

Hidden Costs in Higher Education: A Literature Scientific Analysis

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Abstract: - Hidden costs are a relevant issue in the financial planning of institutions. In the context of higher education, this relevance serves to ensure stability, efficiency, and excellence in the development of institutional activities. The study's objective was to analyze the patterns of publication, collaboration, and evolution of research on hidden costs in higher education. A bibliometric methodology was used, with the search for documents in the Scopus and Web of Science databases. This search resulted in a total of 152 documents published from 2015-2023. The evolution of the production, the most cited authors, the countries with the highest production, the co-occurrence of keywords, and an author network analysis were identified. The results show that the distribution of documents is 44.73% for Scopus and 55.27% for WoS. The scientific production increased from 5 publications in 2015 to 23 in 2023. The United Kingdom is the country with the largest amount of research and Europe stands out as the continent with the largest contribution in this area. The authors with the most publications are Armstrong, N., Kleijnen, J., and Worthy, G. The constant increase in scientific production linked to hidden costs in higher education is evident. Such growth translates into a significant increase in publications and citations, thus reflecting the relevance and interest in the subject.

Key-Words: - Bibliometric analysis, hidden costs, higher education, financial planning, financial sustainability, institutional activities, operational efficiency, scientific production.

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1 Introduction

Effective management of hidden costs has proven to be a critical factor for the competitiveness and sustainability of organizations in a challenging business environment, [1]. Consideration of Strategic Cost Management (SCM) has become essential to achieve not only cost reduction but also improved competitiveness in a constantly evolving marketplace, [2]. However, the focus on SCM is not exclusively internal, Ogutu and others, [3], highlight how the identification of costs not only depends on internal factors but is also influenced by structural aspects of the sector and systemic factors, which reinforces the need for effective differentiation through logistics optimization, [4].

Hidden costs are described as those that are not only difficult to measure, but also often invisible in

accounting or management reports, [5]. In this sense, [6], consider the identification and measurement of hidden costs, which permeate the organization's operations, as a competitive advantage. In a constantly evolving market, where simply knowing production costs is no longer enough, Souza and others, [6], emphasize the need for more complete and detailed information, highlighting the role of identification and measurement of hidden costs as an essential tool for management.

According to, [7], hidden costs can negatively bias the evaluation of the impact of strategic decisions by masking key costs for management. The authors in, [8], point out that these costs, often ignored due to their complexity during the implementation of strategic decisions, can lead

managers to disregard the real costs of a strategic decision. The authors in, [9], highlight the connection between unaccounted costs and financial performance, underlining the importance of addressing these areas in educational management.

Hidden costs are found in various institutional actions and processes, this phenomenon is explained by, [10], who stresses the importance of identifying and accounting for environmental costs as a manifestation of hidden costs in the construction business environment. Similarly, [11], gives a notion by indicating that a lack of training can generate considerable hidden costs in an organization, in the form of process errors, loss of resources and time, decreased quality of work, customer dissatisfaction, and, ultimately, loss of revenue. Within the context of higher education, the contemplation of hidden costs acquires a dimension of vital importance, educational institutions are confronted with challenges around strategic planning and financial management, which leads to the need for an in-depth analysis of accounting costs, [12].

The identification and management of hidden costs in higher and secondary education is essential for improving the quality of education and the financial health of educational institutions. In the context of higher education, hidden costs include elements such as absenteeism, occupational accidents, staff turnover, lack of quality, and direct productivity loss, which can amount to up to \$12,000 per person per year, [13]. In particular, faculty turnover in higher education can affect the composition and quality of teaching staff, with teachers who leave an institution generally being less effective than those who stay, [14]. In the case of secondary education in Colombia, hidden costs are related to the low quality of public education in comparison to private education, and the impact of this difference on household choices for one educational option over another, [15].

In the organizational and accounting field in general, it is important to consider a wide range of costs, including direct and indirect costs, opportunity costs, and quality costs, when designing strategies in their processes to enter and remain in force in emerging markets, [16]. For the operation of an organization, it is necessary to consider not only accounting costs, but also hidden costs and other factors that can affect profitability, [17]. Hidden costs are those costs that are not easily identifiable or quantifiable, but that can have a significant impact on the profitability and success of an organization, [18], [19].

The authors in, [20], [21], suggest that the hidden costs derived from the lack of emotional and psychological well-being can have economic repercussions, so it is essential to prioritize the safety and both physical and mental well-being of students. This will not only promote individual academic achievement, but also the competitiveness and prestige of the educational institution, these aspects extend to broader areas, such as hidden costs for students and their families, costs linked to extracurricular programs, and sports activities, [15].

The hidden costs in higher education can vary in nature and origin, yet all represent significant barriers for students and academics alike. On one hand, the hidden costs associated with applying for financial aid, as documented in, [8], include the complexity of the FAFSA process and the challenges of the verification process, which can affect a student's eligibility for financial aid and, ultimately, their decision to enroll in an educational institution. On the other hand, [22], highlights the hidden costs related to engaging with network technologies such as Twitter and Facebook, which are essential for contemporary academic activities. Online harassment in these spaces, disproportionately affecting women and individuals from certain races or ethnicities, can lead to self-censorship and negatively impact the health and well-being of academics, as well as diversity and innovation in academic research.

The importance of this issue has led several authors to discuss how to address and mitigate hidden costs in the context of higher education, to address hidden costs educational institutions must implement effective financial risk management policies and transparent communication with the broader educational community, [23]. Hidden costs are important to implement for proper resource management, improve the efficiency and effectiveness of education, and ensure equitable access to quality education for all students, [15]. For example, hidden costs arise such as those related to the maintenance and repair of facilities, teacher and administrative staff turnover, expenses arising from the cancellation of educational programs, and costs generated by student dissatisfaction, these elements, although not initially contemplated in the initial calculations, have a financial and strategic impact on educational institutions, [11].

The efficient management of hidden costs can contribute significantly to improving the profitability, competitiveness, and long-term sustainability of academic institutions, [24]. The identification and analysis of these latent costs become fundamental pillars for strategic and

effective management in the educational context, generating especially valuable benefits in the human sphere, which is one of the most relevant elements, [19], [25]. Effective cost management through adequate financial planning demands an institutional culture that allows early detection and mitigation of its impact on the organization, [26].

These costs, instead of being accounting costs, are understood as economic costs due to their link with resource scarcity and opportunity costs, allowing their application in management, [5]. Hence, unskilled labor can be a driver of these hidden costs, [9]. Four main categories of activities are identified that tend to accumulate more hidden costs (Table 1): logistics activities, balancing operations, quality-linked actions, and change operations, [27]. Consequently, proactive, and accurate consideration of these latent economic factors becomes essential for effective management in various contexts, including the field of higher education.

Overcoming the obstacles and limitations associated with the identification and management of these costs requires a comprehensive and systematic approach, [28]. In general terms, research in this area continues to evolve, and it is anticipated that in the future new categories of hidden costs will be identified and more advanced tools and methodologies for their detection and management will be forged. The identification and analysis of hidden costs play a crucial role in strategic management, enabling higher education institutions to make informed decisions about educational projects and programs, [10]. This approach has driven research on this topic; therefore, this research performs a comprehensive bibliometric analysis to identify trends, influential authors, and relevant countries on the topic, assessing the evolution of research and future perspectives in higher education and other sectors, [29], [30].

Table 1. Hidden costs

Activities	Description
Logistics operations	These costs, linked to the handling of materials, are generated by a variety of professionals, and include the costs of receiving, storage, internal distribution, shipping, and transportation.
Balance operations	These ensure harmony between demand, processing, and delivery of materials, involving personnel costs, procurement of materials, and the prompt availability of these resources.
Quality	These costs are linked to product quality, extending beyond the simple perception of final product control.
Change operations	These comprise alterations in products and specifications, production costs, quality-related costs, and the costs associated with having a structure that can easily adapt to the change process.
Dysfunctions	Description
Surplus	These refer to remuneration given without obtaining equivalent work in return, which may arise from severance payments or personnel shortages.
Overconsumption	Use of energy, materials, and supplies whose cost would be reduced if the company did not have to solve faults or problems.
Overtime	Time spent on troubleshooting rather than on actual production.
Opportunity cost	Missed opportunities related to the manufacture and/or marketing of a product.

Source: Benin and others, [27].

2 Methodology

Data Sources

A thorough bibliometric analysis was carried out using two of the most prestigious databases in the academic field, Scopus, and Web of Science (WoS), [31]. As mentioned by, [32], this methodology aims to understand and evaluate the scientific production of a specific topic through indicators that measure the productivity and quality of research. In this sense, the evolution of scientific production, the most cited authors, the countries with the highest production, the co-occurrence of keywords, and network analysis were identified. The study period established goes from 2015 to 2023.

Scopus and WoS stand out as top-tier research platforms, providing comprehensive facilities for exploring, assessing, and disseminating knowledge across a range of fields including the sciences, social sciences, arts, and humanities. These databases play a pivotal role in streamlining and enhancing the processes involved in scientific research, [33].

A strategic search was conducted on both platforms, using the search terms hidden cost and higher education. First, for Scopus, the search was performed in the title section, abstract, and keywords. The following search algorithm was obtained: ("hidden costs" OR "invisible costs" OR "unaccounted costs" OR "unseen costs" OR "unmeasured costs") AND ("higher education" OR "organizations" OR "enterprises"). The WoS platform was searched for (costs OR expenses OR expenditures) AND (hidden OR indirect OR unaccounted OR unplanned OR unforeseen).

Table 2. Search parameters for document filtering

Type	WoS	Scopus
Title, abstract, keywords	2359	2239
Type of document	1354	1223
Year of publication	559	832
Categories	184	154
Open access	68	84
Total		152

Source: Prepared by the authors

Table 2 details the parameters used to refine the search for information, each parameter represented a specific filtering criterion, and there was a slight variation in the filtered results, where the WoS database generated a greater number of results. The consideration of thematic categories and type of document allowed the search to be oriented towards

works within the areas of interest. This strategic search methodology highlights the need for a rigorous approach in the collection of academic literature, with a diversity of filtering criteria to access relevant documents.

Data Analysis

The present bibliometric study was conducted utilizing the VOSviewer software. This tool offers a range of features that render it ideal for conducting in-depth bibliometric analyses. VOSviewer can handle extensive datasets and can create maps based on various types of data, such as citations, co-authorship, or co-occurrence of data. The software provides a user-friendly interface and supports multiple visualization techniques, [34].

In bibliometric analysis, there are two main parts. The first is the descriptive and performance analysis. In this analysis, general information on sources and types of documents was provided. In addition, statistical data on the annual and total number of studies and citations were calculated. Then, the most cited studies were presented based on the top 9 studies. Finally, the most productive authors, sources, institutions, or countries were introduced. The second analysis was based on scientific mapping and network analysis. Cooccurrence networks and authors' participation were analyzed based on a network approach (Table 3).

Table 3. Bibliometric analysis approaches

Methodology	Description	Analysis units	Functionality	Result
Citation	Calculate the impact magnitude for files, authors, or journals by considering their citation rate.	The journal author profile	It is easy to quickly locate the most significant research in this field	New research works have less time to accumulate citations, which can result in bias when compared to older research works that have had more time to be cited.
Co-citation	Connect files, authors, or journals based on their presence in the bibliography.	The journal author's profile	This is seen as the most prevalent and dependable method for connecting to files, authors, or journals using reference citations. The quote serves to gauge the impact level, thereby identifying the most vital research contributions.	This approach applies to the referenced articles, but it is not ideal for mapping research because citations take time to accumulate. As a result, new publications cannot be directly linked and must instead be connected through unclear and complex rules. A significant number of citations are required to map the articles, making it difficult to find articles with few citations. Moreover, when conducting a Social Sciences Citation Index (SSCI) or Web of Science (WOS) researcher citation reference, only information about the first author is accessible.
Bib. Coupling	Establish connections between files, authors, or journals by assessing the quantity of shared references.	The journal author Profile	There's no need to accumulate citations for immediate use. This can be applied to newly published works that	This method is constrained to a relatively short period of usage, typically up to five years, as it fails to distinctly identify the most significant research through quotations. Consequently, it becomes

Methodology	Description	Analysis units	Functionality	Result
			haven't been cited yet, as well as burgeoning research areas and more niche sub-disciplines.	challenging to ascertain the importance of specific publications.
Co-author	Establish connections between the authors participating in the authorship.	Author	The author can present proof of collaboration and map out the social framework within the field of cognition.	The act of co-authoring as a form of collaboration is not consistently acknowledged or given due credit.
Co-word	Connect keywords that are found in the same title, summary list, or keyword section.		The primary text of the documents is utilized for the analysis, in contrast to other methods that rely solely on bibliographic metadata.	Words can manifest in various forms and can carry different interpretations depending on the context.

Source: [35].

3 Results

The results show several findings that contribute to the understanding of how hidden costs are addressed within higher education institutions. In general, the data collected indicate that there is a very active and recognized community of researchers in the fields of accounting, economics, and financial sciences, who seek to improve business management, determine the risks presented by organizations, and provide solutions to those risks.

The diversity in the findings is the result of numerous publications originating from different countries, each employing a unique approach to investigate the hidden costs in higher education. Regardless of their geographical origin or methodological differences, these studies consistently maintain the central goal of uncovering and exploring the hidden expenses associated with the pursuit of higher education. These hidden costs can encompass a range of factors, including, but not limited to, indirect expenses such as transportation and accommodation, unexpected fees, and opportunity costs related to potential income loss during the study period, in addition to costs presented for institutions in relation to the different resources that are handled.

Development of Bibliometric Analysis

Figure 1 illustrates the number of research papers published in the Scopus and WoS databases between 2015 and 2023 and shows a trend of increasing scientific production. In total, 158 papers related to the topic of hidden costs and higher education were identified, showing a low number of articles published on both platforms in 2015. However, the scientific production increased by 460% from 5 papers to 23 in the last year. The

distribution of documents in both databases is 44.73% for Scopus and 55.27% for WoS.

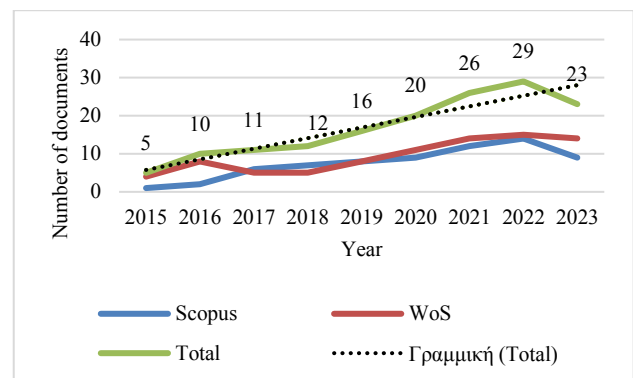


Fig. 1: Scientific production by years

Source: Prepared by the authors

The information presented on the 20 authors with the most research (Table 4). Armstrong, N., is the most prominent author with 14 publications, which represents 9.21% of all publications in this area.

Table 5 presents the ranking of the countries that have contributed the largest number of publications and shows that the United Kingdom occupies first place with the largest number of publications on both platforms, followed by the United States. In general, there is a greater number of countries from the European continent showing interest in publishing on this topic, followed by Asia, America, and Africa, respectively.

Publications cover all continents. In the Americas, the predominant countries are the United States and Canada in North America, and Brazil in South America. The continent with the highest percentage of publications is Europe. In Asia, India and China stand out, while Australia stands out in Oceania (Figure 2).

Table 4. Number of documents by authors

Author	Number of publications	% Total
Armstrong, N.	14	9,21%
Kleijnen, J.	11	7,24%
Worthy, G.	9	5,92%
Joore, MA.	9	5,92%
Stevenson, M.	9	5,92%
Riemsma, R.	8	5,26%
Carolan-rees, G.	8	5,26%
Clowes, M.	8	5,26%
Duffy, S.	7	4,61%
Fayter, D.	7	4,61%
Petrou, S.	6	3,95%
Tappenden, P.	6	3,95%
Wong, R.	6	3,95%
Ramaekers, BLT.	5	3,29%
Ryder, S.	5	3,29%
Van Asselt, ADI.	5	3,29%
Boland, A.	4	2,63%
Craig, J.	4	2,63%
Grimm, SE.	4	2,63%

Source: Prepared by the authors

Table 5. Number of documents by country of publication

Country	Scopus	WoS	Total	% Total
England	13	18	31	20,4%
United States	8	9	17	11,2%
Netherlands	6	7	13	8,6%
Australia	5	8	13	8,6%
Germany	5	7	12	7,9%
Canada	4	6	10	6,6%
France	4	5	9	5,9%
Spain	3	4	7	4,6%
Switzerland	3	4	7	4,6%
China	2	3	5	3,3%
Italy	2	3	5	3,3%
Wales	2	3	5	3,3%
Scotland	2	2	4	2,6%
Belgium	2	2	4	2,6%
Sweden	2	-	2	1,3%
Denmark	1	1	2	1,3%
Ireland	1	1	2	1,3%
Brazil	1	1	2	1,3%
India	1	-	1	0,7%
Malaysia	1	-	1	0,7%

Source: Prepared by the authors

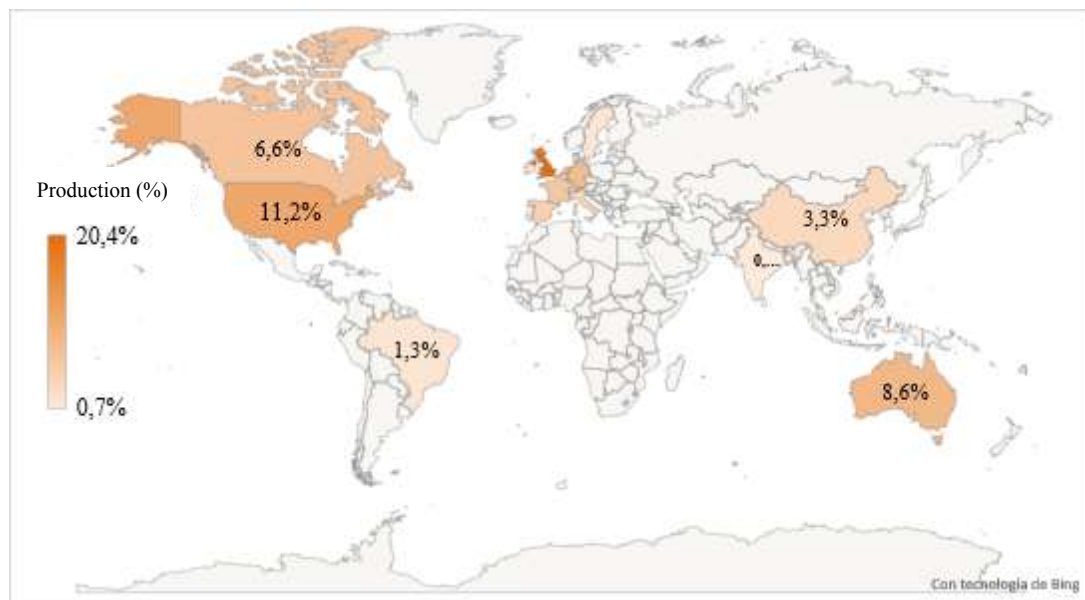


Fig. 2: Map of scientific production by country

Source: Prepared by the authors

The National Natural Science Foundation and the Ministry of Education of the People are the most prominent institutions in relation to hidden

costs in higher education, with values close to 10, while the American Anthropological Association and the American Accounting Association are less

relevant on the subject (Figure 4). For their part, the Université Jean Moulin Lyon 3 and the University of Johannesburg are the main funders of research on this topic, exceeding the value of 7 papers, in contrast to Stanford University and the State University System of Florida, which have sponsored less research (Figure 3). These graphs underscore the influence and role of certain organizations in the literature on hidden costs in higher education, and it is crucial to consider these affiliations when interpreting research in this field.

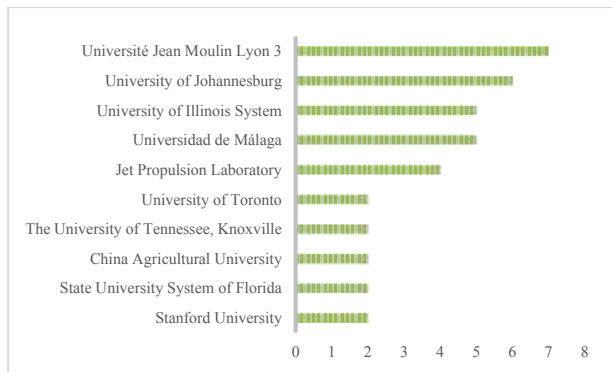


Fig. 3: Most relevant affiliations
Source: Prepared by the authors

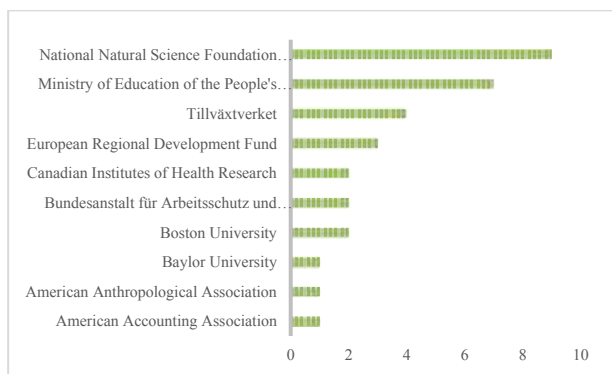


Fig. 4: Documents by funding Sponsor
Source: Prepared by the authors

Table 6 provides a list of academic journals ranked by their level of activity, as measured in terms of the number of articles published, their 2022 SJR impact index, and the academic categories to which they belong. "Global Business And Organizational Excellence" is the most active journal with 9 articles published, but it has a relatively low SJR index of 0.52 in the Business and International Management category (Q2). In contrast, "Strategic Management Journal," with 5 articles published, boasts the highest SJR index on the list, at 8.5, within the same category, but in Q1, indicating a higher quality or impact in its field. The other journals vary in their level of activity, SJR index, and academic categories, including

Education, Accounting, Geography, Planning and Development, Business Ethics, and Construction, all in quartile 1 (Q1) except for "Global Business And Organizational Excellence." This suggests that while some journals may be more active in terms of publications, they do not necessarily have a higher impact in their field.

Table 6. Most active source title

Journal	Articles	SJR (2022)	Categories
Global Business And Organizational Excellence	9	0.52	Business and International Management (Q2)
Strategic Management Journal	5	8.5	Business and International Management (Q1)
Educational Evaluation and Policy Analysis	3	1.83	Education (Q1)
British Accounting Review	3	1.28	Accounting (Q1)
Sustainability	3	0.66	Geography, Planning and Development (Q1)
Journal of Business Ethics	2	2.59	Arts and Humanities (Q1)
Area	2	0.82	Geography, Planning and Development (Q1)
Higher Education Quarterly	2	0.77	Education (Q1)
International Journal Of Sustainability In Higher Education	2	0.75	Education (Q1)
Energy	1	1.99	Building and Construction (Q1)

Source: Prepared by the authors

Bibliometric Map

Figure 5 shows the patterns and relationships between the keywords most used by researchers in the set of documents analyzed. It is possible to observe the frequency with which the keywords are linked, which are: Economic burden, care, costs, costs, cost-effectiveness, and health care costs. These keywords are the most used by researchers to refer to the topic of hidden costs and their impact on business management.

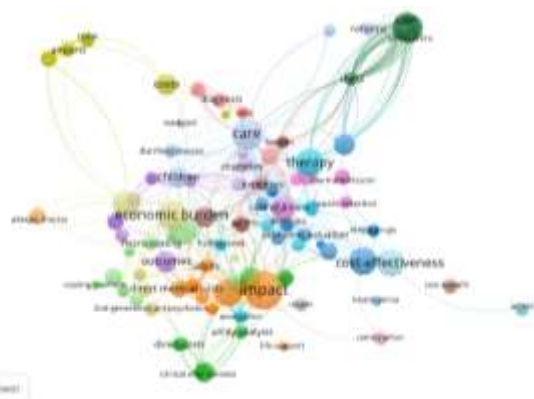


Fig. 5: WoS keyword concurrence diagram

Source: Own elaboration using WoS data, with the VOSviewer program.

Figure 6 represents the authorial concurrence map, which shows the collaboration networks among the authors who have published on the topic of hidden costs and higher education. It can be seen that of the total number of authors only 20 present collaboration among themselves, and have collaborated to a greater extent, and represent a clearly defined cluster within the diagram, the authors are: Adhikari C, Cerda A, Chattu Vk, Chuc N, Correia T, Garcia L, Jakovljevic M, Than Hn, Khatri Rb, Kouassi E, Krstic K, Kumara As, Liu Ys, Mariita Rm, Osabohien R, Simonyan M, Toan Tk, Varjadic M, Wang I, Wijeretne T.

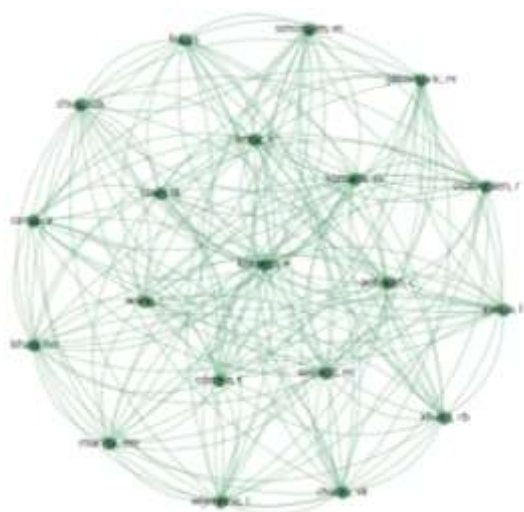


Fig. 6: WoS author concurrence diagram

Source: Own elaboration using WoS data, with the VOSviewer program.

Figure 7 presents the patterns and relationships between the keywords most used by researchers, showing the frequency with which, the keywords are linked, which include terms such as: decision-making, process, economic sciences, economics, and social effects. These keywords are the most

used by researchers to refer to the impact of hidden costs on the economy of companies and industry in general.

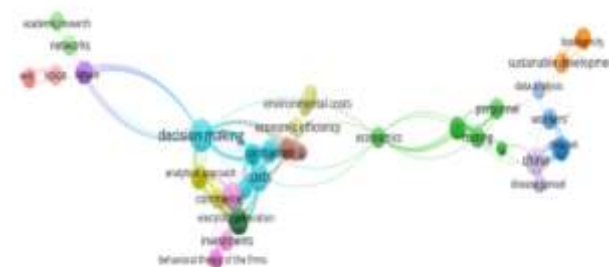


Fig. 7: Keyword concurrence diagram in Scopus

Source: Own elaboration using Scopus data, with the VOSviewer program.

Figure 8 presents a concurrence map showing the collaboration networks among the authors. In this map, it can be seen that out of the total of 98 authors, only 14 are selections that present a connection with each other, have collaborated to a greater extent, and represent a clearly defined cluster within the diagram, the authors are: Dey A, Ganesham P, Gupta A, Kumar V, Mahanta H, Patel C, Patel M, Patel R, Sahay N, Sahu B, Shinde C, Tole P, Verma S, Vivekanandna P.

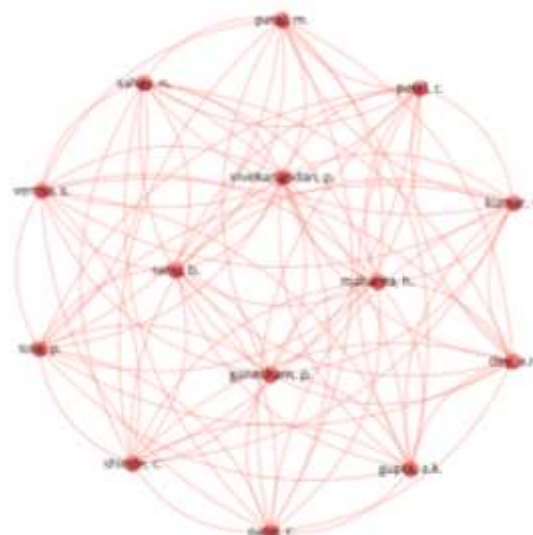


Fig. 8: Scopus author concurrence diagram

Source: Own elaboration using data from Scopus, with the VOSviewer program.

Table 7 shows the thematic variety of the main research, although this work focuses on hidden costs in higher education, it addresses topics ranging from educational technology to geopolitics in higher education. Recent works denote current issues and the diversity of journals in which they were published, the articles point to the breadth of

academic fields and the variability in the number of citations denotes their impact on the scientific community.

Table 7. Top of most cited documents

Authors	Journal	Title	Year	Total citations
[36]	International journal of sustainable in higher education	Barriers to energy efficiency and the uptake of green revolving funds in Canadian universities	2015	17
[22]	Learning, media, and technology	The hidden costs of connectivity: nature and effects of scholars' online harassment	2021	15
[37]	Research in higher education	The assumed benefits and hidden costs of adult learners' college enrollment	2015	8
[38]	Area	Cosmopolitans sidestep: university life, intimate geopolitics, and the hidden costs of "global" citizenship	2019	8
[8]	Educational evaluation and policy analysis	The hidden costs of corroboration: estimating the effects of financial aid verification on college enrollment	2021	6
[39]	Sustainability (Switzerland)	Problem-focused coping strategies, workplace bullying, and sustainability of heis	2020	4
[40]	PLOS ONE	A clinical trial to evaluate the dayzz smartphone app on employee sleep, health, and productivity at a large US employer	2022	3
[41]	2020 IFEEES World Engineering Education Forum - Global Engineering Deans Council, WEEF-GEDC 2020	Ethics in Engineering Education 4.0	2020	2
[42]	Community College Journal of Research and Practice	Inclusive access: a multi-institutional study of academic outcomes from a statewide community college automatic billing e-textbook pilot	2023	2

Source: Prepared by the authors

The papers show an empirical focus on outcomes and focus on quantitative evaluation, e.g., financial aid in college enrollment, effectiveness of mobile apps, and employee productivity. This research addresses the financial side of higher education institutions, as well as that of students, highlighting the interest in understanding and quantifying the practical outcomes of interventions and strategies. Thus, the diversity of approaches and disciplines in the field of higher education is evident, as well as the relevance of understanding and solving current problems.

4 Discussion

Hidden costs acquire substantial relevance within higher education institutions, given their nature of

not being easily visible or identifiable to the naked eye, which has a direct impact on their operation and effectiveness, [43]. According to, [44], in this context, hidden costs can manifest themselves with both direct and indirect effects generated by elements such as occupational accidents, affecting both students and the institution itself. Similarly, [1], raises the possibility that these hidden costs are also present in educational institutions, where the lack of conflict resolution and the lack of a professionalized administration impact the quality of teaching and operational efficiency, at all stages from implementation to the provision of final services, [45]. It is also important to consider, [41], assertions that hidden costs can also result from underinvestment in fundamental public services such as education and health, essential elements for the well-being of society.

In this study, several aspects have been examined, related to hidden costs that are often not visible at first glance and have important implications in educational management, [46]. Jointly, hidden costs have been identified in areas such as investment in student welfare, costs derived from untapped opportunities, and educational resource management costs, [47]. As well as costs linked to inefficient use of resources, costs associated with student training and support programs, and costs related to campus safety, [48]. Each of these components demonstrates how hidden costs impact the quality and efficiency of higher education, highlighting the importance of addressing them effectively.

It is essential that higher education institutions can identify and effectively manage these hidden costs to optimize their profitability and long-term sustainability, [49]. In this context, reducing costs linked to quality becomes relevant by implementing robust quality control systems and fostering continuous improvement of educational processes, [50]. Costs related to inventory management can be decreased by adopting effective educational resource management systems and optimizing educational logistics, [51].

In the context of higher education, hidden costs can also generate social and environmental impacts, [52]. For example, costs associated with safety can be directly related to accidents in the academic environment and injuries that affect the health and well-being of students and staff, [53]. In a similar area, the costs allocated to training and skills development of teachers and administrative staff can positively influence job satisfaction and the efficiency of the work performed, thus improving the overall quality of the education offered, [54].

Hidden costs are a concern that encompasses a variety of areas, including higher education and the social and economic sphere in general. Ruiz and others, [55], scholars agree that resource planning is essential in the management of higher education institutions, as it enables the organization and control of resources, as well as the evaluation of costs. Each of these authors adopts a unique perspective when examining different aspects, in the same way, [56], highlight hidden costs linked to social emergencies, highlighting examples such as the decline of human capital in educational institutions, emphasize how hidden costs can transcend educational boundaries and manifest themselves in social dimensions in a significant way.

Due to the continued relevance of this challenge in the field of educational education, researchers have also put forward strategies to address these hidden costs, as, [57], expose, these authors emphasize the need to implement effective quality controls and to have trained personnel, proposing the creation of performance indicators, conducting audits, and promoting communication and teamwork. Contrasting this perspective, De Souza and others, [58], argue that factors contributing to the occurrence of hidden costs include lack of planning, insufficient staff training, lack of quality control, and omission of preventive maintenance of equipment. At the same time, it is important to identify and measure these costs in the educational setting to implement measures that reduce them and, therefore, improve the efficiency and effectiveness of institutions. Likewise, [56], considers that cost reduction in general is a fundamental strategy to improve the finances of educational institutions, proposing techniques such as optimizing the use of resources, reducing supply costs, improving teaching processes, and minimizing financing costs as ways to achieve this.

5 Conclusions

It is necessary to deepen and broaden the research on hidden costs in the context of higher education, to strengthen academic institutions in the identification and optimal management of their resources. This field of research encompasses topics ranging from financial management, human resource management, supply chain logistics, and risk management. In this sense, this area is not only intended to enrich the understanding of hidden costs in the higher education environment but also promises to unveil novel practices and approaches that will generate improvements in the effectiveness of hidden cost detection and management.

The growth in scientific production is evident, such growth translates into a significant increase in the number of publications and citations, and this increase shows the relevance and interest of researchers in hidden costs. Through rigorous bibliometric analysis, it is suggested that the most advanced and promising areas of research are those that focus on the identification, quantification, and mitigation of hidden costs. In the same sense, the management of these costs is established as a primary principle, to foster the progress of educational institutions and enhance their capacity to provide an excellent educational service.

In the Scopus and WoS databases, a relevant number of papers and research related to hidden costs in higher education are highlighted. This highlights the commitment of academics and experts to study this topic. There is a concentration of European authors, which indicates a particular emphasis on this geographic region. Likewise, an active interaction among researchers is identified, which allows for the exchange of ideas and the socialization of their findings. This research promises to enrich both knowledge and financial practices, fostering a more robust and competitive academic environment, which is an advantage for the academic community and educational management.

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