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Leiden  
The Netherlands

## Quantitative research assessment and its unintended consequences

Dagiene, E.

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## Summary

### Quantitative Research Assessment and its Unintended Consequences

This PhD dissertation offers a comprehensive analysis of the dynamics of quantitative research assessment in Lithuania, a small nation integrating into the global research landscape after regaining its independence. This research investigates the historical evolution, policy implications, and behavioural impact of quantitative research assessment practices on individual researchers, institutions, and broader research outcomes. By focusing on Lithuania, the thesis provides in-depth insights relevant to numerous countries grappling with similar challenges in a globalised world, contributing to ongoing debates on responsible research evaluation.

**Chapter 1** establishes the foundational context for the dissertation by analysing Lithuania's journey with quantitative research assessment. Lithuania's experience serves as an insightful case study for other countries seeking to foster responsible and effective research evaluation practices. The chapter examines external evaluations that consistently depicted Lithuania as “lagging behind” in research and innovation, a narrative that fuelled extensive reform efforts. European Union reports highlighted persistent issues such as funding deficits, low research output, and weak international collaboration; in response, Lithuanian state bodies, notably the Research and Higher Education Monitoring and Analysis Centre, were established to guide reforms despite internal policy tensions. The chapter notes a scarcity of independent analyses of Lithuania's research assessment system in existing academic literature. It details the system's structure, built upon regulations for academic degrees, minimum qualification requirements, and the Performance-Based Funding System (PBFS). These components heavily incentivise publications in high-impact international journals. The chapter concludes by outlining the dissertation's core research objectives, its mixed-methods approach, and five key research questions concerning multi-actor policy dynamics, the PBFS's evolution, comparative book evaluation, identifying actual book publishers, and the visibility of Lithuanian research.

**Chapter 2** investigates the multi-actor policy dynamics that shaped the development of quantitative research evaluation in Lithuania between 1996 and 2008. As Lithuania aimed for internationalisation, it adopted author- and journal-based metrics for funding and promotion. This reform involved complex interactions between international experts, national policymakers, publication data providers, and academics navigating between Soviet traditions and international trends. Three key multi-actor dynamics are identified: the “expert dynamic”, illustrating how Lithuanian policymakers engaged with foreign experts emphasising international publications; the “database dynamic”, examining interactions among policymakers, data providers (e.g., Web of Science), and journal publishers, revealing unintended consequences; and the “academic dynamic”, exploring how researchers, particularly in social sciences and humanities, resisted imposed quantitative measures, leading to disciplinary tensions and a landmark Constitutional Court case. Using a mixed-methods approach, the findings highlight the challenges of adopting international practices in a small,

transitioning system, the influence of data providers and academic lobbying, and the importance of considering disciplinary differences. The Lithuanian case offers valuable lessons for research assessment reforms, emphasising nuanced approaches and continuous dialogue.

**Chapter 3** delves into the intricacies of the Lithuanian PBFS from its inception in 2005 to 2022, using a multi-level, multi-actor, and multi-issue framework. It analyses the roles of key actors—the Ministry of Education, Science, and Sport; the Research Council of Lithuania; universities; and scientific elites—and their interactions. The Ministry faced challenges in stakeholder engagement, while the Council encountered complexities in ensuring expert independence. Universities strategically responded to PBFS incentives by establishing institutional journals and pursuing international collaborations. These changes underscored the dominant influence of scientific elites, who hold leadership positions across governmental and institutional levels, leading to systemic tensions. The chapter explores how policymakers navigated the disparity between international aspirations and domestic realities, initially focusing on international publications but later grappling with unintended consequences such as the proliferation of domestic WoS-indexed journals. The controversial “suspended journals” policy is analysed for its inconsistencies, and evolving individual and institutional strategies in response to the PBFS are discussed through case studies. The chapter concludes by emphasising the dominant role of scientific elites in shaping the PBFS and the need for broader stakeholder involvement for a more balanced and effective system.

**Chapter 4** investigates methods for identifying prestigious publishers in academic book assessment, comparing Lithuanian practices with those of other countries and examining the consistency and verifiability of these assessments. It highlights the increasing importance of publisher prestige in metric-based funding systems, as contrasted with qualitative peer-review approaches. A mixed-methods approach, including qualitative document analysis and a bibliometric investigation of Lithuanian book outputs (2004–2016), reveals significant inconsistencies in how Lithuanian experts classify publishers as prestigious over time. Comparison with publisher rankings in Norway, Denmark, Finland, and Poland shows a lack of international consensus. The chapter also examines formal definitions of publisher prestige, which often prove less than transparent; an analysis of several international publishers further reveals difficulties in verifying compliance with stated requirements. The findings suggest that assessment of books based on publisher prestige is subjective and inconsistent, both within Lithuania and internationally. The discussion concludes that “prestigious publisher” is often ill-defined, which undermines the validity of publisher rankings as a primary indicator of book quality. The chapter calls for future research to focus on broader aspects of book publishing, such as quality control, dissemination, and transparency.

**Chapter 5** explores the potential of the ISBN Manual and the Global Register of Publishers (GRP) for understanding book publishing practices, particularly within research assessment in Lithuania and the United Kingdom’s Research Excellence Framework (REF) from 2008 to 2020. It contrasts Lithuania’s focus on publisher prestige with the UK’s emphasis on content and the growing importance of open access. A mixed-methods approach reveals that while the ISBN Manual and GRP are valuable for identifying ISBN registrants, determining book genre

solely from this metadata is challenging. The complexities of identifying the actual book publisher are highlighted due to the ISBN system's flexibility and the challenges posed by imprints, mergers, and acquisitions. The bibliometric analysis of UK and Lithuanian book ISBNs using GRP metadata provides insights into researchers' publishing practices, revealing differences in publishing power concentration and favoured publisher types. The GRP proves a useful resource for bibliometric analysis of book publishing, which in turn further illustrates the drawbacks of relying solely on publisher reputation in research assessment. Instead, a nuanced approach is needed: one that considers actual publishing practices and aligns with scholarly communication principles such as open access. These findings underscore the potential of ISBN and GRP data for informing policy.

**Chapter 6** advocates for a shift towards individual book assessment, in keeping with open science principles, and critiques the current emphasis on publisher prestige. It highlights the need for comprehensive book metrics capturing a book's full lifecycle; to this end, the chapter investigates WorldCat metadata availability and the visibility of books submitted to national research assessments in the UK's REF and Lithuanian research assessments (2008–2020). A mixed-methods approach reveals that WorldCat offers nearly complete primary metadata (titles, languages, publication years), though contributor information requires cleaning, and crucial elements such as genre and peer-review status are often missing. While publisher information in the MARC21 format for bibliographic data is non-standardised, the GRP can provide more reliable data. Regarding visibility, German libraries are significant contributors to REF book discoverability in WorldCat. In contrast, only two-thirds of Lithuanian books are present in the WorldCat catalogue, which relies primarily on German, American, and Polish data providers due to a lack of Lithuanian institutional contributions. The chapter concludes that while WorldCat is a valuable resource for book-level research assessment, its limitations in terms of genre, peer review, and consistent open access information need addressing. It emphasises the importance of collaboration among stakeholders to improve metadata completeness and accessibility, fostering fairer evaluation practices beyond publisher prestige.

**Chapter 7** consolidates key findings, discusses the fulfilment of research objectives, and proposes policy recommendations for Lithuania's science policymaking and book evaluation along with future research avenues. The research revealed international experts' significant influence on Lithuania's adoption of quantitative research assessment and the unintended consequences of prioritising Web of Science publications. It highlighted how the complex PBFS dynamics, shaped by policymakers, institutions, and influential academics, led to issues such as institutional journal proliferation and the controversial journal suspension policy. The thesis demonstrated inconsistencies in book evaluation practices across Europe, most notably the subjective nature of publisher prestige. Furthermore, it established the ISBN Manual and GRP as valuable tools for identifying actual book publishers and their roles, beyond mere reputation. Finally, while WorldCat offers potential for enhancing Lithuanian book visibility, its metadata is incomplete and underutilises local contributions. This PhD research fulfilled its objectives by analysing the evolution of research assessment in a transitioning science system, contributing to more effective and responsible assessment frameworks for smaller

countries, and enhancing theoretical understanding of policymaking dynamics within public science systems.

Policy recommendations include reducing reliance on external expertise, strengthening independent research on the Lithuanian science system, mitigating risk aversion in policymaking, abandoning prestige-based book evaluation in favour of open access and discoverability, and enhancing Lithuanian research's global visibility through improved metadata and preservation strategies. Future research directions include investigating the “lagging behind” narrative's origins and impact, evaluating alternative models for incorporating external expertise, analysing national policies' impact on local research communities, examining book peer review practices, developing comprehensive book evaluation frameworks beyond publisher prestige, and investigating a wider range of book metadata sources.