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### Mapping the Knowledge Landscape of Tuition Fee Research in Higher Education: A bibliometric review with insights for future

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#### Abstract

This study aims to map the global research landscape on tuition fees in higher education through a Bibliometric Analysis of 497 Scopus-indexed publications using VOSviewer, Biblioshiny, and OpenRefine. The findings reveal a substantial increase in research activity since 2010, with dominant themes focusing on tuition fees, financial aid, and access. Research collaboration remains limited and largely Western-centric, highlighting the need for broader global engagement. The study provides valuable insights for policymakers and scholars addressing equity, affordability, and sustainability in higher education.

**Keywords:** Tuition Fees; Bibliometric Analysis; VOSviewer; Biblioshiny

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#### 1.0 Introduction

The issue of higher education tuition fees has become a central concern in global discussions surrounding access (Marginson, S. 2016), equity (Brewis, 2025), and sustainability in higher education (Chankseliani & Mccowan, 2021; Kohl et al., 2021). As the demand for higher education continues to rise amid constraints in public funding, many higher education institutions have adopted diverse and increasingly complex tuition pricing strategies (Cheslock & Riggs, 2023). These developments have sparked widespread interest and debate among stakeholders, including students (McCann et al., 2022), parents, policymakers, and educational institutions, from both economic, social, and political perspectives (Varadarajan et al., 2023).

Over the past two decades, scholarly interest in tuition fees has grown significantly across multiple disciplines, including educational economics (Liu & Solheim, 2023), public policy, and the sociology of education (Lundin, 2025). Despite the increasing volume of publications in this area, there remains a lack of systematic and comprehensive mapping of the existing literature using bibliometric

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techniques. Bibliometric Analysis is used to quantitatively and visually analyze patterns in academic research, helping to identify publication trends, pinpoint prominent contributors, and reveal thematic developments within a field (Donthu et al., 2021; Zucolotto et al., 2022).

This research aims to address this gap by conducting a Bibliometric Analysis of the scientific literature on tuition fees in higher education. Specifically, this study investigates and maps the global research landscape on higher education tuition fees through a Bibliometric Analysis, focusing on publication trends, influential contributors, collaboration networks, and thematic evolution.

To guide this analysis, the research questions are as follows:

1. What are publication trends over time in the field of higher education tuition fees, and how have research volume and citation impact evolved over the past few decades?
2. Which countries, institutions, and titles are the most active contributors to the literature on higher education tuition fees, and what patterns of productivity and citation impact do they exhibit?
3. Who are the most influential authors in this field, and what themes and keywords are most frequently associated with their contributions?
4. How is research collaboration in this field structured, and what do co-authorship networks reveal about national and international partnerships between authors and institutions?
5. What are the dominant and emerging thematic areas in higher education tuition fees research, and how have key concepts evolved over time based on co-occurrence and keyword density analyses?

## 2.0 Literature Review

Tuition fees are mandatory fees charged by universities to students to finance their education and other academic services. Tuition fees are generally considered the price of higher education and a means of cost-sharing, redistributing the financial responsibility for higher education from the state to the individual. This is part of the approach in human capital theory (Lai & Jung, 2025), where higher education is an investment for individuals to gain future benefits. This viewpoint has been enhanced by a critical framework that highlights the public and social aspects of higher education, questioning whether increasing tuition costs compromise equity and intensify socioeconomic inequalities.

Apart from the human capital theory, which assumes that tuition fees are a reasonable expense as an initial investment because the benefits will be felt in the future. Conversely, social justice theory views college tuition as a barrier that can contribute to systemic injustice in society. However, economics suggests that students sometimes make poor decisions regarding tuition and financial aid (Dynarski et al., 2021). The United States, the United Kingdom, and Australia all have expensive schools and good financial aid programs. This contrasts with European countries like Finland, Sweden, Norway, and others, where tuition fees are very low or even free. Furthermore, according to Cheslock & Riggs (2023), several factors influencing tuition fees and student success include the type of institution, program level, and national funding system.

Various methodologies in higher education research have produced studies investigating enrollment trends, academic performance, student debt, and outcomes following graduation. These studies also look at how institutions respond to competition, tuition regulation, and finding new sources of income (Jaafar et al., 2021). Nonetheless, although there is a great availability of country-specific and comparative studies, there have been few efforts to systematically chart this literature through bibliometric methodologies. Bibliometric Analysis can be used to explain the mapping of a subject by emphasizing prominent works, key contributors, and thematic breakthroughs (Magno et al., 2021; Yan & Zhiping, 2023). Therefore, in the field of education, Bibliometrics Analysis is increasingly used to examine collaborative patterns and topic transitions (Bardakci et al., 2022). However, its use in research on tuition fees remains limited.

There have been a number of bibliometric reviews that have directly addressed the funding of education, but none have provided a comprehensive mapping of research related to tuition costs across time. This synthesis has enhanced understanding of how academic communities have addressed challenges across various disciplines, domains, and historical contexts. As literature continues to develop, especially in the fields of global economics and higher education, it is becoming more and more vital to do structural and visual evaluations of research. Researchers can use bibliometric tools like VOSviewer and Biblioshiny to get systematic information on patterns of co-authorship, institutions, geographic contributions, and topic classification. These tools help researchers get around traditional narrative reviews.

## 3.0 Methodology

This study uses Bibliometrics Analysis to explain scientific developments, trends, and research patterns related to tuition fees in higher education. The database used in this study is Scopus. Scopus was used because it has a reliable scientific publication index and includes articles that have been reviewed by experts in their fields. The data search was conducted on June 16, 2025, using keywords designed to obtain all possible relevant topics by including synonyms and acronyms of the keywords used. The main keywords were "tuition fees" and "Higher Education." Boolean operators (AND, OR) and quotation marks were used to ensure precise and comprehensive search syntax, as shown in the following section: ("tuitions" OR "college fee" OR "tuition costs" OR "tuition prices" OR "tuition fees" OR "Course Price" OR "Student Cost" OR "Student Fee" OR "Education Cost" OR "Education fee" OR "College Cost" OR "University fee" OR "Cost of College" OR "University tuition" OR "University Cost" OR "College Pricing" OR "University Pricing") AND ("higher education" OR "university" OR "graduate school" OR "higher learning" OR "college" OR "polytechnic" OR "tertiary school" OR "higher institution" OR "HEI" OR "HEIs" OR "Tertiary education" OR "Postsecondary education" OR "Undergraduate Education" OR

"Postsecondary institution" OR "Degree-level education" OR "University Sector" OR "Polytechnic education" OR "Polytechnic University" OR "Higher Learning" OR "Academic Education"). There were no limits on the search, such as time frame, document type, source type, or language. This made the dataset as complete as possible. A lot of work went into finding and including a wide range of probable keyword synonyms and institutional characteristics to make sure that no important terms were missed. This is why the search string is so broad and complex.

We found 497 Scopus-indexed records with relevant titles and included them in the Bibliometric Analysis by doing a structured title-based search (Figure 1). There were no duplicates or entries that weren't useful. The dataset was cleaned and made consistent with OpenRefine by making sure that author names, institutional affiliations, country information, and keywords were all the same. This made sure that all metadata fields were consistent and correct. For the Bibliometric Analysis, two popular software, VOSviewer and Biblioshiny, were used. VOSviewer made networks easier to see by making co-authorship maps, keyword co-occurrence networks, and citation-based clustering to demonstrate how themes are related. Biblioshiny is a web program built on R that works with the Bibliometrix package to create descriptive statistics, trend analysis, and theme maps. Using these technologies together gave us both numerical and visual information. This facilitated an examination of publishing trends, academic impact, institutional contributions, and theme development in the research on higher education tuition fees.

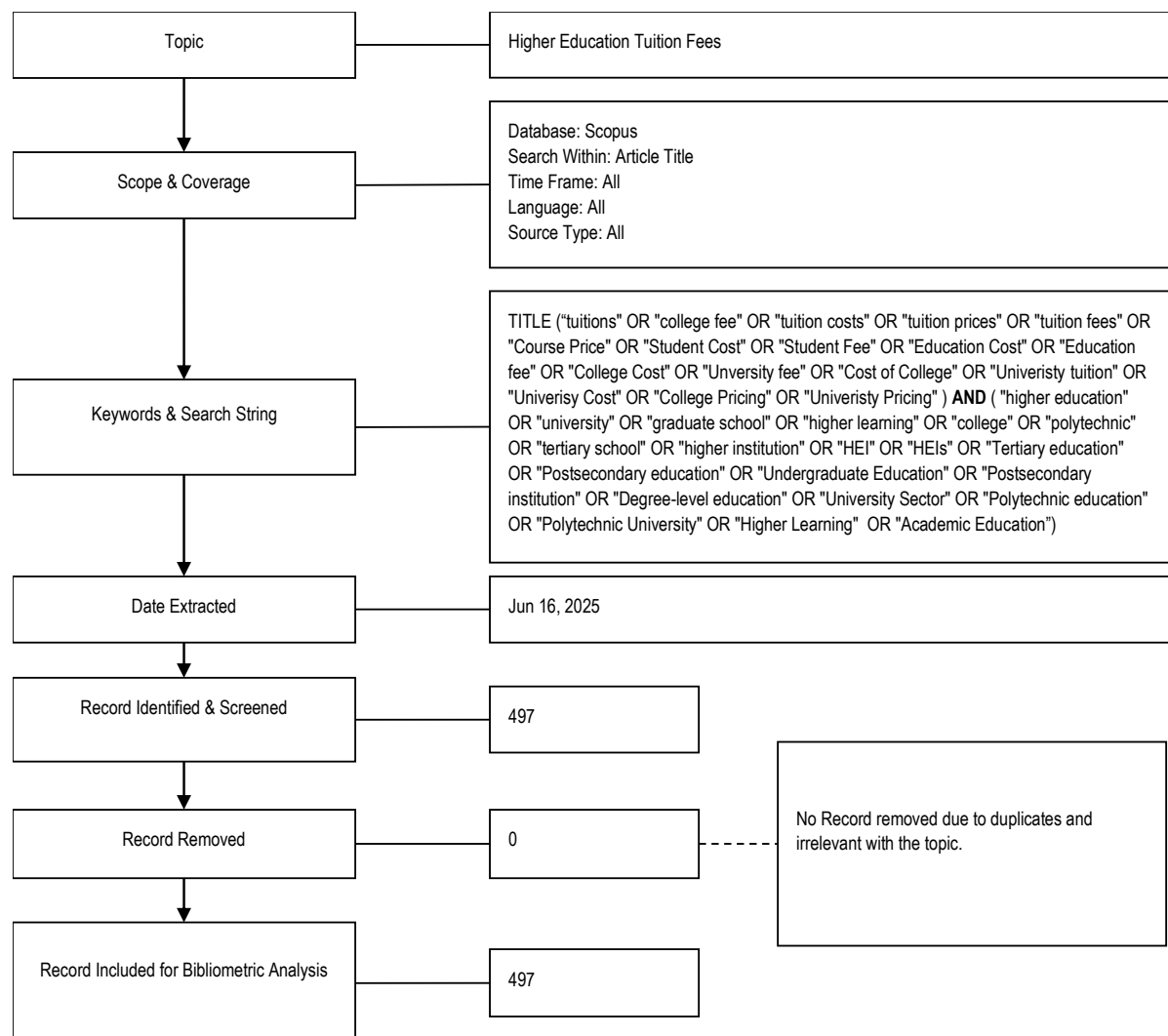


Fig. 1: Flow diagram of the search strategy  
Source: (Moher et al., 2009)

## 4.0 Findings

### 4.1 Publication trend

Research on tuition fees covers the years from 1855 to 2025. However, growth picked up speed after 2010, reaching its highest point between 2014 and 2016 (Table 1). There are 5,212 citations, with an h-index of 37 and a g-index of 61, indicating a fairly developed

field. Even though citation rates for newer works are lower because of limited exposure, m-index values ( $\geq 1.0$  since 2021) suggest that the impact of new studies is increasing. Figure 2 illustrates annual publication and citation growth, showing steady expansion with brief plateaus after 2018.

Table 1: Publication by Year (last 15 years)

Year	TP	NCA	NCP	TC	C/P	C/CP	h	g	m
2010	17	43	11	254	14.94	23.09	4	15	0.250
2011	21	33	14	443	21.10	31.64	8	21	0.533
2012	24	44	18	373	15.54	20.72	9	19	0.643
2013	21	37	9	202	9.62	22.44	5	14	0.385
2014	31	63	22	341	11.00	15.50	10	18	0.833
2015	21	40	15	279	13.29	18.60	6	16	0.545
2016	24	50	17	334	13.92	19.65	9	18	0.900
2017	16	38	13	150	9.38	11.54	6	12	0.667
2018	10	19	9	101	10.10	11.22	5	10	0.625
2019	22	66	20	197	8.95	9.85	8	13	1.143
2020	17	42	14	113	6.65	8.07	6	10	1.000
2021	19	36	16	170	8.95	10.63	6	12	1.200
2022	19	44	13	50	2.63	3.85	5	6	1.250
2023	17	45	12	45	2.65	3.75	4	5	1.333
2024	13	31	6	13	1.00	2.17	3	3	1.500
2025	11	40	3	3	0.27	1.00	1	1	1.000
<b>Total</b>	<b>303</b>	<b>671</b>	<b>212</b>	<b>3068</b>	<b>149.97</b>	<b>214</b>	<b>95</b>	<b>193</b>	<b>13.81</b>

Note: TP=total number of publications; NCA=Number of contributing authors; NCP=number of cited publications; TC=total citations; C/P=average citations per publication; C/CP=average citations per cited publication; h=h-index; g=g-index; m=m-index.

Source: Generated by the author(s) using bibliomagika® (Ahmi, 2024)

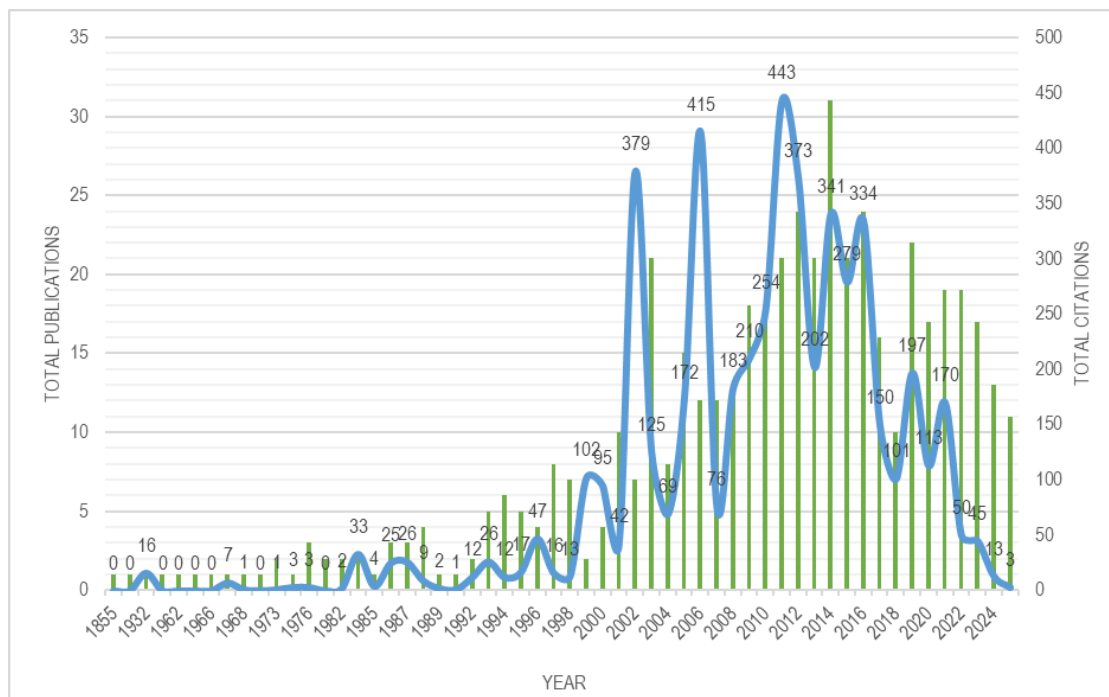


Fig. 2: Total Publications and Citations by Year

Source: Generated by the author(s)

#### 4.2 Country and institutional contributions

As shown in Table 2, the top institutions in this area are Harvard University, the University of California, and the University of Florida, which combine productivity with high citation averages. Meanwhile, Table 3 highlights that the United States leads with 151 publications, which is 30% of the total, and 3,684 citations. The United Kingdom and Germany follow. Emerging contributors are Indonesia, China, and Australia.

Table 2: Most productive institutions with a minimum of five publications

Affiliation	Country	TP	NCA	NCP	TC
Harvard University	United States	8	10	8	271
George Washington University	United States	5	5	5	148
University of Michigan	United States	5	6	5	155
University of California	United States	5	8	5	312
University of Wisconsin-Madison	United States	5	6	5	103
University of Florida	United States	5	7	5	212

Affiliation	Country	TP	NCA	NCP	TC
University of Iowa	United States	5	6	5	163

Note: TP=total number of publications; NCA=number of contributing authors; NCP=number of cited publications; TC=total citations

Table 3: The Top 5 Countries contributed to the publications

Country	TP	NCA	NCP	TC
United States	151	279	151	3684
United Kingdom	21	27	21	459
Germany	11	21	11	229
Indonesia	9	27	9	38
Canada	7	9	7	119

Note: TP=total number of publications; NCA=number of contributing authors; NCP=number of cited publications; TC=total citations

Additionally, Figure 2 visually reinforces the distribution of countries focused on research in the area of tuition fees, showing strong research clusters in North America and Western Europe, along with increasing representation from Asia.

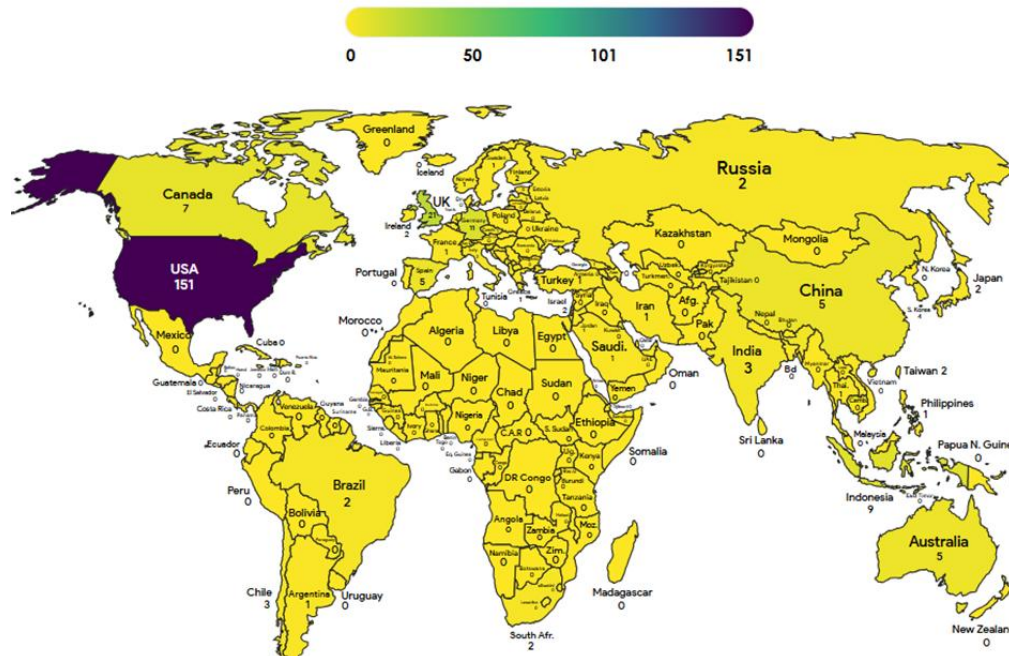


Fig. 3: Worldwide scientific production indexed by Scopus on labor relations.

Source: Generated by the author(s) using iipmaps.com

#### 4.3 Influential journals and documents

Peer-reviewed journals accounted for 84% of the analyzed dataset. Table 4 shows that Economics of Education Review, Journal of Higher Education, and Education Economics are the most active and influential publications. Meanwhile, the five most cited papers (Table 5) represent key contributions to understanding the relationship between tuition costs, access, and higher education. These studies focus on affordability, online learning, and the economics of pricing. They shape the global discussion on costs and access.

Table 4: Most active source titles that published 10 or more documents

Source Title	TP	NCA	NCP	TC	C/P	C/CP	h	g	m
Chronicle of Higher Education	40	39	12	21	0.53	1.75	2	3	0.069
Economics of Education Review	21	38	21	478	22.76	22.76	13	21	0.295
Education Economics	16	27	15	194	12.13	12.93	7	13	0.226
Journal of Higher Education	14	30	14	732	52.29	52.29	8	14	0.333
Research in Higher Education	11	16	10	110	10.00	11.00	5	10	0.094
Community College Journal of Research and Practice	11	24	9	44	4.00	4.89	3	6	0.091
Business Week	8	10	0	0	0.00	0.00	0	0	0.000
Higher Education	6	19	6	71	11.83	11.83	4	6	0.118
Review of Higher Education	6	12	5	210	35.00	42.00	4	6	0.148
Academic Leadership	5	19	2	2	0.40	1.00	1	1	0.053

Note: TP=total number of publications; NCA=Number of contributing authors; NCP=number of cited publications; TC=total citations; C/P=average citations per publication; C/CP=average citations per cited publication; h=h-index; g=g-index; m=m-index.





## 5.0 Discussion

This report demonstrates that research on college fees has escalated since 2010. The focus has now shifted to cost, policy impact, and access. The US is a major center for research on this topic. This is possible because the US has strong institutional support and adequate data availability. On the other hand, the number of researchers from countries in Asia, Africa, and Latin America is still relatively low. This situation indicates limitations in these regions, making collaboration and communication between researchers from various countries crucial. Judging from changes in research topics, there has been a shift from theoretical studies to empirical studies that utilize policy evaluation frameworks and econometric methods, making them more applicable. Approaches such as difference-in-differences and natural experiments demonstrate the development of methodologies used to conduct studies in this field. Using these methods, researchers can understand how changes in tuition fees affect the number of students who enroll, persist, and complete their studies. Another important trend is the increasing discussion of the equity and affordability of higher education. In recent years, keywords such as financial aid, low-income students, and cost sharing have emerged increasingly frequently. As access to higher education increases in middle-income countries, this trend indicates a global concern about the affordability and equity of higher education. However, collaboration has not yet occurred broadly and globally. Most research is still conducted within a single country, making the results difficult to apply to different socioeconomic conditions. These findings underscore the need for more comprehensive, interdisciplinary, and cross-national research collaborations. The research findings from the most frequently cited authors (Table 5) serve as a reference for policymakers in designing policies related to tuition fees, education subsidies, or community financial assistance. Figure 4b shows that universities need to strengthen transparency, increase affordability, and expand collaboration with institutions in various countries as a form of institutional support, particularly in Asia and Africa, to support the development of research in the field of tuition fees.

## 6.0 Conclusion and Recommendations

This Bibliometric Analysis illustrates the structure, growth, and key contributors of research on tuition fees in higher education. The findings show that research institutions and scholars from the United States dominate the literature, with a strong focus on affordability and access, while recent studies increasingly adopt data-driven and policy-oriented approaches. This study has several limitations, as it relied solely on the Scopus database and employed a title-based search strategy, which may have excluded relevant studies using alternative terminology or indexed in other databases. In addition, the analysis was limited to keyword co-occurrence mapping, and the inclusion of other science-mapping techniques, such as co-citation or bibliographic coupling, could provide deeper insights. Despite these limitations, the findings offer a robust overview of the intellectual and thematic landscape of tuition fee research. Future studies are encouraged to employ multiple databases, broader search strategies, and complementary bibliometric methods, while also fostering cross-regional collaboration and exploring emerging issues in higher education financing.

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## Paper Contribution to Related Field of Study

This study contributes by presenting a comprehensive bibliometric map of tuition fees research in higher education at the global level. It systematically identifies publication trends, influential authors and journals, collaboration patterns, and key thematic clusters that shape the intellectual structure of the field of tuition fees studies. Through keyword co-occurrence analysis and network visualization, the study also reveals the dynamics of research topic evolution over time and highlights limited or underexplored research areas. Thus, this study provides a structured empirical foundation for bibliometric research, systematic reviews, and further empirical studies in the field of higher education financing.

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