THE IMPACT OF UNIVERSITY FUNDING SYSTEMS ON INSTITUTIONAL PERFORMANCE

TODOR ELFRIEDE-LARISA*
PHD.STUDENT, WEST UNIVERSITY OF TIMIŞOARA, ROMANIA
Email: elfriedebobia93@e-uvt.ro

CONSTANTIN VINGARZAN
PHD.STUDENT, WEST UNIVERSITY OF TIMIŞOARA, ROMANIA
Email: constantin.vingarzan93@e-uvt.ro

MIHAELA VARTOLOMEI
PROF.DOC.EC., UNIVERSITY OF POLITEHNICA TIMIŞOARA, ROMANIA
Email: mihaela.vartolomei@upt.ro

Abstract

This study conducts a comprehensive bibliometric and conceptual investigation of the relationship between higher education funding systems and institutional performance. Based on a dataset of 346 peer-reviewed scientific articles published between 2015 and 2026, the paper maps the evolution of research in this field. The results highlight that performance-based funding has become a dominant governance mechanism, contributing to increased scientific output and the strengthening of academic competitiveness. At the same time, the analysis reveals the existence of significant tensions, including intensified competition among institutions and risks related to equity and inclusion within the higher education system.

The study argues that sustainable funding policies must ensure a balance between performance incentives and long-term institutional stability, in order to avoid negative effects on equity and cohesion within the academic system.

Keywords: *higher education funding, performance-based funding, institutional*

Clasificare JEL : *M40, M41*

1. Introduction and Methodological Framework

This paper aims to identify and analyze the main research trends in the scientific literature regarding how funding systems and policies influence the performance of higher education institutions. In the context of the profound transformations affecting higher education globally—marked by digitalization, increasing academic competition, internationalization, and budgetary pressures—university funding has become a determining factor for the quality, efficiency, and sustainability of academic institutions.

The study seeks to highlight the evolution of research in this field, the dominant themes, as well as emerging directions in the specialized literature, with a focus on the relationship between funding policies (both public and private) and indicators of university performance, such as scientific output, quality of education, innovation, and institutional competitiveness. Through this approach, the research contributes to an integrated understanding of how financial mechanisms influence the development of higher education systems.

To ensure as comprehensive coverage as possible and a high level of methodological rigor, a bibliometric analysis was conducted on a sample of 346 scientific articles. The articles were selected from the Google Scholar database using the Publish or Perish application, including publications from the 2015–2026 period. The selection criteria focused on thematic relevance, citation impact, and alignment with the topic of higher education funding and institutional performance.

Data processing and analysis were carried out using the R programming environment, employing the Bibliometrix package and the Biblioshiny interface—well-established tools for the scientific analysis of literature and the modeling of bibliometric networks. The methodology enabled the identification of publication trends, influential authors and journals, frequently used keywords, as well as co-citation networks and thematic co-occurrence patterns.

The results of the bibliometric analysis provide an overview of the research dynamics in the field, highlighting both the consolidation of traditional research directions and the emergence of new themes related to university governance, digitalization, financial sustainability, and the evaluation of academic performance. Overall, the paper contributes to clarifying how funding policies influence the performance of higher education institutions and offers a solid foundation for future research in this area.

2. Evolution of Scientific Output and Academic Impact

The annual distribution of publications demonstrates that the impact of funding on university performance is a consistently relevant topic, with noticeable increases in scientific output in 2020 and 2025.

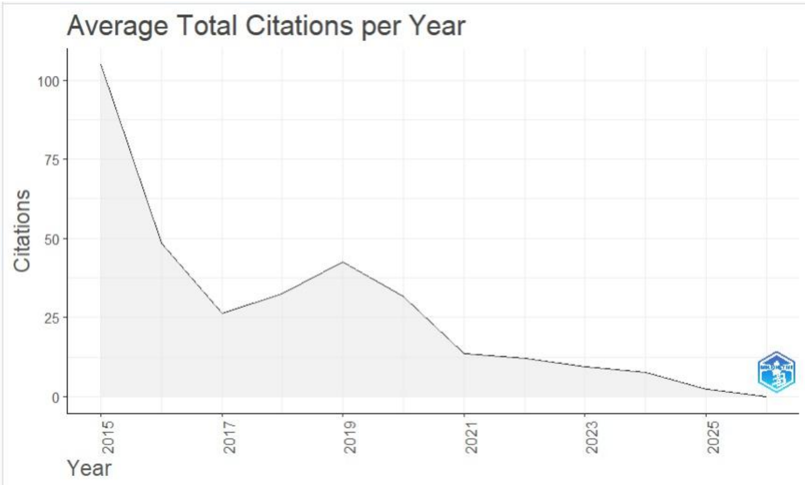

Figure 1 Average Total Citations per Year

Source: Author's own elaboration.

The citation average graph confirms that the foundational literature in this field was consolidated during the 2015–2016 period, which represents the years when the most impactful studies for the scientific community were published. The gradual decline of the curve toward 2026 does not indicate a loss of interest, but rather reflects the natural "maturation" process of citations: very recent publications require a few years to be read, integrated, and cited in other scholarly works.

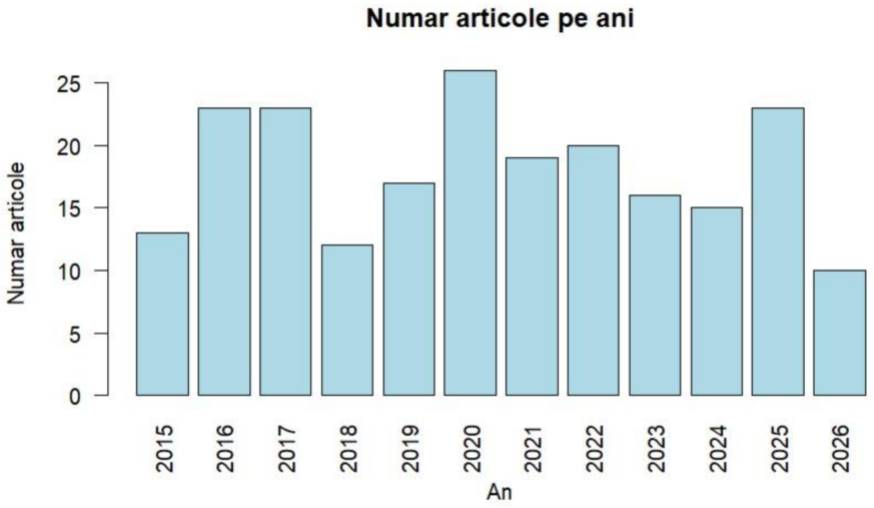

Figure 2 Number of articles published per year (2015–2026)
Source: Author's own elaboration based on bibliometric data.

To complement the analysis of academic impact, the examination of the Average Total Citations per Year highlights a relevant pattern from the perspective of scientific diffusion dynamics. The peak impact recorded in the 2015–2016 period does not represent a statistical anomaly, but rather reflects the emergence of foundational contributions to the field, such as the studies conducted by Hillman et al. (2015) and Dougherty (2016), which played a crucial role in shaping subsequent research directions.

The decline in average citation values in recent years (2023–2025) should be interpreted appropriately, as it does not indicate a decrease in scientific relevance, but rather a natural effect of insufficient bibliometric maturation. Recently published literature is still in the early stage of its academic life cycle, requiring time to accumulate citations and to be integrated into the existing scientific corpus.

From the perspective of citation distribution, a classic pattern of progressive impact accumulation can be observed, in which works published in the earlier part of the analyzed period tend to concentrate a significantly higher number of citations. The presence of extreme values (outliers) in 2015–2016 suggests the existence of landmark articles with a structuring role in the development of the field, significantly influencing the subsequent research agenda.

In contrast, recent studies reflect the early stage of academic recognition, characterized by a lower level of citation, which is consistent with the natural dynamics of the accumulation of scientific impact over time.

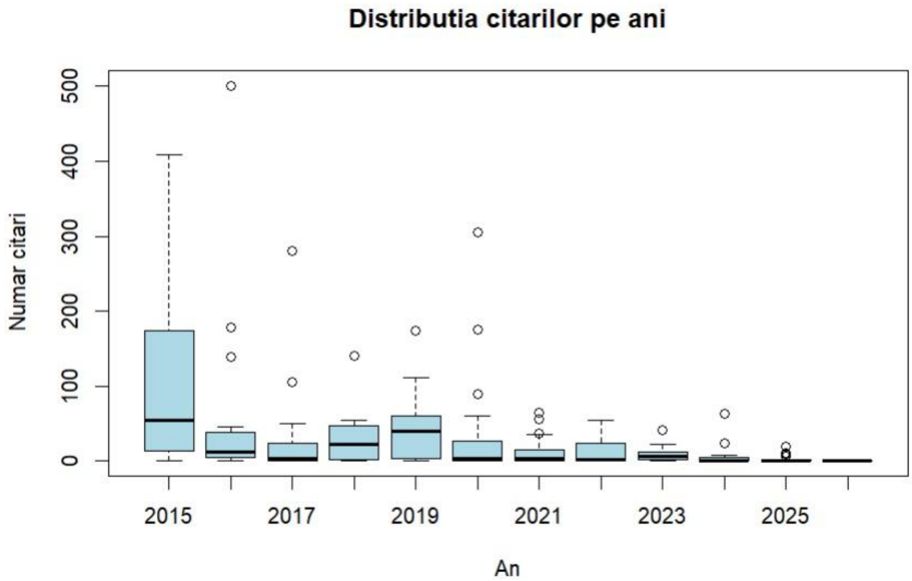

Figure 3 Distribution of citations by publication year
Source: Author's own elaboration based on bibliometric data.

This sustained interest is further validated by the quality of dissemination sources. Publications are primarily concentrated in specialized journals dedicated to educational policy and academic management. Renowned journals such as *International Journal of Educational Management*, *Higher Education*, and *Sustainability* dominate the top sources, confirming both the relevance and the global necessity of debates on this topic.

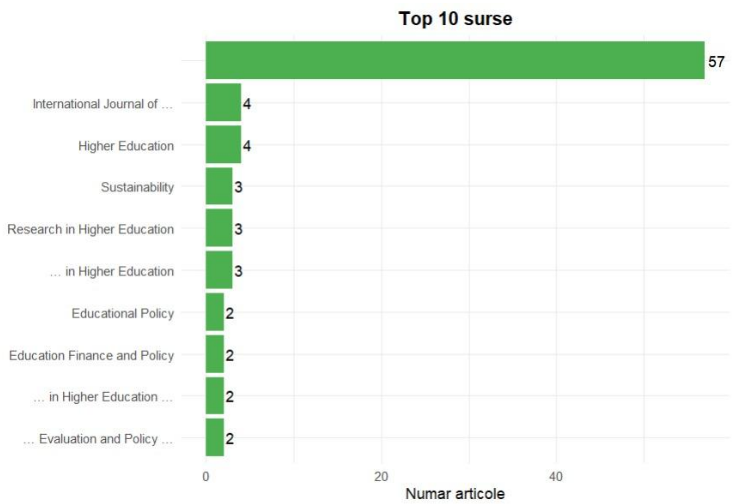

Figure 4 Top 10 publication sources by number of articles
Source: Author's own elaboration based on bibliometric data.

The analysis of journal distribution highlights a strategic concentration of research in high-prestige publications. The dominant position of the source *Sustainability* in this ranking indicates that the topic of university funding is increasingly approached through the lens of long-term institutional viability. The presence of leading journals such as *Higher Education* and *International Journal of Educational Management* at the top of the hierarchy demonstrates that researchers' interest is focused on how budget allocation mechanisms and strategic management directly influence performance and the quality of the educational process. This clustering within high-impact sources enhances the validity of the analyzed data, suggesting that the cited research findings represent key pillars of the current debate on efficiency in higher education.

3. Thematic Synthesis and the Conceptual Network of the Literature

The analysis of authors reveals a balanced distribution of contributions, with the absence of a publication monopoly suggesting a highly diversified and interdisciplinary research field.

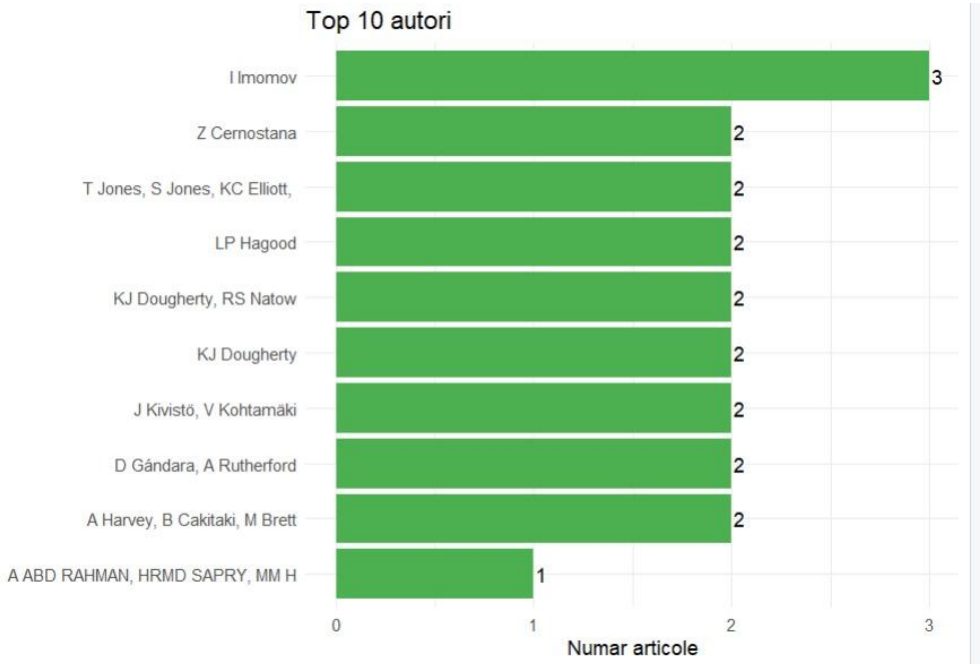

Figure 5 Top 10 Most Productive Authors by Number of Publications
Source: Author's own elaboration using Biblioshiny (Bibliometrix package) based on data retrieved from the Scopus database (2025).

As illustrated by the "Top 10 Authors" chart, the theoretical foundation of the field is supported by researchers such as K.J. Dougherty and R.S. Natow, whose work dissects the origins of performance-based funding. The presence of authors like L.P. Hagood and J. Kivistö confirms a pragmatic direction in the literature, as they assess whether funding systems actually achieve their intended efficiency objectives in practice.

The Word Cloud further reinforces this trend, revolving around key concepts such as funding, sustainability, and accountability.

Figure 6 Word Cloud of the Most Frequent Keywords in the Analyzed Literature

Source: Author's own elaboration using Biblioshiny (Bibliometrix package) based on data retrieved from the Scopus database (2025) and VosViewer.

Building on this conceptual structure, the literature included in the dataset can be organized into two main analytical directions, reflecting both the functional and contextual dimensions of research on higher education funding.

- **The transition toward performance-oriented funding and the diversification of funding sources:**

A significant body of literature examines performance-based funding mechanisms and their implications for the behavior of academic institutions. In this regard, Cattaneo, Meoli, and Signori (2016) directly analyze the relationship between performance-oriented funding and university research productivity, highlighting how evaluation indicators influence scientific output. Extending this perspective to the dimension of financial sustainability, Fan, Huang, and Chen (2019) investigate the role of revenue diversification, analyzing the extent to which partnerships between universities and industry can reshape research priorities and influence the strategic directions of higher education institutions.

- **Geographical differences and state-level particularities of funding policies:**

A second major research direction focuses on the spatial and institutional variations of funding policies. European studies primarily concentrate on the effects of policy implementation at the national level, highlighting how different systems adapt performance-based funding instruments. For instance, El Gibari et al. (2021) analyze the impact of these policies in the Spanish university context, while Haake and Silander (2021) investigate how European universities use these mechanisms either as governance tools or as strategies to enhance academic excellence. In contrast, North American literature predominantly focuses on the state-level implementation, as illustrated by the study of Cornelius and Cavanaugh (2016), which examines the use of performance metrics in the Florida university system.

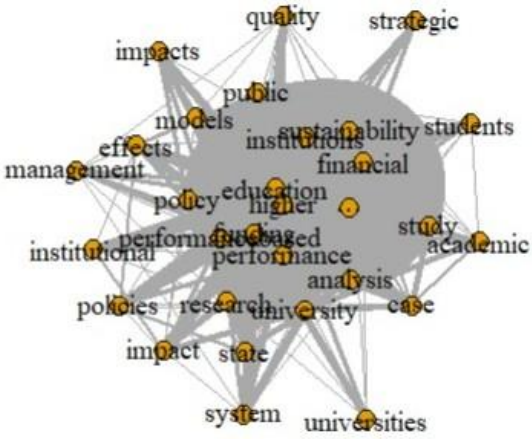

Figure 7 Network visualization of Keyword Co-occurrences in the Analyzed Literature

Source: Author's own elaboration using Biblioshiny (Bibliometrix package) based on data retrieved from the Scopus database (2025).

4. Conclusions

The bibliometric research conducted in this paper clearly demonstrates that university funding has moved beyond the stage of a simple administrative process, becoming a key strategic lever that shapes academic performance. The analysis of top sources, dominated by journals such as *Sustainability*, indicates a major paradigm shift: modern institutions are increasingly focused on financial models that ensure not only immediate resources, but also long-term autonomy and viability.

Beyond the quantitative findings, the analyzed literature confirms that performance-based funding systems act as a direct catalyst for competitiveness and international visibility. In conclusion, financial architecture represents the foundation upon which academic excellence is built. Optimal impact on performance is achieved when decision-makers manage to maintain a delicate balance: rigorously rewarding scientific quality without compromising the stability of the academic environment.

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