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Financial Reports of Universities in the Context of Digital and Technological Transformation − Bibliometric Analysis

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Abstract. *The financial reporting landscape in higher education institutions is undergoing a significant transformation driven by digital and technological advancements. This study employs a bibliometric analysis to explore the evolution of financial reporting in universities within the broader context of digitalization. By analyzing academic publications, citation patterns, and research trends, we identify key themes, influential works, and emerging directions in this domain. Using data from the Web of Science database, the systematic literature review applies primary and secondary search tags, resulting in a dataset of 721 open-access publications from 2015-2024. To process this data, we utilized VOSviewer, employing bibliometric techniques such as co-occurrence analysis, keyword mapping, and clustering. Our findings highlight the increasing intersection between financial management, higher education policy, governance, and digital transformation. Notably, clusters related to "Higher Education Policy," "Governance," "Management," "Impact," and "Performance" demonstrate strong linkages, reflecting the growing emphasis on transparency, efficiency, and accountability in university financial reporting. The study underscores the critical role of artificial intelligence, blockchain technologies, and big data analytics in enhancing financial reporting accuracy and security while addressing challenges related to regulatory compliance, data privacy, and standardization. Our research contributes to existing literature by identifying key trends, gaps, and future directions in digital financial reporting for Higher education institutions. The findings offer valuable insights for policymakers, university administrators, and researchers aiming to optimize financial management and governance in the digital era.*

Keywords: financial reporting, universities, digital transformation, governance, management, higher education policy, bibliometric analysis.

Introduction

In the era of transformation Digital and technological, reporting financial in university pass by significant change. The increasing use of frequency digital instruments, artificial intelligence and big data analytics has reshaped module in which higher education institutions collect, analyze and presents information financially. This progress improves transparency, efficiency and the processes

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decision-making, but enter and challenge new security related data, standardization and regulatory compliance (Puri & Garg, 2024).

This paper uses a bibliometric analysis for an explorer of evolution reporting finance in university in background may wide of transformation digital and technological. By examining publications academic, citation patterns and research trends, we propose saddle identified themes key, works influence and direction emergent in this field. Research previous ones have highlighted the impact significant transformation digital on investments and value companies, emphasizing importance understanding these trends in background educational (Zhang & Wang, 2024).

Our analysis is based on a systematic review of scientific literature, utilizing data from the Web of Science. To ensure comprehensive coverage, the study apply search tags primary and secondary, such as "Financial reports higher education digital transformation", "International Public Sector Accounting Standards (IPSAS)", "Governmental Accounting", "University Governance" and "Higher Education Policy". These keywords have expanded the set initial data from 34 to 2,929 articles, of which 721 publications with access opened from 2015-2024 were select for analysis subsequent.

For processing data, we used the applications VOSviewer (version 1.6.20), applying technical bibliometrics such as co-occurrence analysis, mapping word authors key and clustering. This approach methodology allows identification of research trends and clusters exhibition in field reporting finance in universities. The results highlight the growing intersection between management financial, political education upper and digital transformation, with clusters related to "Higher Education Policy" (the power link 322), "Governance" (power link 183), "Management" (power link 168), "Impact" (power link 177) and "Performance" (power connection 100).

The digital transformation of financial reporting in higher education institutions is an emerging field that has gained increasing attention in recent years. However, despite extensive discussions on digitalization in public sector accounting, there remains a limited focus on how these technological advancements specifically impact university financial reporting frameworks, governance, and policy implementation. Existing studies primarily explore financial transparency, regulatory compliance, and digital innovations in broader financial contexts but do not provide an in-depth analysis of their implications for higher education institutions. This research seeks to fill this gap by conducting a bibliometric analysis to identify trends, key themes, and emerging areas of interest in the intersection of digital transformation and financial reporting in higher education institutions. The study contributes to academic discourse by offering data-driven insights that can inform policy decisions, enhance institutional financial governance and optimize transparency mechanisms within the higher education sector.

The paper is structured as follows: first, we present a literature review helpful regarding financial reports and transformation digital in higher education; next, we describe methodology use for analysis bibliometrics; then, we discuss key findings, highlighting homework research dominants and gaps existing; finally, we conclude with implications for research and practicable future.

Literature review

The digital transformation of financial reporting in higher education institutions (Higher education institutions) has gained significant attention in recent years. The adoption of digital technologies, big data analytics and artificial intelligence (AI), is reshaping accounting practices and reporting processes in universities. This literature review synthesizes key insights from academic research

on the impact of digitalization on financial reporting in universities, addressing both benefits and challenges.

Digitalization has led to fundamental changes in the way financial information is collected, processed, and disclosed in universities. Traditional accounting systems have been gradually replaced by automated, data-driven solutions that enhance accuracy, efficiency, and transparency. Studies indicate that AI and blockchain technologies play a pivotal role in ensuring data security and real-time financial reporting (Thursina, 2023).

The literature highlights that financial reporting in universities must adapt to regulatory requirements and international accounting standards, such as the International Public Sector Accounting Standards (IPSAS) (Țurcanu & Grigoroi, 2024). The shift from traditional to digital financial reporting systems has improved financial accountability but has also introduced new compliance challenges.

Big data analytics enables universities to optimize their financial management by extracting meaningful insights from large datasets. Bibliometric analyses have shown an increasing trend in research on the role of big data in financial reporting (Attaran, Stark, & Stotler, 2018). The implementation of big data solutions facilitates predictive analytics, enabling universities to forecast budgetary needs and financial risks effectively.

Despite its benefits, the integration of big data into financial reporting presents challenges, including data security, privacy concerns, and the need for skilled personnel to analyze and interpret financial data.

Transparency in financial reporting is a fundamental requirement for ensuring trust and accountability in higher education institutions. Studies emphasize that transparent financial practices improve investor confidence and institutional credibility.

Universities are increasingly required to disclose financial statements that comply with international financial reporting standards. A bibliometric review of transparency in financial reporting suggests that institutions implementing IFRS and IPSAS demonstrate higher levels of financial accountability (Nagham & Mohamed, 2024).

Despite the push for greater transparency, universities face several obstacles, including resistance to change, regulatory inconsistencies, and limitations in financial reporting technology. The research also points to a lack of standardized financial reporting frameworks across different higher education systems, which complicates financial comparisons and benchmarking (Barbu et al., 2020).

Artificial intelligence has the potential to revolutionize financial reporting by automating accounting processes, detecting anomalies, and providing predictive financial insights. AI-powered financial tools help universities enhance budgeting, forecasting, and risk assessment strategies (Guşe & Mangiuc, 2022).

While AI provides significant benefits, ethical concerns related to algorithmic bias, data privacy, and regulatory compliance must be addressed. Scholars argue that universities must develop AI governance frameworks to ensure responsible use of AI in financial reporting (Díaz-García et al., 2022).

The financial sustainability of universities depends on efficient financial management and strategic budget allocation. The decentralization of financial management provides institutions with greater autonomy but also requires rigorous oversight to prevent financial mismanagement (Nuraini et al., 2024).

The adoption of digital financial management tools, such as cloud-based accounting systems and AI-driven analytics, improves decision-making processes in university administration. Research suggests that these technologies facilitate real-time financial monitoring and reporting, allowing institutions to respond promptly to financial challenges.

The digital transformation of financial reporting in higher education institutions is an ongoing process that presents both opportunities and challenges. The reviewed literature indicates that while digital technologies enhance efficiency, transparency, and accountability, universities must address issues related to data security, compliance, and ethical AI implementation.

Based on the study's focus on the evolution of financial reporting in universities within the broader context of digitalization, here are four key research questions (RQs) that could guide the presentation of results:

RQ1: What are the dominant research trends and emerging themes in financial reporting for higher education institutions, as identified through bibliometric analysis?

RQ2: What were the most important topics addressed in accordance with the research topic regarding the financial reporting of higher education institutions?

RQ3: What are the future directions of research in digital financial reporting for universities, and how can policymakers and managers leverage these findings to improve governance and transparency?

Methodology

The integration of data from various scientific works, its processing using specialized software and mathematical algorithms, and the formulation of recommendations for decision-makers in higher education institutions can contribute to resolving current challenges (Baig et al., 2021).

Bibliometric studies are based on principles derived from bibliography and statistical bibliography. When dealing with large data volumes, heterogeneity, and time constraints, modeling software for data systems must overcome various challenges to ensure research findings are both relevant and applicable (Dobrica, 2023).

This paper's bibliometric analysis utilized data from the Web of Science database. For data processing, we employed VOSviewer (version 1.6.20).

To extract relevant data on existing scientific papers in the Web of Science database, the primary search tag “Financial reports higher education digital transformation” was used, yielding 34 relevant articles. Upon reviewing these results, the authors determined that the Web of Science database does not comprehensively cover all aspects of financial reporting in higher education. Consequently, additional search tags were introduced to broaden the scope, including “international public sector accounting standards IPSAS”, “IPSAS”, “government accounting”, “university governance”, and “higher education policy”. These refinements expanded the database to 2,929 articles (to answer RQ1 and RQ2).

To reflect our selections we outline the process of biliometric analysis of the articles using the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) flowchart that illustrates the process of identifying, screening, and including relevant articles from the Web of Science database (Figure 1).

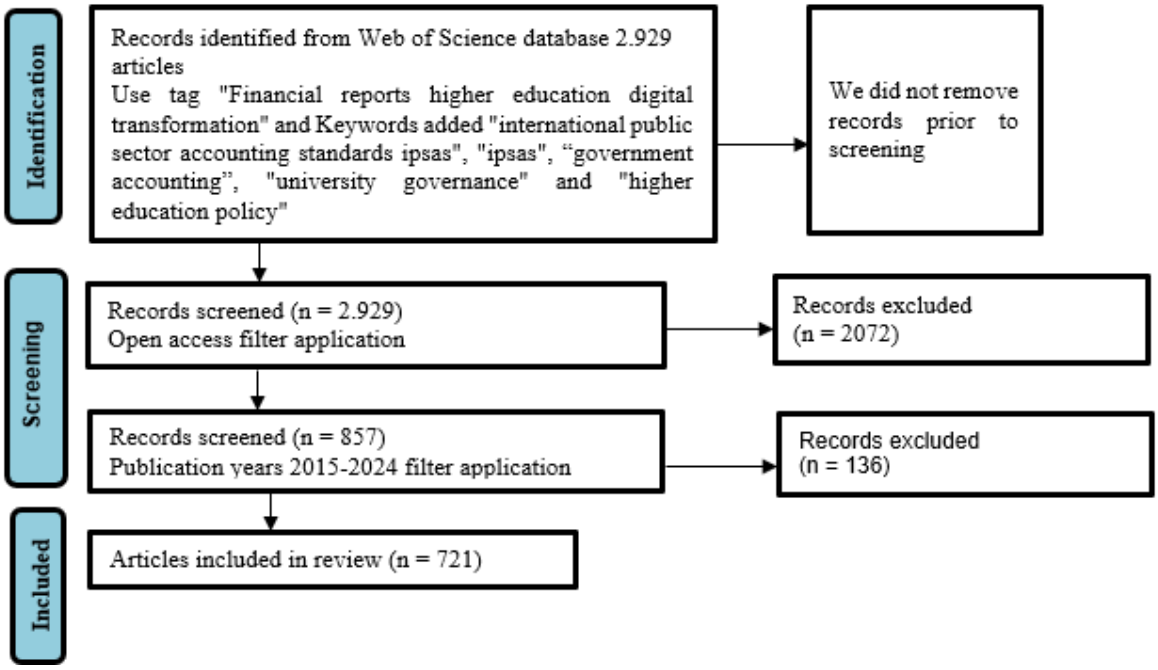

Figure 1. Sample selection

Source: Web of Science (accessed 17.01.2025).

For this selection of scientific papers to reflect current and accessible research, consecutive filters were applied to include only Open Access articles published within the last 10 years. The author's decision to include only open-access papers in the study is rooted in ensuring accessibility and transparency of the research process. The selection of open-access papers allows for reproducibility and verification of the study by other researchers, as these papers are freely available without paywall restrictions. Additionally, given that the study employs a bibliometric analysis using the Web of Science database, the filtering process involved applying multiple inclusion criteria, such as publication years (2015–2024) and accessibility status. This approach ensures that the analyzed dataset reflects recent and widely available research, minimizing barriers related to institutional access limitations. The reliance on open-access papers further aligns with the goal of promoting research dissemination and knowledge-sharing in an era of increasing digital transformation.

The changes in the number of selected articles after applying these filters are illustrated in the prisma diagram no. 1.

The bibliometric analysis was conducted on a selection of 721 articles, filtered using specific Web of Science criteria and analyzed with VOSviewer.

Results and discussions

An examination of the annual distribution over the past decade reveals a consistent increase in the number of published articles each year. This trend suggests that as IT tools continue to advance, their connection with the academic environment and the field of financial reporting within this domain is becoming increasingly prominent. The progression in the number of scientific articles is illustrated in Figure 2.

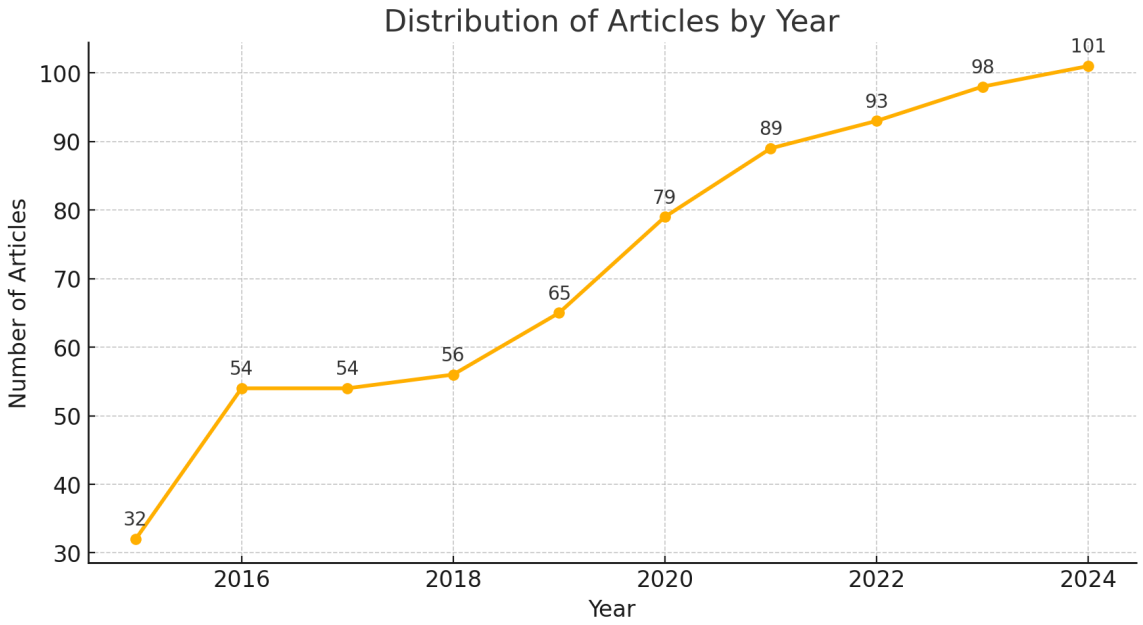

Figure 2. Distribution of articles by year

Source: Web of Science (accessed 17.01.2025).

The informations provided in this part of analyses help us to answer to the RQ1.

The trend in the number of articles published from 2015 to 2024 shows a consistent upward trajectory, indicating a steady increase in productivity or interest in publishing. Analyzing the evolutions over the years we observed:

- In the period 2015-2016 we have an initial growth was a sharp increase from 32 to 54 articles, showing a significant jump in publications.
- The period 2016-2017 shows stabilization and the number of articles remained constant at 54, suggesting a temporary plateau in growth.
- The years 2017-2019 look like a gradual increase showing a moderate rise from 54 to 65 in 2019 reflecting sustained but slower growth.
- An accelerated growth can be identified between 2019-2021 showing that the number of articles rose sharply from 65 to 89, indicating increased research output or a shift in strategy.
- In the final period of the analysis 2021-2024 we identify a steady increase, so from 2021 onwards, the growth remains steady, reaching 101 articles in 2024, suggesting a stable and mature publication rate.

Overall, the trend suggests a growing emphasis on publishing over time, with occasional fluctuations but no significant declines. If the trend continues, further increases can be expected in the coming years.

Figure 3 presents the ranking of the top 13 countries, along with Romania, based on the number of published articles during the analyzed period. An examination of the distribution by country reveals representation from all continents, indicating that our study addresses a topic of global relevance. This underscores the widespread academic interest in financial reporting and digital transformation within universities, reflecting diverse regulatory and financial contexts. The

geographical diversity of these publications highlights the universal nature of both the challenges and opportunities in digital financial reporting.

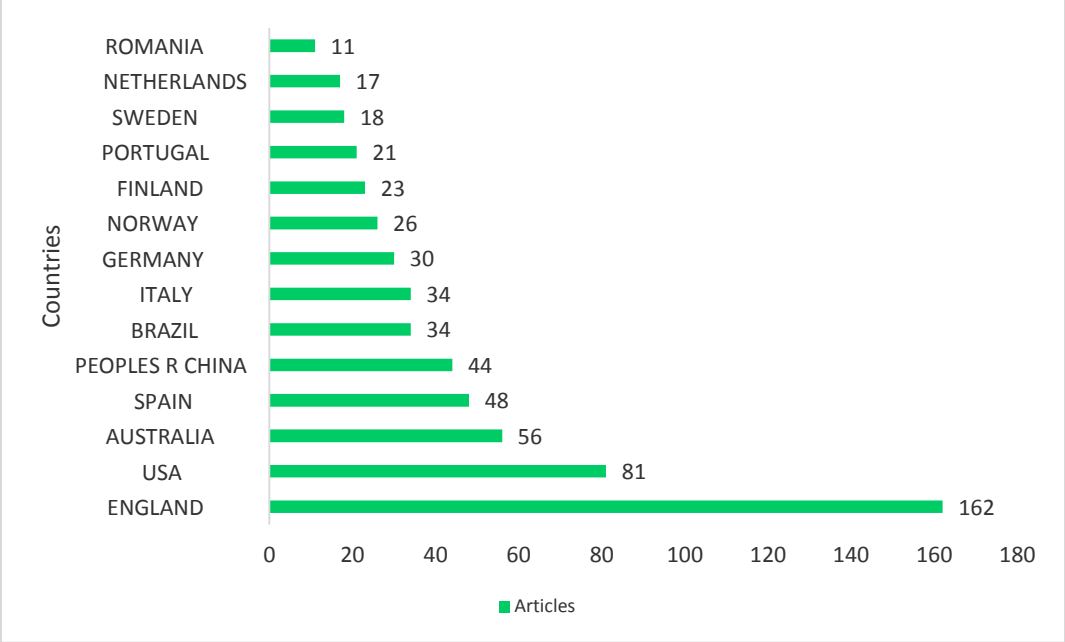

Figure 3. Distribution of articles for the top 13 states and Romania in the period 2015-2024
Source: Web of Science database (accessed 17.01.2025).

In Figure 4 we have reflected the relations between the number of published articles per country and the number of citations. For this we selected a minum number of documents of a contry at 3 and the minum number of citations for a country to 1 and the minum cluster size to 10, so we obtain 3 clusters.

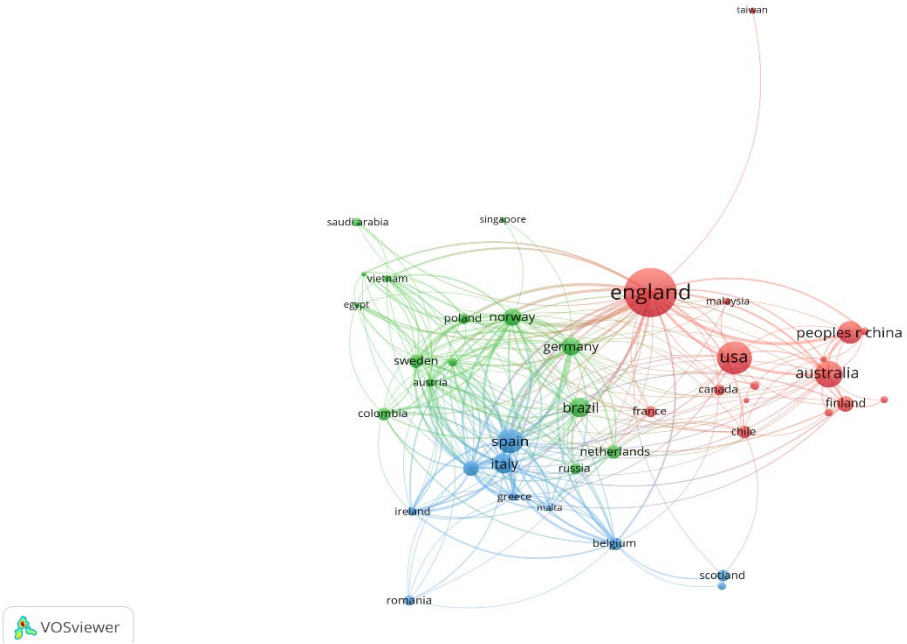

Figure 4. Analysis of citations/nmber of articles on countries in the period 2015-2024
Source: Web of Science database (accessed 17.01.2025).

Table 1 provides information in the bibliometric analysis of financial reporting in universities about the citations related to the number of articles of the first 13 countries and Romania. We present the counties that are most representative in the analysis:

- England (162 Docs, 2131 Citations) dominates in both the number of documents and citations, suggesting a strong academic focus on governance, performance, and impact within higher education. The high citation count indicates significant influence in policy and institutional research.
- USA (81 Docs, 549 Citations) contributes extensively to discussions on governance and higher education policy. Though its citation count is lower than England's, it still plays a crucial role in shaping global education policies and university governance structures.
- Australia (56 Docs, 645 Citations) shows strong engagement in education governance and policy research, with a citation count reflecting its influence in comparative and higher education studies.
- Peoples R China (44 Docs, 478 Citations) is a significant contributor, reflecting the country's growing role in global higher education governance and policymaking. The high citation count suggests China's research is gaining international recognition.
- Spain (48 Docs, 588 Citations) leads in discussions related to university governance and public sector reforms. The high citation impact suggests that research from Spanish institutions significantly contributes to shaping higher education policy.
- Italy (34 Docs, 623 Citations) is strong presence in the data highlights its focus on governance, university leadership, and public sector financial management. The high citation count suggests influential contributions to international higher education research.
- Brazil (34 Docs, 76 Citations) has a high number of documents, its citation count is lower, indicating that its research is still developing international reach. Its contributions are likely focused on widening participation and education policy within Latin America.
- Germany (30 Docs, 279 Citations) is strong role in policymaking and institutional frameworks reflects its structured approach to higher education. The citation count suggests an engaged research community that influences European and international policies.
- Norway (26 Docs, 414 Citations) has a high citation count relative to its document output, indicating that its research is highly regarded in higher education policy and participation studies.
- Finland (23 Docs, 142 Citations) is contributions are aligned with higher education governance and quality assurance discussions. The moderate citation count suggests an ongoing impact in European policy research.
- Portugal (21 Docs, 237 Citations) contributes significantly to governance and university management discussions, with a citation count that suggests growing international impact.
- Sweden (18 Docs, 277 Citations) contributes significantly to discussions on higher education policy and participation, research is well-regarded in international academic circles, despite having a moderate number of published documents.
- Netherlands (17 Docs, 236 Citations) is an important contributor to progressive education policies and higher education governance; despite having a moderate number of documents, its citations suggest strong academic influence.
- Romania (11 Docs, 104 Citations) is a moderate contributor to research on university governance and public sector accounting, its research impact is noticeable but not as extensive as other European countries. Research likely discusses higher education reforms, university autonomy, and governance structures. Higher education system in Romania may also intersect

with public sector accounting and transparency, particularly in discussions on IPSAS implementation and higher education funding.

Table 1. Analysis of citations by countries

Cluster 1 (Red)	Doc.	Citations	Cluster 2 (Green)	Doc.	Citations	Cluster 3 (Blue)	Doc.	Citations
England	162	2131	Norway	26	414	Italy	34	623
Australia	56	645	Germany	30	279	Spain	48	588
USA	81	549	Sweden	18	277	Belgium	15	293
Peoples R China	44	478	Netherlands	17	236	Portugal	21	237
Finland	23	142	Poland	13	196	Ireland	8	138
France	12	139	Austria	8	110	Romania	11	104
Canada	12	113	Switzerland	9	100	Greece	7	99
Malaysia	6	101	Singapore	4	96	Israel	7	77
Wales	7	73	Russia	12	86	Malta	3	30
Chile	16	61	Brazil	34	76			
Hungary	6	33	Colombia	15	71			
Denmark	7	26	Egypt	4	69			
Taiwan	5	22	Saudi Arabia	8	65			
Japan	5	19	Vietnam	6	35			
Mexico	9	10	Bangladesh	3	25			
Ecuador	4	1						

Source: Own conceptualization, data processing with VOSviewer (accessed on 17.01.2025).

To identify key aspects and correlations, we used VOSviewer software, applying co-occurrence filters with a minimum threshold of 10 keyword co-occurrences. The clusters generated by VOSviewer represent pairs of articles indexed only once, and our analysis resulted in the identification of four distinct clusters.

In the VOSviewer program, the co-occurrence filter was applied to all keywords, with a minimum occurrence threshold of 10. Only 49 words or phrases met this criterion. Figure 4 illustrates their distribution and the connections between them.

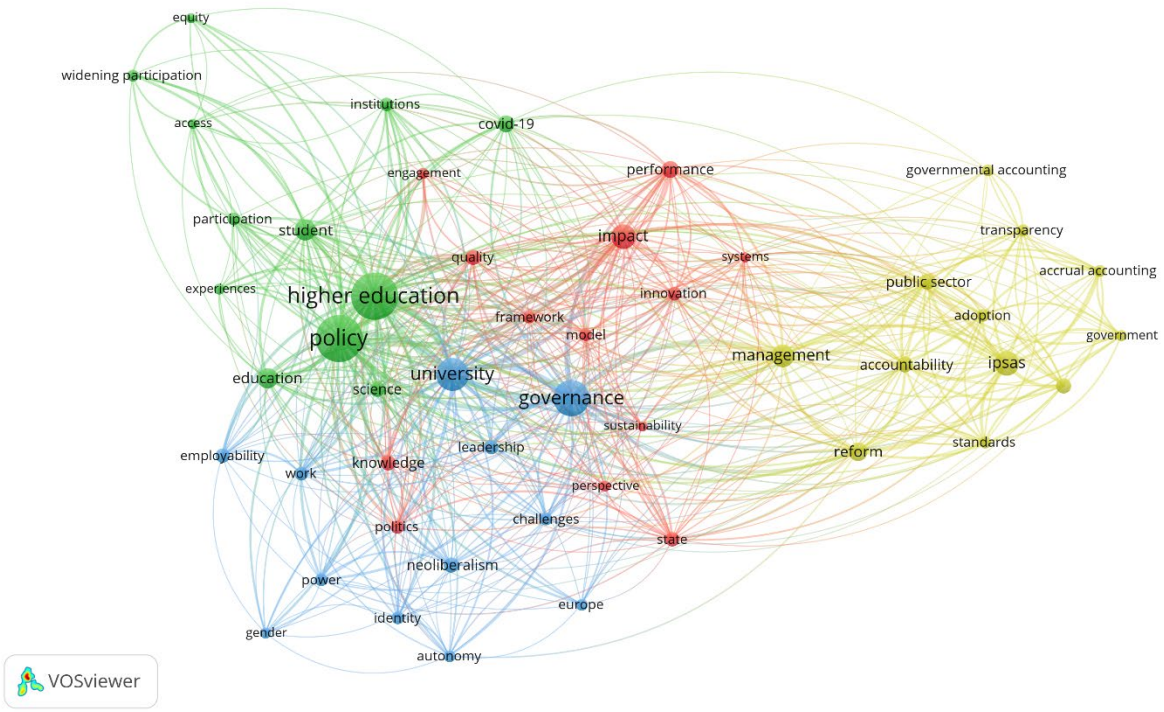

Figure 5. Phrase and word density of the 49 words that have at least 10 co-occurrences
Source: Own conceptualization using data from the Web of Science (accessed on 17.01.2025).

The answer to RQ2 is revealed by the informations in this section of the research. Table 2 provides insights into the most frequently occurring keywords in the bibliometric analysis of financial reporting in universities. We present the keywords that are most representative in the analysis:

- "Impact" (Occurrence: 56) is the most frequently occurring keyword in Cluster 1. This suggests that discussions in this cluster revolve around measuring and evaluating the effects of various factors such as policies, frameworks, and innovations on institutional and governmental performance. The high frequency indicates that "impact" is a central concept in analyzing governance, sustainability, and quality within educational and political systems.

- "Performance" (Occurrence: 28) is the second most frequent keyword in Cluster 1, indicating that discussions not only focus on the impact of governance and policy but also on how well institutions, frameworks, and systems perform. The emphasis on performance suggests a concern with efficiency, effectiveness, and measurable outcomes in governance and institutional structures.

- "Higher education" (Occurrence: 203) is the dominant keyword in Cluster 2, highlighting the extensive focus on educational institutions, particularly universities. Its strong link with "policy" (also 203 occurrences) suggests that governance, accessibility, and student participation are central themes. The high frequency also indicates that discussions in this cluster likely focus on how policy decisions shape higher education structures, student engagement, and institutional development.

- "Policy" (Occurrence: 203) is the second most dominant term in Cluster 2, appearing as frequently as "Higher education." This highlights the strong connection between higher education and policymaking, suggesting that regulatory frameworks, government decisions, and institutional policies play a crucial role in shaping the higher education landscape. The discussion in this cluster likely revolves around how policies influence access, equity, and student participation.

- "Governance" (Occurrence: 124) is the leading term in Cluster 3, emphasizing the role of leadership, autonomy, and university management. The high occurrence suggests that governance is a crucial factor in shaping higher education institutions and their response to challenges such as neoliberalism, gender issues, and employability. This reflects ongoing discussions about power structures, institutional autonomy, and the evolution of university administration in response to societal and economic demands.

Table 2. Key-words contained in specific VOSviewer clusters

Cluster 1 (Red)	**No.**	**Cluster 2 (Green)**	**No.**
engagement	12	access	10
framework	15	covid-19	26
impact	56	education	39
innovation	18	equity	10
knowledge	22	experiences	11
model	15	higher education	203
performance	28	institutions	18
perspective	11	participation	15
politics	17	policy	203
quality	21	science	22
state	19	student	43
sustainability	10	widening participation	14
systems	10		
Cluster 3 (Blue)	**No.**	**Cluster 4 (Yellow)**	**No.**
autonomy	13	accountability	25
challenges	16	accrual accounting	14
employability	20	adoption	16
Europe	13	government	12
gender	12	governmental accounting	14
governance	124	ipsas	55
identity	15	management	50
leadership	20	public accounting	23
neoliberalism	22	public sector	24
power	15	reform	33
university	100	standards	14
work	18	transparency	13

Source: Own conceptualization, data processing with VOSviewer (accessed on 17.01.2025).

- "University" (Occurrence: 100) is the second key term in Cluster 3, emphasizing the centrality of universities in governance and leadership discussions. The frequency suggests a focus on how universities navigate challenges such as neoliberalism, employability, and governance reforms. This term reinforces the idea that universities are active players in shaping and responding to policy and economic changes.

- “IPSAS” (Occurrence: 55) is the most prominent term in Cluster 4, signifying the importance of International Public Sector Accounting Standards in discussions related to financial management and transparency. Its strong presence suggests that reforms in public sector financial accountability, including accrual accounting and governmental accounting policies, are major topics. The emphasis on IPSAS highlights the role of standardized financial reporting in ensuring accountability and efficiency in public sector governance.

- “Management” (Occurrence: 50) is the second most frequent term in Cluster 4, indicating that discussions around financial and public sector reforms are closely tied to management practices. This suggests that public sector institutions focus heavily on improving financial oversight, accountability, and administrative efficiency, particularly in the context of IPSAS implementation and governmental accounting.

For generating Figure 6 in the VOSviewer program, we selected a maximum number of authors per document 25, the minum number of documents and citations of an author , the minum number of cluster size 5 and we obtain a number of 5 clusters with 34 items.

This analysis examines the co-authorship network of researchers based on bibliometric data extracted from the Web of Science database. Using VOSviewer, the visualization reveals patterns of collaboration, key contributors, and research clusters.

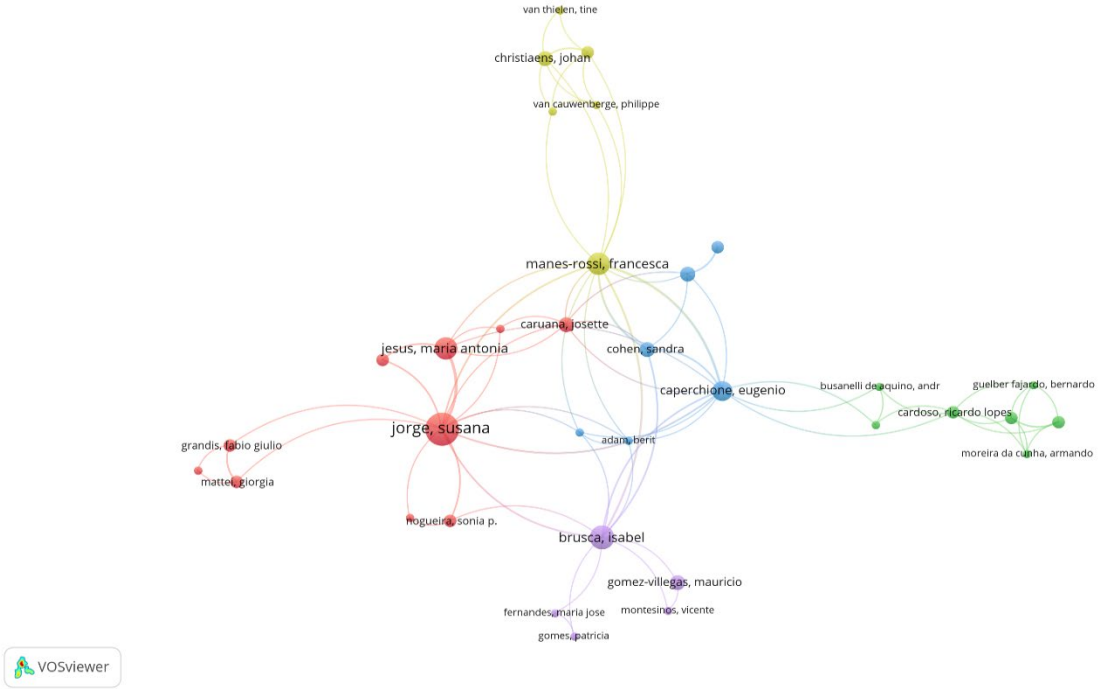

Figure 6. The analysis of Co-autorship by authors of the articles

Source: Own conceptualization, data processing with VOSviewer (accessed on 17.01.2025).

The co-authorship network visualization highlights multiple clusters representing distinct research groups. Each node represents an author, with node size indicating the frequency of collaboration and link thickness representing the strength of co-authorship ties.

This analysis of academic research clusters highlights the contributions of leading scholars and the impact of their work on governance, policy-making, and financial management in higher education. The influence of these researchers extends across multiple domains, shaping

institutional frameworks and informing global best practices in financial oversight and higher education governance.

Table 3 reveals that the co-authorship analysis provides valuable insights into collaboration patterns within public sector accounting, governance, and higher education financial management. Jorge, Susana, Manes-Rossi, Francesca and Caperchione, Eugenio emerges as key figures in the network, with several well-defined research clusters contributing to various aspects of the field. The findings highlight the importance of fostering cross-cluster collaborations to enhance the diversity and impact of academic research.

Table 3. Relations of Co-autorship by authors contained in specific VOSviewer clusters

Cluster 1 (Red)	**DOC.**	**CITATIONS**
Biondi, Lucia	1	9
Caruana, Josette	3	30
Dabbicco, Giovana	1	26
Grandis, Fabio Giulio	2	23
Jesus, Maria Antonia	6	81
Jorge, Susana	12	162
Laureano, Raul	2	21
Mattei, Giorgia	2	23
Nogueira, Sonia P.	2	30
Ribeiro, Nuno	1	13
Cluster 2 (Green)	**DOC.**	**CITATIONS**
Busanelli de Aquino, And	1	3
Cardoso, Ricardo Lopes	2	11
de Azevedo, Ricardo Roc	2	13
Guleber Fajardo, Bernardo de Abreu	1	8
Magarini Pigatto, Jose Alexandre	2	13
Moreira da Cunha, Armando Santos	1	8
Steccolini, Ileana	1	3
Cluster 3 (Blue)	**DOC.**	**CITATIONS**
Adam, Berit	1	22
Bisogno, Marco	3	40
Capercchione, Eugenio	5	111
Cohen, Sandra	3	85
Cuadrado-Ballesteros, B.	2	37
Heiling, Jens	1	22
Cluster 4 (Yellow)	**DOC.**	**CITATIONS**
Aversano, Natalia	2	132
Christiansen, Johan	3	144
Manes-Rossi, Francesca	6	233
Cluster 4 (Yellow)	**DOC.**	**CITATIONS**
Van Cauwenberghe, Philippe	1	121
Van Thielen, Tine	1	11
Vanhee, Christophe	1	121

Cluster 5 (Purple)	DOC.	CITATIONS
Brusca, Isabel	7	174
Fernandes, Maria Jose	1	9
Gomes, Patricia	1	9
Gomez-Villegas, Mauricio	3	57
Montesinos, Vicente	1	41

Source: Own conceptualization, data processing with VOSviewer (accessed on 17.01.2025).

Collaboration in academic research is essential for advancing knowledge and fostering interdisciplinary approaches. This study examines the co-authorship network within the field of public sector accounting, governance, and higher education finance, using bibliometric analysis from the Web of Science database. The VOSviewer tool was applied to map key authors, collaboration clusters, and research interconnectivity. Our findings reveal five distinct clusters, with Jorge, Susana, Manes-Rossi, Francesca and Caperchione, Eugenio emerging as central figures in facilitating intergroup collaboration. The results highlight strong regional research networks, opportunities for interdisciplinary collaboration, and the potential for further integration of isolated research teams. These insights contribute to understanding collaboration patterns and shaping future research strategies in public sector financial management (answer to RQ3).

The information from this section offers the answer for RQ3. This analysis offers valuable insights for policymakers, university administrators, and researchers looking to optimize financial reporting in higher education.

The analysis reveals dominant research themes:

- Policy frameworks and governance models play a crucial role in shaping financial reporting structures in universities. The transition towards business-oriented models, driven by digital transformation and accountability standards, indicates a shift in how Higher education institutions manage financial resources.
- The integration of International Public Sector Accounting Standards (IPSAS) and other global financial reporting frameworks demonstrates the necessity for standardized and transparent financial reporting practices. Compliance with these standards enhances financial accountability and institutional credibility.
- Universities are not only academic entities, but also financial institutions influenced by international economic policies, competition, and sustainability concerns. The research highlights the growing interconnection between Higher education institutions and global financial governance.
- The role of artificial intelligence, blockchain technology and big data analytics is becoming increasingly prominent in enhancing financial reporting accuracy, security, and efficiency. These innovations facilitate predictive financial analysis, risk assessment, and decision-making.
- The increasing demand for performance-based financial management aligns with the broader goals of academic excellence and institutional accountability. The adoption of digital financial management tools allows universities to optimize budget allocations, improve operational efficiency, and enhance student outcomes.

This manuscript provides several key contributions to the academic and practical understanding of financial reporting in universities, particularly in the context of digital transformation. The main points of the study include:

1. The study systematically examines 721 open-access publications from the Web of Science database, providing a broad and data-driven overview of financial reporting trends in higher education institutions (Higher education institutions). The use of bibliometric techniques such as co-occurrence analysis, keyword mapping, and clustering enhances the study's analytical depth.
2. By analyzing citation patterns and thematic clusters, the research highlights emerging areas of interest such as:
   - The impact of digital transformation on financial reporting.
   - The role of artificial intelligence, blockchain and big data played for financial transparency.
   - The significance of IPSAS and other international accounting standards in higher education institution financial governance.
3. The study connects financial reporting practices with higher education policy and governance, showing how universities must align financial transparency with institutional efficiency and accountability. These insights are valuable for policymakers aiming to enhance regulatory frameworks in university financial management.
4. This bibliometric analysis covers research from multiple countries, emphasizing that financial reporting challenges and digital transformation efforts are global phenomena. This international scope allows for comparative analysis and benchmarking across different regulatory and technological landscapes.

Conclusion

The analysis reveals that financial reporting in universities is a rapidly evolving field, heavily influenced by policy frameworks, governance structures, digital transformation, and accountability mechanisms. The prominence of keywords like "higher education policy", "IPSAS", and "performance" suggest that regulatory compliance, financial transparency, and efficiency improvements remain at the core of discussions. Furthermore, the emerging focus on student outcomes and institutional reforms indicates a shift towards performance-driven financial management in higher education institutions.

This analysis serves as a roadmap for future research by identifying critical intersections between financial management, governance, and digital transformation in university settings.

The bibliometric analysis of financial reporting in higher education institutions highlights the profound impact of digital transformation on financial management and governance structures. The study's findings underscore the increasing emphasis on financial transparency, regulatory compliance, and the role of digital technologies in improving efficiency, decision-making, and institutional performance.

The paper presents a comprehensive bibliometric analysis that highlights the increasing role of digital technologies in university financial reporting. The research confirms that:

- Financial transparency and governance are central themes in higher education institution financial management.
- Technological advancements are rapidly transforming financial decision-making and reporting structures.
- Standardization and regulatory compliance remain key challenges, requiring further research to establish the best global practices.

Overall, this study contributes to existing literature by providing an in-depth bibliometric analysis of financial reporting in higher education institutions. The results serve as a foundation for future research, highlighting key areas for further investigation, such as the ethical implications of artificial intelligence in financial reporting, the effectiveness of digital financial governance, and the impact of policy reforms on university financial sustainability.

As universities continue to evolve within the digital and technological landscape, financial reporting will remain a critical aspect of institutional governance. Future research should focus on bridging the gap between emerging digital financial tools and practical implementation strategies to ensure a more transparent, accountable, and efficient financial reporting system in higher education.

This manuscript provides a strong analytical foundation for understanding financial reporting trends in higher education institutions, particularly in the digital era. By offering thematic insights, policy implications, and future research directions, the study is a valuable resource for researchers, policymakers, and university administrators looking to optimize financial governance and reporting frameworks in higher education institutions.

To accurately interpret the results, discussions, and conclusions of a bibliometric analysis, it is essential for authors to acknowledge the potential limitations of the research. In this study, data was exclusively sourced from the Web of Science platform, and querying additional databases could reveal further insights. The authors selected this database as they deemed it representative of the research conducted. Bibliometric methods are effective in identifying research trends, keyword associations, and citation networks, but they do not assess the qualitative aspects of financial reporting practices in universities. The findings should be supplemented with qualitative case studies or empirical research for deeper insights. The study focused on publications from 2015 to 2024, which provides an overview of recent research but may exclude foundational studies published before this period. Some key historical developments in financial reporting and digital transformation may not be reflected in the dataset. The study identifies global trends in university financial reporting, but its findings may not fully apply to specific national or institutional contexts due to differences in governance models, regulatory environments, and technological adoption rates. The intersection of financial reporting and digital transformation is an evolving field. Emerging technologies such as blockchain, artificial intelligence, and real-time financial analytics continue to develop, meaning that some conclusions may become outdated as new innovations and regulatory frameworks emerge.

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