bypass the limited scope of many traditional journals.

Crucially for researchers in both Lithuania and Spain, this mechanism often operated through personal networks; many contributed to a special issue after being invited directly by a colleague acting as a guest editor. This same network-driven model, so effective for community building in Lithuania, was viewed with deep scepticism by some in Spain, as mentioned above. This mix of avoiding restrictions, gaining independence, and using a practical money-saving approach shows why these new platforms became a crucial alternative for many Lithuanian scholars facing a difficult system with few other choices.

6. Discussion

The comparative analysis of Spain and Lithuania reveals a clear and compelling story: the state of a nation's domestic publishing infrastructure is a decisive factor in how its academic community navigates the pressures of the globalised, metrics-driven evaluation landscape. While researchers in both nations face the same core-periphery dynamics and the same demand to publish in high-prestige international journals, their overall responses have been fundamentally different. This discussion will first synthesise these divergent outcomes through our theoretical framework, then explore their profound social consequences for the academic community before considering the implications for the future of research assessment and scholarly publishing.

6.1. Infrastructure, strain, and strategic choice

Our findings provide strong empirical support for the multi-level theoretical framework guiding this study. At the macro-level, the core-periphery structure of the global academic field [33] creates the intense pressure for "internationalisation" that drives the behaviour in both countries. This global field, as Fernanda Beigel [44] has shown, is not monolithic but is composed of multiple, hierarchically arranged "segmented circuits"—mainstream, regional, and national. However, it is at the meso-level of national research assessment policies that the crucial divergence occurs. Those policies' treatment of domestic publishing infrastructure—essential "machinery" for the cycle of credibility [34]—determines the level of strain that researchers experience.

The strength of this infrastructure, however, is not simply a matter of domestic scale but is significantly enhanced by Spain's position as a central hub within the wider Ibero-American scholarly network, maintaining strong collaborative ties with Latin America [30]. This connection gives Spanish scholars access to a vast, non-commercial, and community-owned publishing circuit in SciELO, which has been championed as a successful, scholar-led alternative to the Anglophone-dominated commercial model [55]. The relationship between this powerful regional network and the global core is, however, complex. The minimal representation of SciELO journals within the prestigious Core Collection of the Web of Science can itself be interpreted as an act of gatekeeping by a major commercial database. While WoS does include a separate SciELO Citation Index, this very separation marks the network as distinct from, and implicitly less prestigious than, the main international circuit. Despite this "second-tier" indexing, the Ibero-American network provides Spanish scholars with a crucial

strategic buffer. It affords them a visible, indexed, and community-controlled "segmented circuit" in which to operate. This ability to operate across a diversified portfolio of publishing circuits helps explain why Spanish researchers may feel less acute pressure in their work, making it easier for them to adopt new publishers as a strategic innovation rather than a choice born of acute strain, a distinction central to Merton's theory of adaptation [35].

In Lithuania, the situation was the opposite. The active, policy-driven marginalisation of the domestic publishing infrastructure removed a key institutionalised means for achieving the cultural goal of publication. This created a condition of acute strain, a significant blockage in the credibility cycle. The subsequent mass shift to MDPI was therefore a textbook example of Mertonian innovation; faced with blocked or frustratingly slow avenues, Lithuanian scholars rationally adopted a new and highly effective infrastructure that functioned as a systemic substitute for the national capacity that had been devalued.

6.2. The divided academy: Social consequences of divergent strategies

The rise of these new publishing models has not just changed publication patterns; it has created deep and often bitter divisions within the academic communities of both Lithuania and Spain. The interviews revealed a scholarly world in conflict, pitting those who adhere to the slow, traditional path of publishing against those who have rapidly advanced their careers by leveraging new, fast-paced models.

This division has tangible, high-stakes consequences. Several interviewees described how established scholars, sometimes waiting years for decisions from prestigious journals, risk "perishing" professionally due to a lack of outputs. They watch as their colleagues who publish multiple papers a year in outlets such as MDPI are rewarded with promotions and titles, becoming what some have termed "MDPI professors." This tension has created an atmosphere of mistrust and polarisation. The toxicity of the debate was evident during the research for this paper; it was difficult to recruit academics for interviews until a neutral stance—not aligning with either MDPI supporters or those "fighting predatory journals"—was explicitly declared.

Perhaps the most poignant example of this conflict came from one Lithuanian interviewee, a senior professor with no MDPI publications. He described how, after he openly criticised influential colleagues for becoming professors primarily by publishing with MDPI without, in his view, "challenging themselves in Western journals," he lost his special professorial title and his standing within the university was significantly lowered. This anecdote powerfully illustrates that the debate over publishing models has moved beyond scholarly disagreement and has become a high-stakes political struggle over status, resources, and the very definition of academic legitimacy.

6.3. The future of publishing: A race to the middle?

A striking theme emerging from the interviews was the sense that the entire academic publishing system is in a state of deep crisis. Many researchers, even those highly critical of new mega-journals, expressed a feeling that the distinction between the "traditional" and the "new" is blurring. As one interviewee memorably put it, "the issue may not be that MDPI is trying to become more like traditional publishers, but that traditional publishers are becoming more like MDPI."

This sentiment was widespread. Researchers noted that major established publishers such as Elsevier and Springer Nature are increasingly adopting the same strategies that draw criticism elsewhere: speeding up review cycles, sending out vast numbers of invitations for special issues, and permitting a perceived decline in the rigour of peer review. This suggests that the efficiency and business model of the new players are not just disrupting the market but actively reshaping the practices of the entire journal publishing field. The consequence of this is a profound ambivalence about the future. From the perspective of researchers who have long complained about the exclusionary gatekeeping of elite Western journals, this convergence towards a faster, more accessible "middle ground" could be seen as a positive, democratising development that lowers barriers to entry. However, for these same researchers, who have been trained to aspire to the highest standards of the traditional system, this trend also creates a deep anxiety. The fear is that the result will be not a "race to the top," but a levelling-down of the very standards of rigour and prestige they have been striving to achieve. This shared, conflicted feeling—that the "whole academic publishing system is about to collapse," bringing both new opportunities and new dangers—underscores the urgency of the reform movements currently underway.

6.4. Policy responses and the challenge of reform

The divergent ways in which the Spanish and Lithuanian academic systems have responded to the rise of MDPI further highlight the importance of publishing infrastructures. In Spain, the existence of a seemingly more robust and tight-knit scholarly community—though recently marked by many notorious cases of scientific misconduct [56]—has led to a public controversy over metrics-based evaluation systems, resulting in some institutional changes. This public dispute, while contentious, demonstrates a system capable of self-reflection and debate. In contrast, the relative "policy silence" in Lithuania suggests a community with fewer institutional resources to mount a similar public challenge, leaving individual researchers to navigate the new landscape on their own.

Despite these differences, researchers in both countries expressed profound doubt or even cynicism about the prospects for meaningful reform. The awareness of initiatives such as the Coalition for Advancing Research Assessment (CoARA) was frequently accompanied by the sentiment that the entrenched culture of metrics and impact fetishism is too powerful to overcome [57]. This shared pessimism highlights the immense challenge facing reformers: changing the rules of evaluation is not just a technical problem, but a deep-seated cultural one.

7. Conclusion

This paper began by asking how academic systems in the semi-periphery develop divergent strategies to cope with the pressures of a global publishing field dominated by a few commercial players. By comparing the cases of Spain and Lithuania, we have demonstrated that the answer lies not only in the intensity of evaluation pressures but, crucially, in how national research assessment policies treat a nation's domestic publishing infrastructure. Our findings show that where policy allows a community-controlled infrastructure to remain a viable part of the evaluation landscape, as in Spain, new publishing models are adopted as a pragmatic portfolio addition. Conversely, where policy actively marginalises the domestic

infrastructure, as in Lithuania, researchers under intense strain are forced to innovate, adopting new models as a systemic substitute for lost institutional capacity.

The implications of these findings for policymakers and university leaders are profound, particularly in the current era of research assessment reform championed by movements such as CoARA. The Lithuanian case serves as a cautionary tale about the unintended consequences of pursuing "internationalisation" by dismantling local publishing ecosystems. Such policies, while seemingly aimed at improving global standing, can create a singular dependency on external commercial actors, ceding control over a crucial part of the national research process. The Spanish case, in contrast, suggests that true systemic resilience lies in diversity. By supporting a community-owned, "Diamond Open Access" infrastructure, nations can provide their researchers with a crucial buffer, affording them a greater degree of strategic autonomy and insulating them from the full force of the commercial market.

Furthermore, this study contributes to the heated debate surrounding new high-volume publishers. It moves beyond a simplistic "predatory vs. legitimate" binary to show that the function and role of a publisher are context-dependent. A publisher such as MDPI can be a tool of convenience in one system and an essential lifeline in another. This demonstrates that the "problem" lies not merely with the business models of certain publishers, but with the systemic research evaluation pressures that create such intense demand for their services.

The very fabric of scholarly communication is changing, with many researchers now feeling that traditional publishers are beginning to imitate the high-speed, high-volume models of their new competitors. While this suggests a market-driven pull towards a new industry standard, it is happening at the very moment that reform movements such as CoARA are creating a powerful counter-pressure for more qualitative and responsible forms of assessment. The result is not a simple convergence, but a system being pulled in two opposing directions, the consequences of which are viewed with profound ambivalence.

On the one hand, as many of our interviewees expressed, there is a deep-seated fear that this trend could lead to a "race to the bottom," resulting in detrimental epistemic effects. On the other hand, a powerful counterargument can be made that this shift is a positive development. It could represent a move towards a system where the academic community is no longer expected to perform exclusionary gatekeeping for journals. Instead, it could embrace a "soundness-only" peer review model, where the role of the academic reviewer is to rigorously screen for methodological validity, leaving the broader scientific community to determine an article's quality and impact over time. It is this unresolved tension—between the desire for traditional, high-barrier gatekeeping and the promise of a more open, "publish, then filter" model—that lies at the heart of the current reform debates.

Looking forward, the frustrations with non-transparent gatekeeping and the perceived lack of quality control voiced by researchers in this study point toward the need for systemic reform. One frequently proposed solution is the wider adoption of an open peer review model [58]. In theory, disclosing reviewer identities, reports, and author responses increases the accountability and transparency of the entire process, addressing many of the core issues of bias and perceived unfairness that drive scholars to alternative publishing models. However, as our findings have shown, the academic publishing system is ultimately operated by researchers themselves. While many publishers now have the technical infrastructure to support open peer review, its successful implementation depends entirely on a cultural shift within the academic

community. The transition to a more transparent system is contingent upon the willingness of a critical mass of scholars to move away from the long-held tradition of anonymous review and to stand by their critiques publicly. Therefore, any meaningful reform must address not only the policies of publishers and evaluation agencies, but also the culture and incentives that shape the behaviour of the individual academics who act as the ultimate gatekeepers.

Naturally, this study has its limitations. Our focus on two semi-peripheral European nations means the findings may not be directly generalisable to different contexts, such as the global South or other core countries. The analysis, while justified by its focus on research evaluation pressures, is limited to the Web of Science and does not capture the full scope of un-indexed domestic publishing. Building on this, future research could specifically investigate the language dimension and the role of the vast Ibero-American scholarly circuit. Given that this circuit is dominated by non-commercial, university-led platforms such as Redalyc, Latindex, and SciELO [30], a dedicated study could explore whether, and how, Spanish researchers perceive these non-WoS venues as a valuable and autonomous space for knowledge dissemination, separate from the high-stakes Anglophone evaluation game.

Furthermore, a rich area for future inquiry lies in a more granular analysis of researchers' open-access choices. Our interviews hinted at a key distinction between scholars who publish with MDPI and those who choose the open-access brands of legacy publishers such as Springer or Elsevier—venues that are not subject to the same level of controversy. A dedicated study, combining a deeper qualitative analysis of researchers' motivations with a targeted bibliometric investigation of these different publication pathways, could reveal the nuanced calculus that separates one open-access strategy from another. Future research could also build on this work by extending the comparative analysis to other regions and exploring disciplinary differences in more depth.

Ultimately, our research demonstrates that a nation's autonomy is defined by more than its research output. True autonomy may lie in the capacity to define and confer academic legitimacy through its own publishing systems. This creates a scholarly commons that is, as Vessuri et al. [55] argue, independent of the core's commercial hierarchies but fully interconnected with the global scientific conversation. As the scholarly communication system becomes increasingly commercialised, the value of a sovereign, community-managed publishing infrastructure has never been more apparent. It is this publishing infrastructure that separates a strategy of dependent displacement from one of autonomous coexistence, providing a foundation upon which a more diverse and equitable global scientific community can be built.

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Data availability

This paper is based on two types of data: interviews with Lithuanian and Spanish researchers, and WoS bibliometric data. The interviewees spoke under a guarantee of anonymity, so the interview data is unavailable. The WoS data are of a proprietary nature and therefore cannot be shared; accessing the data requires a WoS subscription.

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