

Internal Control in Financial Management: A Bibliometric Analysis Based on Web of Science Database

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Received: 23 February 2026 | Accepted: 15 March 2026 | Published: 1 May 2026

DOI: <https://doi.org/10.55057/ijaref.2026.8.1.32>

Abstract: *This study aims to examine the development, structure, and thematic orientation of internal control research within the financial management domain. This study using bibliometric techniques, publications indexed in the Web of Science Core Collection from 2017 to 2025 were analysed. The study applies performance analysis and science-mapping methods using VOS viewer to evaluate publication trends, influential authors and journals, collaborative patterns, and keyword relationships. The findings reveal a steady increase in scholarly output, indicating sustained academic interest in internal control issues. Co-citation analyses demonstrate that the literature is grounded in established accounting and finance research, while network visualizations show growing interdisciplinary linkages with management, sustainability, and technology-related studies. Keyword analysis further suggests a gradual shift from traditional control-oriented perspectives toward broader discussions on governance effectiveness, financial performance, and digitalization. This research aims to makes a theoretical contribution by using the bibliometric analysis to reveal the trend for “internal control and financial management, on focusing how has evolved from traditional accounting-based control mechanisms toward a broader, interdisciplinary framework that integrates governance, sustainability, and performance perspectives. This study highlights the importance of strengthening internal control systems and governance practices to support transparency and accountability in financial management. The findings provide practical guidance for practitioners by showing how effective internal controls can reduce operational risk and improve decision-making. From a policy perspective, the results also point to the value of cross-country learning and policy adaptation in response to global disruptions, such as economic uncertainty and systemic shocks, to enhance financial oversight and control effectiveness.*

Keywords: Internal Control, Financial Management, Bibliometric Analysis, Web of Science

1. Introduction

Internal control and financial management have become increasingly critical as organizations face greater financial complexity, heightened accountability requirements, and growing expectations from stakeholders. Effective internal control systems can support organizations in safeguarding assets, ensuring reliable financial information, and promoting operational efficiency, particularly in environments characterized by limited resources and strong reliance on public trust (Ndanyi, 2021; Chawla et al., 2023). Recent studies indicate that financial management practices are essential for sustaining organizational performance and aligning

financial decisions with institutional objectives (Suarni et al., 2023; Setiawan, 2024). Furthermore, regarding the transparency and accountability, where have been highlighted as key outcomes of effective financial control, helping organizations minimize the inefficiencies, reduce misuse of resources, and strengthen stakeholder confidence (Istan, 2022; Putri et al., 2024). After that, from a governance perspective, internal control systems also function as structured arrangements of rules, procedures, and monitoring mechanisms that guide managerial behavior and ensure compliance with applicable regulations (Islamiyah et al., 2020; Umar et al., 2024).

Alongside these practical developments, academic research on internal control within financial management has been expanded rapidly across multiple disciplines, including accounting, management, sustainability, and information systems. While this growth reflects the increasing relevance of internal control in diverse organizational contexts, it has also led to a fragmented body of literature, with studies addressing varied themes and perspectives (Ahmar et al., 2024). As a result, there remains a need for a systematic synthesis that maps the intellectual structure, influential contributions, and evolving research themes within the field. Bibliometric analysis offers a rigorous approach for addressing this gap by enabling large-scale evaluation of publication trends, citation relationships, and collaboration patterns. By applying bibliometric techniques to the existing literature, this study aims to provide a comprehensive overview of research on internal control and financial management between 2017 and 2025, thereby supporting a clearer understanding of the field's development and informing future scholarly inquiry.

2. Literature Review

2.1. Financial Management

Grozdanovska et al. (2017) defined financial management as means planning, organizing, directing and controlling of financial activities, such as procurement and usage of organization's assets. Financial management also is the operational activity of a business that is responsible for obtaining and effectively utilizing the funds necessary for efficient operations (Umar et al., 2024). Furthermore, according to Harahap et al. (2020), it should be noted that financial management does not only talk about accounting records. However, it is a very important program management and should not be seen as a separate activity that is part of a finance person's job. However, War & Barlis (2023) have said that if only one person handles all financial elements, they will be more able to prevent the wrongdoings in the financial.

2.2. Internal Control

Strong internal controls are fundamental to maintaining trust, ensuring sustainability, and safeguarding their vital role in the community. The COSO framework provides a practical and comprehensive model specifically suited to address the unique challenges faced by these religious institutions (Asare et al., 2013; Farah et al., 2024; Schneider & Garrett, 2009). Its five interconnected elements control environment, risk assessment, control activities, information and communication, and monitoring work together to promote ethical leadership, operational integrity, and effective risk management (Savitri et al., 2020; Setiawan, 2024). Central to this is proactive risk assessment identifying potential threats like fraud, theft, or financial misreporting before they cause harm (Chawla et al., 2023). Given mosques operate in dynamic environments facing evolving issues like donation misuse or changing regulations, their internal controls must be inherently flexible and adaptable (Oyetunji & Lawal, 2021).

The COSO framework supports this by aligning financial decisions with both ethical principles and operational needs, transforming controls from simple compliance tasks into tools that actively build transparent and trusted institutions (Adegboyegun et al., 2020; Ayedh et al., 2021; Masanja & Masimba, 2020). Ultimately, these integrated components reduce risk, improve financial reporting, and foster a strong culture of responsibility among mosque leaders and community members, strengthening overall governance (Asare et al., 2013; Farah et al., 2024; Schneider & Garrett, 2009). Importantly, implementing this framework well means funds are managed efficiently and openly, protecting the mosque's assets and building the essential trust needed for long-term viability (Islamiyah et al., 2020; Zuhra & Maresti, 2024). This perspective aligns with the Turnbull Report's view of internal control as essential for managing risk, protecting assets, and ensuring accountability, recognizing that systems must evolve and are never perfect (Turnbull, 1999; Oyetunji & Lawal, 2021).

2.3. The Role of Education and Training in Strengthening Internal Control

An often underexplored but crucial element of internal control and fraud prevention is human capital development. Training programs for public sector employees significantly improve awareness of ethical standards, fraud risks, and reporting protocols. Such initiatives equip personnel with knowledge about various types of fraud and the procedures to follow when encountering unethical behavior (Luna et al., 2024, p. 1; Rahman & Zhu, 2024; Zhao et al., 2023)

Beyond formal training, a culture of integrity should be cultivated through continuous professional development and leadership commitment. Equally important is the protection of whistleblowers and the availability of secure complaint systems, which encourage the reporting of suspicious activities without fear of retaliation (J. Spink et al., 2016, p. 68). Civil society, media, and NGOs also play a watchdog role in monitoring government spending and ensuring accountability (Zhao et al., 2023). Therefore, fraud prevention in the public sector is not solely a matter of systems and procedures but also of education, awareness, and collaboration across various stakeholders, including state institutions, employees, and the general public (Thomas & Indriaty, 2023).

3. Method

3.1. Material Summary Searching

Table 1: Summary Searching Details

Source website	Web of Science Core Collection
Years	2017-2025
Searching Terms	Internal Control Financial
Inclusion	Article (443), Early Access (14)
Exclusion	Review (26), Retracted Publication (7), Meeting Abstract (3), Correction (2), Editorial Material (2), Meeting (2), Proceeding Paper (2)
Sample Size	434
Reference Size	478
Web of Science Index	Science Citation Index Expanded (434), Social Science Citation Index (180), Arts & Humanities Citation Index (2)

Table 1 have shown the bibliometric data from the Web of Science (WoS) Core Collection, which is widely regarded as a highly reliable and authoritative source due to its rigorous journal selection process, standardized citation structure, and high-quality metadata (Mongeon & Paul-Hus, 2016; Birckle et al., 2020). WoS was selected as the sole database to ensure data

consistency and analytical validity, as prior studies have shown that it offers superior accuracy and control over bibliographic records compared to other indexing platforms (Cavacini, 2015; Pranikutė, 2021). The search was conducted in November 2025 using the keywords “internal control” and “financial,” covering publications from 2017 to 2025. After applying strict inclusion and exclusion criteria to retain only peer-reviewed original research, a total of 434 publications were included for analysis. These records span multiple citation indices primarily SCI-Expanded and SSCI highlighting the interdisciplinary nature of internal control research across accounting, management, and finance. Overall, the use of WoS provides a robust and credible foundation for bibliometric mapping and network analysis using tools such as VOS viewer, ensuring that the findings reflect meaningful and contemporary research patterns within the field.

4. Analysis and Findings

4.1. Research Outputs and Categories

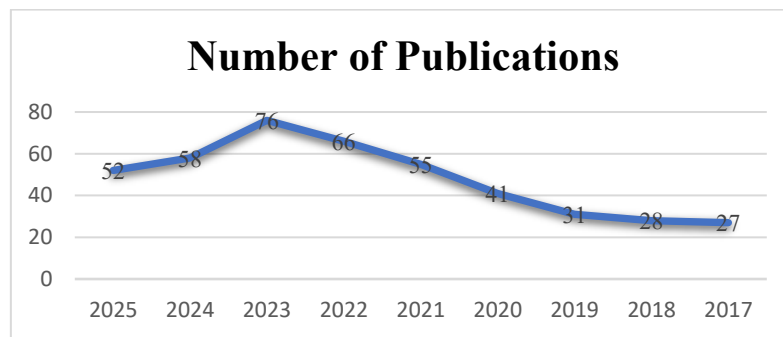


Figure 1: Number of publications from 2017-2025
Sources: Web of Science Database

Figure 1 illustrates the annual volume of Web of Science indexed publications on internal control and financial management from 2017 to 2025, revealing a clear evolutionary pattern in the literature. Publication output remained relatively moderate between 2017 and 2019, reflecting an early phase in which scholars focused on strengthening theoretical foundations and refining empirical approaches grounded in agency theory, earnings quality, and internal control design (Jensen & Meckling, 1976; Dechow et al., 1995). After that, the increasing use of data-driven and continuous auditing techniques (Vasarhelyi et al., 2015), and broader adoption of mixed and context-sensitive research designs. In the most recent period (late 2023–early 2025), publication growth moderates slightly, a trend that is best interpreted as consolidation rather than decline, as researchers move toward more nuanced investigations that refine measurement, address contextual boundaries, and deepen theoretical integration. Such cyclical patterns of expansion followed by consolidation are well documented in bibliometric research and are characteristic of maturing fields (Van Eck & Waltman, 2010; Mongeon & Paul-Hus, 2016).

4.2. Main Discipline and Number of Publications

The disciplinary distribution in Table 2 demonstrates that research on internal control and financial management is highly interdisciplinary. The largest concentration appears under Science and Technology Other Topics (124), indicating that internal control is increasingly examined within broader technological and systems-based contexts. This is followed by Environmental Sciences and Ecology (114), reflecting growing attention to sustainability, environmental accountability, and responsible resource use. Contributions from Engineering

(50) and Computer Science (38) further highlight the integration of internal control concepts into automation, information systems, and data governance. Although Business and Economics (27) and Operations Research and Management Science (26) account for a smaller share of publications, they remain central in providing theoretical and analytical foundations for control-related decision-making. The presence of studies in Energy and Fuels, Telecommunications, and Agriculture suggests that internal control research is increasingly applied across diverse sectoral settings. Overall, the distribution indicates a mature research field that extends beyond traditional accounting boundaries and engages with complex, technology-driven, and sustainability-oriented financial environments.

Table 2: Main Discipline

Rank	Main Discipline/Area	Number Of Publication
1	Science Technology Other Topics	124
2	Environmental Sciences Ecology	114
3	Engineering	50
4	Computer Science	38
5	Public Environmental Occupational Health	34
6	Business Economics	27
7	Operations Research Management Science	26
8	Energy Fuels	19
9	Telecommunications	17
10	Agriculture	16

As shown in Table 3, research on internal control and financial management between 2017 and 2025 is shaped by several key contributors. The most productive authors Balamurugan Vinayagamurthy, Govindaraj Gurrappa Naidu, and Roy Parimal each produced three publications in 2021, reflecting a shared focus on technological and risk management innovations in financial systems (Vasarhelyi, Alles, & Kogan, 2015). In contrast, Gan Quanxin demonstrated the highest citation impact with 107 citations from two papers published in 2020. Emerging contributors such as Akinbowale Oluwatoyin Esther and Ali Dag have added recent perspectives on accountability and governance within developing contexts (Alleyne & Marshall, 2011). Researchers are increasingly connecting internal control effectiveness with broader themes such as governance quality, corporate responsibility, and sustainability outcomes, signaling a shift toward a more integrated and multidimensional understanding of financial management systems (Su et al., 2022; Zhang & Su, 2023).

Table 3: Most Cited Authors

Rank	Author	No of Articles	Citation	Link Strength	Year Publications
1	Balamurugan, Vinayagamurthy	3	21	8	2021
2	Govindaraj, Gurrappa Naidu	3	21	8	2021
3	Roy, Parimal	3	21	8	2021
4	Akinbowale, Oluwatoyin Esther	2	13	0	2023
5	Chen, Chien-Ming	2	5	0	2019
6	Chen, Ruey-Shun	2	5	0	2019
7	Chen, Yeh-Cheng	2	5	0	2019
8	Dag, Ali	2	23	0	2023
9	Fan, Min	2	21	1	2023
10	Gan, Quanxin	2	107	7	2020

After that, table 4 highlights the most influential journals publishing research on internal control and financial management between 2017 and 2025. Sustainability ranks highest by document count which is 57.

Table 4: Rank of Prominent Journal

Journal	Document	Rank	Journal	Citation	Rank
Sustainability	57	1	Journal of Cleaner Production	571	1
PLOS One	27	2	Sustainability	560	2
Heliyon	12	3	Management Science	146	3
Management Science	11	4	International Journal of Environmental Research and Public Health	145	4
Journal of Cleaner Production	9	5	PLOS One	136	5
Energies	8	6	Frontiers in Environmental Science	109	6
Environment Development and Sustainability	7	7	Heliyon	96	7
IEEE Access	7	8	Environmental Science and Pollution Research	67	8
International Journal of Environmental Research and Public Health	7	9	IEEE Access	55	9
Environmental Science and Pollution Research	6	10	Environment Development and Sustainability	54	10

However, in terms of citation impact, the Journal of Cleaner Production leads with 571 citations. Other active journals such as PLOS ONE, Heliyon, and Management Science also contribute significantly, reflecting a balanced mix of empirical and methodological studies across scientific and managerial domains (Podsakoff et al., 2016). The presence of journals like Environmental Science and Pollution Research and IEEE Access further shows the field's diversification, with researchers increasingly applying technological, ecological, and analytical perspectives to strengthen internal control and financial sustainability.

Meanwhile, table 5 identifies the most active and influential authors contributing to the literature on internal control and financial management from 2017 to 2025.

Table 5: Prominent Authors by Documents and Citations

Author	No of Publications	Rank	Author	Citation	Rank
Balamurugan, Vinayagamurthy	3	1	Wu, Yu	293	1
Govindaraj, Gurrappa Naidu	3	2	Gan, Quanxin	107	2
Roy, Parimal	3	3	Qin, Han	107	3
Akinbowale, Oluwatoyin Esther	2	4	Su, Jiafu	107	4
Chen, Chien-Ming	2	5	Yang, Liu	107	5
Chen, Ruey-Shun	2	6	Li, Yue	69	6
Chen, Yeh-Cheng	2	7	Zhang, Qi	54	7
Dag, Ali	2	8	Xu, Wei	33	8
Fan, Min	2	9	Javeed, Sohail Ahmad	30	9
Gan, Quanxin	2	10	Latief, Rashid	30	10

By publication count, Balamurugan Vinayagamurthy, Govindaraj Gurrappa Naidu, and Parimal Roy each produced three papers, highlighting their consistent engagement with performance evaluation and governance frameworks in emerging economies. In contrast,

citation impact is dominated by Wu Yu, with 293 citations, followed by Gan Quanxin, Qin Han, and Su Jiafu, each receiving over 100 citations. Their high citation counts reflect growing academic interest in digital transformation, risk control, and sustainability-linked governance in financial systems (Wu et al., 2020; Yang et al., 2020). Overall, the author distribution demonstrates a blend of established and emerging scholars shaping interdisciplinary discourse around internal control and financial resilience in diverse organizational contexts.

4.3. The Analysis of Collaboration Network of Internal Control Financial

4.3.1. Prominent Author

Table 6 and Figure 2 highlight the leading authors and their collaborative structures in internal control and financial management research between 2017 and 2025, based on data from the Web of Science Core Collection. The most prolific scholars Balamurugan Vinayagamurthy, Govindaraj Gurrappa Naidu, and Parimal Roy each published three papers and shared a strong network linkage, reflecting consistent collaboration on organizational governance and internal control performance. Another active cluster, led by Gan Quanxin, Qin Han, and Su Jiafu, shows high citation impact exceeding 100 each, focusing on sustainability-driven financial performance and green innovation (Yang et al., 2020). Emerging networks such as Akinbowale Oluwatoyin Esther and Fan Min are contributing to digital transformation and financial accountability in developing economies (Akinbowale et al., 2023). Overall, the co-authorship visualization demonstrates a clear trend toward interdisciplinary collaboration, bridging sustainability, digitalization, and internal control governance across diverse research contexts.

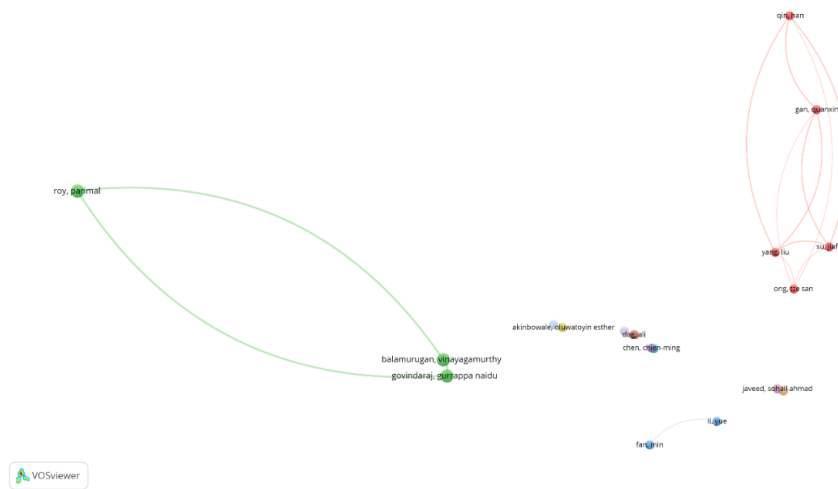


Figure 2: Network Visualization of Prominent Authors
Source (s): Web of Science Database

Table 6: Prominent Authors

Rank	Author	Document	Citation	Total Link Strength
1	Balamurugan, Vinayagamurthy	3	21	8
2	Govindaraj, Gurrappa Naidu	3	21	8
3	Roy, Parimal	3	21	8
4	Gan, Quanxin	2	107	7
5	Qin, Han	2	107	7
6	Su, Jiafu	2	107	7
7	Yang, Liu	2	107	7
8	Ong, Tze San	2	28	4
9	Li, Yue	2	69	1

4.3.2. Prominent Journal

Table 7 and Figure 3 present the institutional landscape and collaboration network of research on internal control and financial management, derived from the Web of Science database. The most productive and influential universities include Xiamen University, Chongqing Technology and Business University, and Renmin University of China, which exhibit strong interlinkages and high citation impact. Institutions such as Zhejiang Gongshang University and Sichuan University form secondary collaboration clusters. Meanwhile, Universiti Putra Malaysia and Yonsei University emerge as active international contributors, reflecting increasing cross-border collaboration in accountability and control research. The visualization underscores the dominance of Chinese universities in this research domain, while also highlighting growing global participation and network diversification in internal control scholarship.

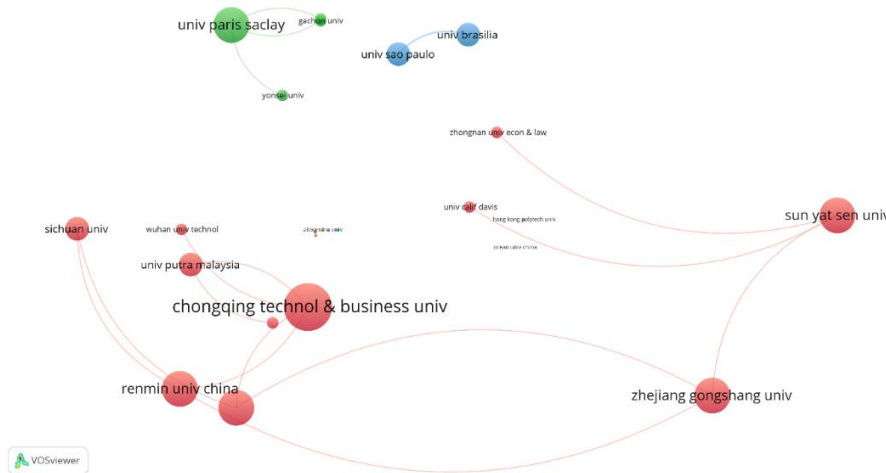


Figure 3: Network Visualization of Prominent Journals
Source (s): Web of Science Database

Table 7: Prominent Journal

Rank	Journal	Document	Citation	Total Link Strength
1	Xiamen Univ	4	123	4
2	Chongqing Technol & Business Univ	6	51	3
3	Renmin Univ China	6	240	3
4	Zhejiang Gongshang Univ	4	23	3
5	Sichuan Univ	4	103	3
6	Yonsei Univ	3	30	3
7	Sun Yat Sen Univ	5	61	2
8	Univ Putra Malaysia	4	68	2
9	Capital Univ Econ & Business	3	19	2
10	Dongguan Polytech	3	10	2

international collaboration, especially with Thailand, South Korea, and Malaysia. South Korea and the United States also play significant roles, forming cross-continental research ties for the paper of internal control financial. Meanwhile, countries such as Australia, India, and Brazil show growing engagement, signaling an expanding global interest in internal control financial. The visualization underscores China’s centrality in this domain, serving as a major hub linking both Asian and Western research networks.

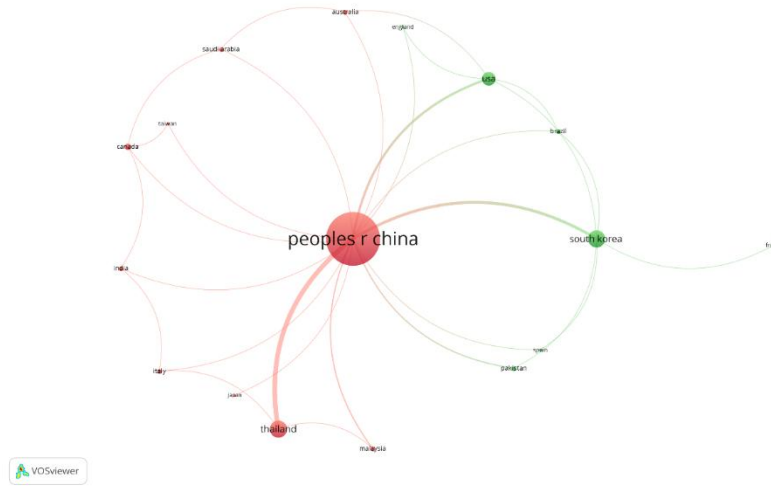


Figure 4: Network visualization of prominent countries
Source (s): Web of Science database

Table 9: Prominent Countries

Rank	Country	Number of Publication	Total Link Strength
1	Peoples R China	188	31
2	South Korea	16	10
3	Thailand	5	10
4	USA	73	8
5	Canada	12	4
6	Australia	19	3
7	Brazil	19	3
8	India	15	3
9	Italy	15	3
10	Malaysia	11	3

4.4. The Co-Citation Network of Internal Control Financial

4.4.1. Author Co-Citation Network

Figure 5 and Table 10 illustrate the co-citation patterns among the most influential authors in internal control and financial management research. Michael C. Jensen leads the network (38 co-citations, TLS = 105), reflecting his foundational contribution to agency theory and corporate governance (Jensen & Meckling, 1976). Other prominent scholars include Patricia M. Dechow and Eugene F. Fama, whose works on earnings management and market efficiency continue to underpin governance and control frameworks (Dechow et al., 2010; Fama & French, 2004). Authors such as Wang Y., Liu Y., and Zhang Y. represent the growing influence of Chinese scholarship integrating digitalization and sustainability themes into internal control studies. The dense linkages across clusters indicate strong interdisciplinary collaboration, bridging traditional accounting, corporate governance, and emerging sustainability research. This pattern highlights the theoretical diversity shaping internal control research globally.

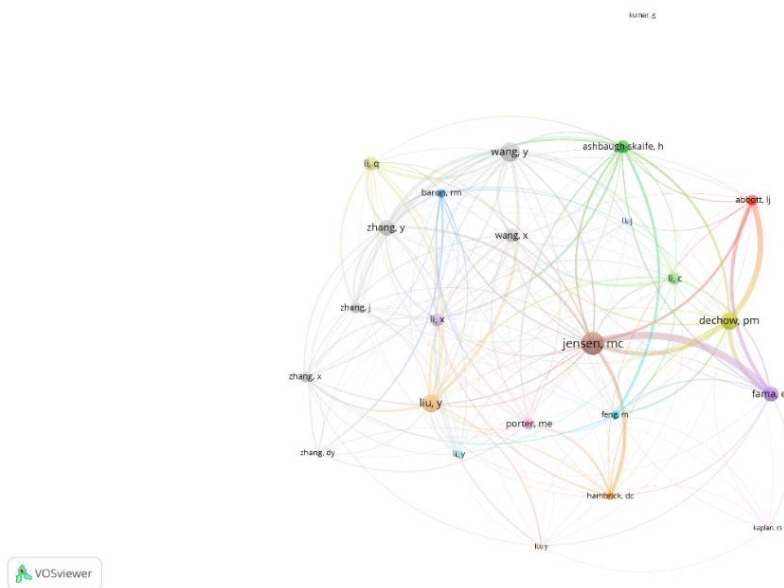


Figure 5: Network visualization of prominent authors with co-citation
Source (s): Web of Science database

Table 10: The most cited authors with co-citation frequency

Rank	Author	Co-Citation	Total Link Strength
1	Jensen, MC	38	105
2	Wang, Y	30	89
3	Liu, Y	25	82
4	Dechow, PM	27	79
5	Zhang, Y	21	72
6	Fama, EF	24	69
7	Wang, X	17	64
8	Li, Q	16	62
9	Li, X	20	61
10	Ashbaugh-Skaife, H	24	60
11	Li, C	16	57
12	Porter, ME	23	55
13	Abbott, LJ	19	50
14	Zhang, J	16	50
15	Zhang, X	18	47
16	Baron, RM	16	42
17	Feng, M	16	38
18	Hambrick, DC	16	38
19	Li, Y	16	37
20	Zhang, DY	17	27

4.4.2. Journal Co-Citation Network

Figure 6 and Table 11 present the co-citation relationships among leading journals in internal control and financial management research. The Accounting Review (328 co-citations, TLS = 10,318) and the Journal of Financial Economics (269 co-citations, TLS = 8,704) emerged as the most influential sources, indicating their central role in shaping theoretical and methodological foundations (DeFond & Zhang, 2014). The strong linkages between finance, accounting, and sustainability journals suggest a multidisciplinary convergence where

corporate governance, financial integrity, and environmental accountability intersect. This network structure demonstrates that current research increasingly draws on both economic and ethical perspectives to strengthen internal control and sustainability frameworks.

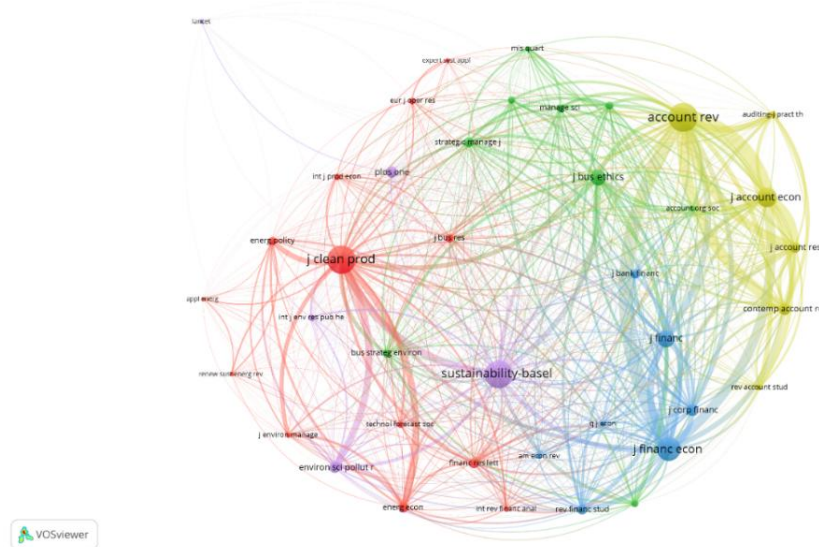


Figure 6: Network Visualization of the Most Cited Journal with Co-Citation Frequency Source (s): Web of Science Database

Table 11: The Most Cited Journal with Co-Citation Frequency

Rank	Journal	Co-Citation	Total Link Strength
1	Account Rev	328	10318
2	J Financ Econ	269	8704
3	J Clean Prod	326	7660
4	J Account Econ	225	7629
5	Sustainability-Basel	319	6230
6	J Financ	196	5415
7	J Bus Ethics	184	5146
8	Contemp Account Res	135	4804
9	J Corp Financ	135	4413
10	J Account Res	121	4350
11	Energy Econ	114	3357
12	Financ Res Lett	113	3307
13	Rev Financ Stud	112	3246
14	Strategic Manage J	114	3218
15	Environ Sci Pollut R	131	3089
16	Acad Manage J	91	3054
17	Manage Sci	93	2976
18	Bus Strateg Environ	95	2852
19	J Bank Financ	109	2772
20	J Bus Res	100	2519

4.4.3. Keyword Co-Citation Network

Figure 7 and Table 12 illustrate the main thematic clusters shaping internal control and financial management research. The most frequent keywords that been use are internal control, corporate governance, sustainability, and financial performance. Emerging topics such as

machine learning and digital transformation highlight the growing integration of technology in enhancing internal control systems. Additionally, clusters around corporate social responsibility (CSR), COVID-19, and environmental regulation suggest a shift toward resilience, ethical management, and regulatory adaptation in post-pandemic contexts. These interconnected keywords indicate a transition from traditional financial control toward a multidimensional approach that combines governance, sustainability, and technological innovation to strengthen organizational performance and accountability.

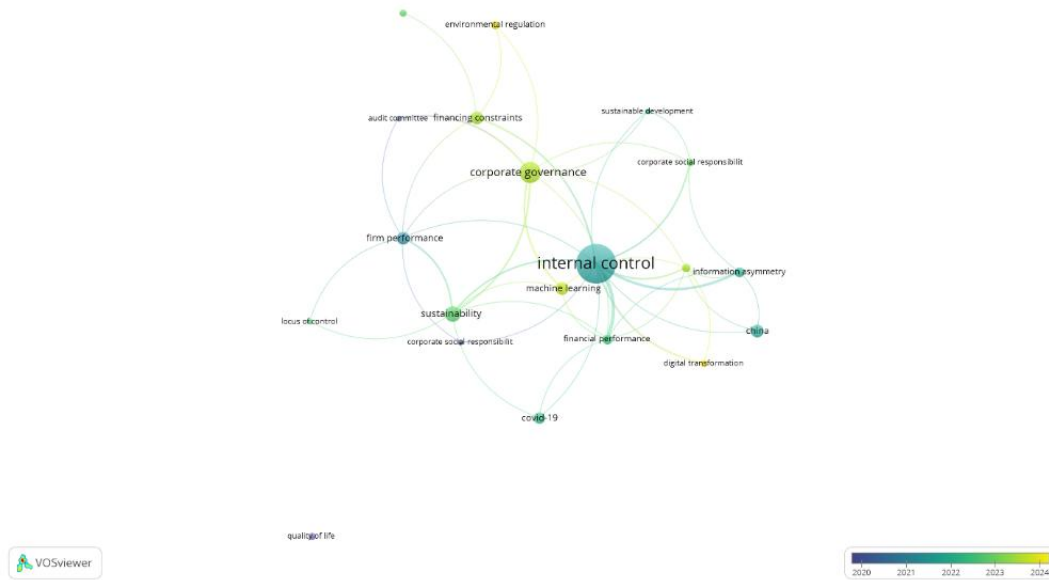


Figure 7: Network Visualization of Keyword Cluster in Internal Control Financial
Source (s): Web of Science database

Table 12: Keywords Cluster in Internal Control Financial

Rank	Cluster Keyword	Co-Occurrence	Total Link Strength
1	internal control	28	22
2	corporate governance	15	12
3	sustainability	11	10
4	financial performance	7	10
5	firm performance	9	8
6	green innovation	6	8
7	information asymmetry	7	7
8	financing constraints	9	5
9	machine learning	9	5
10	corporate social responsibility	5	5
11	china	9	3
12	covid-19	8	3
13	digital transformation	5	3
14	audit committee	4	3
15	sustainable development	4	3
16	environmental regulation	6	2
17	corporate social responsibility (csr)	4	2
18	locus of control	4	2
19	internal control quality	5	1
20	quality of life	5	0

4.4.4 Most Cited Journal with Co-Citation Frequency

Table 13: Most Cited Journal with Co-Citation Frequency
Source (s): Web of Science Database

Rank	Journal	Co-Citation	Total Link Strength
1	Account Rev	328	10318
2	Journal of Cleaner Production	326	7660
3	Sustainability-University of Basel	319	6230
4	Journal Finance Economic	269	8704
5	Journal Account Economic	225	7629
6	Journal Finance	196	5415
7	Journal Business Ethics	184	5146
8	Contemporary Account Research	135	4804
9	Journal of Corporate Finance	135	4413
10	Environmental Science and Pollution Research	131	3089
11	PLOS one	128	888
12	Journal Account Research	121	4350
13	Energy Economic	114	3357
14	Strategic Manage J	114	3218
15	Financ Res Lett	113	3307
16	Rev Financ Stud	112	3246
17	J Bank Finance	109	2772
18	J Bus Res	100	2519
19	Bus Strategy Environment	95	2852
20	Energy Policy	94	2095

The journal co-citation analysis reveals a well-established and interdisciplinary intellectual foundation for research on internal control and financial management. The Accounting Review emerges as the most influential outlet, exhibiting the highest co-citation frequency and total link strength (Co-Citation= 328, Total Link Strength= 10318), which underscores its central role in shaping core theoretical and empirical debates. Closely following are Journal of Cleaner Production (Co-Citation= 326, Total Link Strength= 7660) and Sustainability (University of Basel) (Co-Citation= 319, Total Link Strength= 6230), indicating that internal control research increasingly intersects with sustainability, environmental accountability, and responsible financial governance.

Leading finance journals such as Journal of Finance, Journal of Financial Economics, Review of Financial Studies, and Journal of Corporate Finance further anchor the field in rigorous financial theory and market-based perspectives. At the same time, the presence of Journal of Business Ethics, Business Strategy and the Environment, and Energy Policy highlights growing scholarly interest in ethical governance, strategic control, and sector-specific accountability. Overall, the co-citation structure reflects a mature research domain that integrates accounting foundations with finance, sustainability, and strategic management perspectives.

5. Conclusion

The bibliometric results reveal a steadily maturing body of research on internal control and financial outcomes, with intellectual roots tracing back to long-standing governance theory. The prominence of Jensen and Meckling's (1976) agency perspective in the co-citation network reflects how internal control continues to be framed as a mechanism for reducing information asymmetry and safeguarding organizational assets. Likewise, the strong links to Dechow, Sloan, and Sweeney (1996) highlight ongoing concerns surrounding internal control quality and the reliability of financial reporting.

The presence of influential financial scholars such as Fama and French (1993) indicates that internal control is increasingly studied alongside broader determinants of firm performance, while citations to Porter (1985) and Abbott et al. (2000) suggest that governance structures and strategic oversight remain central in explaining control effectiveness.

Overall, the analysis shows that research in this field is converging around themes of governance, performance, and information integrity. Yet the fragmented author network implies that collaboration remains limited. Greater cross-institutional engagement may help generate more robust, comparative insights into how internal control systems shape financial outcomes across different organizational contexts.

Acknowledgement

The study was funded by the Fundamental Research Grant Scheme by Ministry of Higher Education.

Conflict of Interest Statement

This study was partially funded by the Fundamental Research Grant Scheme by Ministry of Higher Education. The funder had no role in the design of the study, data collection, analysis, or publication.

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