

Audit Quality: A Systematic Review of Key Factors and Future Directions

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ABSTRACT

This study presents a systematic literature review on Audit Quality, focusing on its key determinants and the evolving dynamics within the audit profession. The problem addressed is the need for a comprehensive understanding of how various factors such as auditor independence, firm size, and regulatory frameworks influence audit quality, particularly in a rapidly changing business and technological environment. The research objective is to synthesize existing studies and identify gaps in the literature to provide direction for future research in the field. Using the Scopus database, we applied a systematic review process, including keyword searches and filtering criteria, to select relevant academic papers. The data were analyzed qualitatively to explore the trends, challenges, and advancements in audit quality research. Our findings reveal that while traditional factors such as auditor competence and regulatory impact remain crucial, there is a growing need to investigate the role of technological innovations, such as data analytics and artificial intelligence, in enhancing audit processes. Furthermore, gaps were identified in understanding how these innovations influence audit quality in practical settings. This review offers critical insights for both researchers and practitioners, highlighting the importance of integrating new technologies with traditional audit methods to enhance the effectiveness and reliability of audits.

Keywords: independence, regulatory frameworks, data analytics, audit methodologies.

INTRODUCTION

Audit quality is pivotal in ensuring the integrity and reliability of financial reporting across various sectors. As global markets expand and regulatory frameworks evolve, the complexity of audits increases, encompassing not only financial audits but also operational and environmental dimensions. This expansion necessitates a robust understanding of audit quality's multi-faceted nature and its consequential impact on a diverse array of stakeholders—including investors, regulatory bodies, and the public at large (Nuijten et al., 2015). While the importance of high-quality audits is universally acknowledged, the definition and measurement of 'audit quality' remain subjects of considerable debate and variability (Ahmed, 2024). This study aims to dissect these complexities by exploring audit quality from several vantage points to establish a more comprehensive understanding that aligns with contemporary auditing challenges and stakeholder expectations. This approach not only addresses the immediate

concerns of audit efficacy but also sets the stage for a broader discussion on enhancing the reliability and trustworthiness of audits in a rapidly changing economic landscape.

Despite the central role of audit quality in bolstering financial reporting standards, significant challenges persist in achieving and maintaining high audit standards universally. The concept of audit quality is multifarious, influenced by a myriad of factors including auditor independence, the depth of the auditor-client relationship, and the inherent characteristics of audit firms. Moreover, the audit landscape has been periodically marred by high-profile audit failures, which have catalyzed a reevaluation of auditing practices and their effectiveness. Such incidents underscore the pressing need to address the discrepancies in how audit quality is perceived and implemented across different jurisdictions and market sectors (Noch, 2024). This research seeks to delve into these specific problems, aiming to elucidate the underlying causes of variable audit quality and identify potential pathways to fortify auditing practices and enhance the overall trust in financial reports. Through a rigorous examination of contemporary challenges, this study endeavors to contribute meaningful insights into the ongoing discourse on improving audit efficacy and reliability.

The purpose of this study is to conduct a comprehensive analysis of the existing body of literature on audit quality by examining publication trends and identifying key contributors to the field. Specifically, this study seeks to analyze publication trends over time, investigating the growth and development of research on audit quality across various countries, subject areas, authors, and funding sponsors. By leveraging bibliometric analysis, the study will provide insights into the global distribution of audit quality research, highlighting dominant regions and subject areas that have contributed significantly to the field. Additionally, this research aims to identify prominent authors and institutions shaping the discourse on audit quality, as well as the influence of funding bodies on the direction of scholarly work. Beyond mapping the existing landscape, this study also seeks to address the research gap in the current literature. By doing so, this study will offer valuable insights for researchers, practitioners, and policymakers, guiding future investigations and advancing the field of audit quality.

A review of the existing literature on audit quality reveals significant gaps, particularly in the scope and depth of research beyond financial audits. While numerous studies have focused on financial audit quality, exploring its determinants through proxies such as audit firm size, tenure, and auditor independence (James & Izien, 2014; Kalabeke et al., 2019), there is a lack of comprehensive analysis concerning audit quality in non-financial contexts such as operational and environmental audits. This gap underscores the need for a broader examination of audit quality, encompassing diverse audit types and settings. Additionally, much of the existing literature relies heavily on observable audit outcomes—such as audit opinions and financial statement accuracy (Indriaty, 2024) as proxies for quality, without delving into the more complex dynamics of auditor-client relationships, regulatory interventions, or the nuances of auditor judgment and professional skepticism. Furthermore, factors like audit fees and their potential impact on audit quality (Guan, 2016) have been explored in isolation, with limited attention to how these variables interact across different audit environments. This study seeks to address these gaps by providing a systematic analysis of audit quality that includes not only financial audits but also operational and environmental audits, while exploring how factors such as auditor tenure, audit fees, and auditor-client dynamics influence quality across

these settings. By filling this gap, the study aims to advance both theoretical and practical understandings of audit quality, offering a more nuanced and comprehensive framework for future research.

This study introduces a novel approach by expanding the focus on audit quality beyond financial audits to include operational and environmental audits, areas that have been underexplored in existing literature. By analyzing factors such as auditor tenure, audit fees, audit rotation, and audit failure, it offers fresh insights into the determinants of audit quality. The study also leverages bibliometric techniques using Scopus data to map global publication trends and highlight research gaps. Given the increasing importance of non-financial audits, this research provides valuable contributions to improving audit practices and guiding future studies, benefiting both academics and practitioners.

METHODS

This study employs a systematic literature review methodology, utilizing the Scopus database as the primary source of metadata due to its comprehensive and global coverage of scholarly publications. Scopus is widely recognized as the most reputable and complete global repository for peer-reviewed academic research, ensuring that the data collected is both reliable and relevant to the topic of audit quality.

The steps of this bibliometric study are outlined in figure 1. The data mining process was conducted on August 23, 2024, using specific search strings: "Audit Quality" and "Quality of Audit". The aim was to capture a broad range of studies discussing various aspects of audit quality, not limited to financial audits but also encompassing operational, environmental, and other forms of audits. The initial search yielded a total of 117 documents.

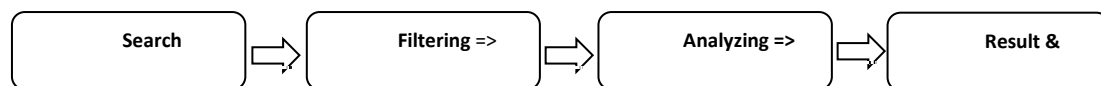


Figure 1. Stages of Bibliometric Study

To enhance the relevance and precision of the results in alignment with the study's objectives, a series of specific filters were applied. The search was refined to focus on publications within the subject areas of Business, Management and Accounting, Economics, Econometrics and Finance, and Social Science. The inclusion criteria were limited to articles, conference papers, and reviews, as these document types undergo rigorous peer-review processes, thereby ensuring the reliability and high quality of the contributions. No language restrictions were imposed to maintain a broad and diverse range of contributions, while no further limitations were applied to fields such as keywords, country/territory, source type, source title, author name, publication stage, funding sponsor, and open access status. This approach resulted in a dataset of 102 documents, which forms the basis for the bibliometric and qualitative analysis in this study.

The 102 documents retrieved from the Scopus database were analyzed using two complementary methods: bibliometric analysis and qualitative content analysis. The

bibliometric analysis examined publication trends over time, identified the key countries and regions contributing to the literature on audit quality, and explored the dominant subject areas, authors, and funding sponsors within this field of study. VOSviewer software was used to visualize citation patterns, co-authorship networks, and keyword co-occurrence, providing insights into the relationships and trends within the dataset. Simultaneously, a qualitative content analysis was conducted to investigate the core themes emerging from the literature, with a focus on the factors influencing audit quality across various types of audits, including financial, operational, and environmental audits. The content analysis also identified gaps in the existing literature, pinpointing areas in need of further exploration to deepen the understanding of audit quality in different contexts.

This study takes a broad perspective, not limiting its analysis to financial statement audits but also encompassing operational and environmental audits, offering a more comprehensive view of audit quality. This inclusive approach ensures that the findings are applicable across different audit types and contexts, providing insights relevant to a wide range of stakeholders in the auditing profession. By integrating bibliometric analysis with qualitative content analysis, this methodology allows for a robust examination of the factors influencing audit quality and facilitates the identification of future research opportunities in this critical area of study.

RESULTS AND DISCUSSION

3.1 Publication Trend

The analysis of publication trends (see in Figure 2) reveals a clear progression in the scholarly focus on audit quality. From 1996 to 2006, the field saw minimal activity, with publications rarely exceeding two documents per year. This suggests limited academic interest or an early stage of development in audit quality research during this period.

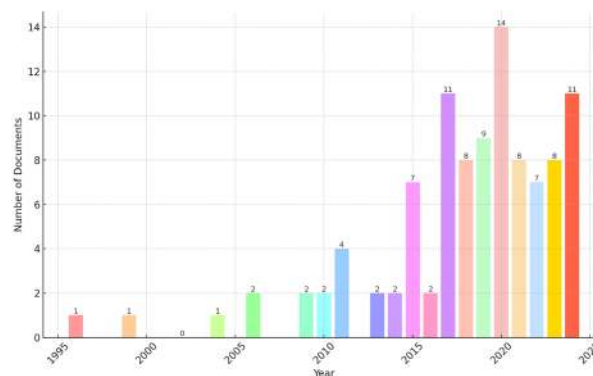


Figure 2. Publication Trend in Scopus (Data by Year)

A moderate increase in publications occurred between 2009 and 2014, reflecting growing recognition of the topic’s importance. While output fluctuated, the rise in scholarly contributions indicates that researchers began to pay more attention to audit quality, possibly driven by evolving standards and regulatory pressures.

From 2015 onwards, there was a marked increase in publications, with significant peaks in 2017, 2020, and 2024. This surge likely reflects key advancements in audit regulations, greater scrutiny of audit practices, and increased funding. By August 2024, the number of publications already matched previous peak years, highlighting the continued relevance and urgency of audit quality research in enhancing corporate governance and financial accountability.

3.2. Top 10 Countries by Document

The global distribution of publications on audit quality (see Figure 3) reveals significant disparities in contributions from different nations, reflecting variations in research infrastructure and priorities. The United States leads with 20 documents, demonstrating a strong and sustained interest in the field. This dominance is likely due to well-funded institutions, extensive research facilities, and a long tradition of scholarly work in audit quality. Indonesia follows with 12 documents, likely driven by growing regional interest and increased investment in research, encouraging local scholars to engage in the international dialogue on audit quality.

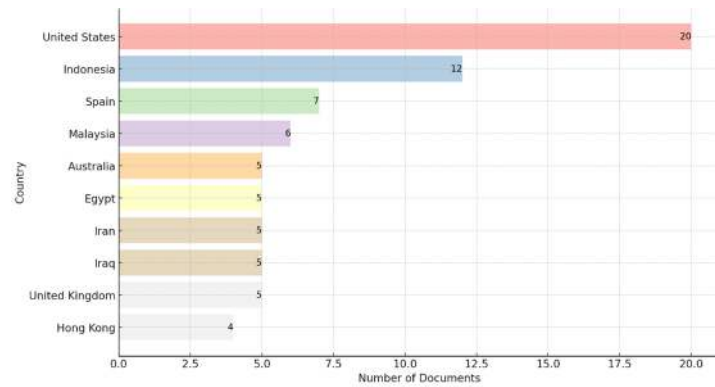


Figure 3. Top 10 Countries by Document

Countries with moderate contributions, such as Spain, Malaysia, and Australia, have each produced between 5 and 7 documents, suggesting focused research efforts within specific niches of audit quality. Meanwhile, emerging contributors like Iraq, Iran, Egypt, and the United Kingdom, with 5 documents each, reflect growing research infrastructures and participation in global academic discussions. In contrast, nations such as Belgium, Brazil, and Finland have only contributed a single document, indicating their early stages of research in this area. Notably, the 'Undefined' category, with 4 documents, may indicate either data recording inconsistencies or multinational collaborations. Overall, these findings offer insight into the global dynamics of audit quality research, identifying leading regions and highlighting emerging players with potential for further growth through collaboration and funding.

3.3. Document by Subject Area

The breakdown of documents by subject area (see Figure 4) in audit quality research reveals a strong concentration in specific disciplines. Business, Management, and Accounting dominate with 46.1% of the publications (89 documents), underscoring the fundamental role of auditing in corporate governance, financial transparency, and regulatory compliance. This

focus reflects the critical importance of audit quality within the broader context of accounting and financial management. Meanwhile, Economics, Econometrics, and Finance contribute 25.9% (50 documents), highlighting the close link between audit practices and economic theories, particularly in relation to market efficiencies and the financial implications of audit standards.

Social Sciences, with 11.9% (23 documents), introduces an interdisciplinary dimension, likely exploring the sociological and ethical impacts of audit practices, such as corporate culture and societal trust. Additionally, fields like Decision Sciences (6.2%, 12 documents) emphasize the role of audit quality in influencing business decision-making processes, while Engineering (3.6%, 7 documents) and Computer Science (2.6%, 5 documents) reflect the growing reliance on technology and software, such as AI, in enhancing audit processes and fraud detection.

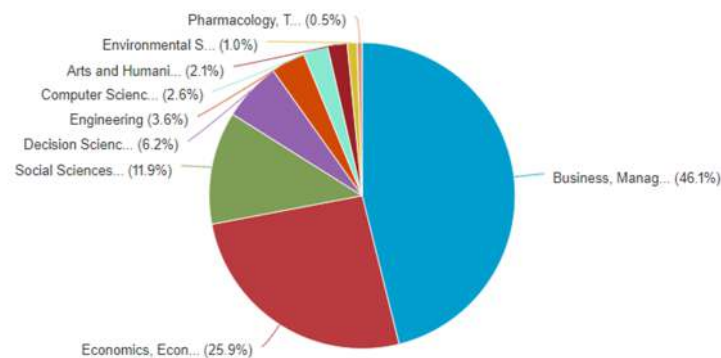


Figure 4. Documents by Subject Area

Although less prominent, areas like Environmental Science (1.0%, 2 documents) and Pharmacology (0.5%, 1 document) signal niche intersections where auditing plays a role in regulatory compliance, particularly within environmental and pharmaceutical sectors. This distribution showcases the diverse, interdisciplinary nature of audit quality research, with a strong emphasis on business and economic studies, while also pointing to opportunities for cross-disciplinary collaboration that could further expand the scope and impact of audit methodologies in various fields.

3.4 Documents by Author

The analysis of the number of documents by individual authors (see Figure 5) in the field of audit quality research highlights a range of contributions, with both prolific and emerging scholars playing key roles. Garcia-Blandon, J. leads with three publications, suggesting a focused expertise in audit quality, likely contributing to foundational theories or methodologies in the field. Other major contributors, such as Argilés-Bosch, J.M., Bustos-Contell, E., and Castillo-Merino, D., have each authored two documents, representing a core group of researchers advancing various aspects of audit quality through their sustained scholarly efforts.

In contrast, a larger group of authors, including Abdelazim, S.I., Abdoli, M., and Abdul Rahman, A.A., have contributed single publications, offering unique perspectives that enrich

the broader understanding of audit quality. This diversity reflects a healthy balance between depth and breadth in the field, where authors with multiple publications may be refining specific theories, while those with single documents often bring fresh or interdisciplinary insights. The distribution underscores the dynamic nature of audit quality research, where both established scholars and emerging researchers contribute to advancing the field through varied but complementary approaches.

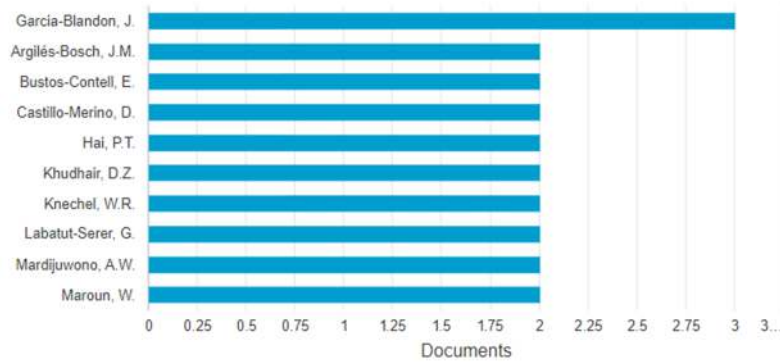


Figure 5. Documents by Author

3.5 Documents by Funding Sponsor

The bar chart illustrating documents by funding sponsor in the field of audit quality research highlights both the concentration and diversity of funding sources (see Figure 6). The National Natural Science Foundation of China (NNSFC) emerges as the leading sponsor with four documents, indicating a significant investment in advancing audit quality research, particularly in China. This could reflect a national priority to strengthen financial transparency and regulatory oversight. Other notable sponsors, such as Prince Sattam bin Abdulaziz University and similar institutions, have supported multiple research projects, each contributing two documents, showing a consistent focus on improving audit practices through academic and practical research initiatives.

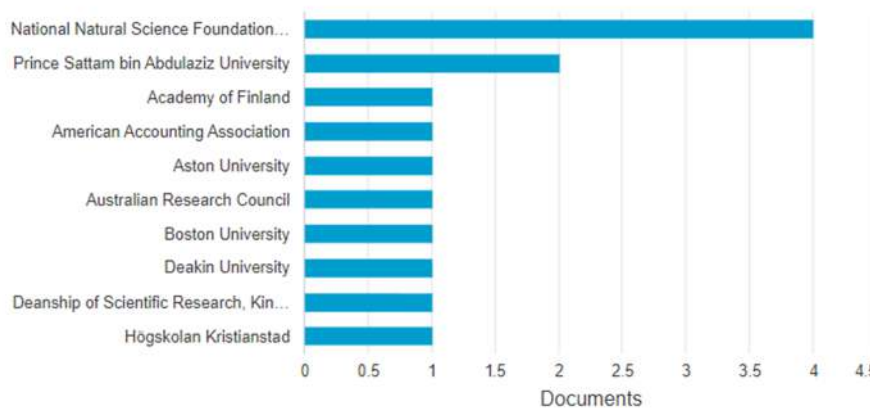


Figure 6. Documents by Funding Sponsor

The broad range of funding institutions, including the Academy of Finland, American Accounting Association, Australian Research Council, and various universities, underscores the global interest in audit quality research, with each institution sponsoring at least one document. This diversity of sponsorship reflects a multidisciplinary and international commitment to enhancing audit methodologies. Leading sponsors, especially the NNSFC, may shape research priorities within their regions, influencing the global discourse on audit quality. The variety of funding sources also opens opportunities for collaboration and partnerships, promoting innovation and the cross-pollination of ideas across different research environments, ultimately enriching both academic knowledge and practical applications in the field.

3.6 Documents by Type

The distribution of document types in audit quality research (see Figure 7) reveals a clear dominance of articles, illustrating their critical role in advancing the field. Articles account for 95.1% of the publications, emphasizing the importance of peer-reviewed, detailed studies in disseminating new research findings and theoretical developments. This overwhelming presence highlights the preference for comprehensive formats that thoroughly explore specific aspects of audit quality, contributing to the foundational knowledge in this well-established area of study. Reviews, comprising 3.9% of the documents, play a more focused role by synthesizing existing research and providing critical assessments of the field, which are essential for identifying trends, gaps, and future research directions.

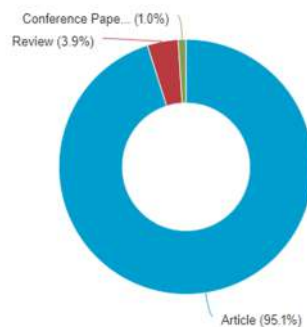


Figure 7. Documents by Type

The minimal representation of conference papers, at just 1.0%, suggests that while these forums serve as platforms for presenting preliminary ideas, they are not the primary medium for advancing substantive discourse on audit quality. This may reflect the field's preference for rigorously peer-reviewed journal publications, which offer a more reliable foundation for academic and practical applications. Nonetheless, the limited presence of conference papers highlights a potential area for growth, as increased participation in dynamic, real-time exchanges at conferences could foster innovation and collaboration, accelerating developments in audit quality research.

3.7 Most Cited Publication

The citation analysis identifies the most influential works in the audit quality literature, highlighting key contributions to the field (see Table 1). The mapping visualization analysis, divided into network and overlay visualizations, provides insights into research themes and

their relationships. The network visualization reveals the structural connections between key concepts, while the overlay visualization offers a time-based view of the evolution of these themes. Both analyses will be discussed in detail in the last sections that explore the development and interconnections within the field.

Analytical on top 10 cited publication

- **Research Scope and Methodology.** The studies in the top-cited publications have predominantly utilized quantitative methods with a heavy reliance on archival and survey data. This reliance suggests a potential gap in qualitative explorations or mixed-methods approaches that could provide deeper insights into the subtleties and complexities of audit quality. Notably, while some papers employed qualitative interviews or case studies, there remains a broad avenue for ethnographic studies, participatory research, or action research that can bring a new dimension to understanding audit processes.
- **Geographic and Institutional Focus.** A significant concentration on **Big 4 auditing firms** and large public companies, particularly within developed markets, is evident. This focus underscores a research gap in the audit quality of smaller audit firms, non-Big 4 firms, and companies operating within emerging or less regulated markets. Additionally, the impact of different regulatory environments on audit quality remains underexplored, particularly in transitional economies where institutional frameworks differ markedly from those in the West.
- **Technological Advances.** Several studies have highlighted the impact of digital transformation on audit practices. However, the ongoing evolution of technology, including AI and machine learning, presents a continuously changing landscape that requires updated research. Studies that explore the real-time application of these technologies in auditing, and their impact on audit quality, especially in terms of error detection, fraud prevention, and decision-making processes, are lacking.
- **Social and Ethical Considerations.** The implications of social ties and their impact on auditor independence is a recurring theme. However, there appears to be a gap in comprehensive studies that integrate social network analysis to quantitatively measure the influence of these networks on audit outcomes. Furthermore, ethical considerations, particularly in the context of increased data availability and privacy concerns with technological integration in auditing, are areas ripe for further research.
- **Practical Implications and Policy.** While the practical implications are well-discussed, there is a noticeable gap in translational research that bridges academic findings with practical auditing standards or policy-making. Research that collaboratively engages with standard setters and regulatory bodies to translate findings into actionable policies or auditing standards is necessary. This gap is particularly pertinent in the areas of expanded auditor reports and the management of audit and corporate governance in the face of digital transformation.
- **Longitudinal and Comparative Studies.** There is a paucity of longitudinal studies that track audit quality over extended periods, especially those that could assess the long-term effects of regulatory changes or technological adoption. Moreover, comparative



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studies across different sectors or industries, which could reveal sector-specific challenges and best practices in audit quality, are limited

Table 1. Top 10 Cited publication on Audit Quality: Review

No	Article Title (Year) / Citations	Authors Source	Paper discussion	Findings	Practical Implication	Type of Data	Method
1	Do school ties between auditors and client executives influence audit outcomes? (2016) / 220	<ul style="list-style-type: none"> o Guan, Y., Su, L.N., Wu, D., Yang, Z. o Journal of Accounting and Economics, 61(2-3), pp. 506–525 	<ul style="list-style-type: none"> o This study examines whether personal connections, such as school ties between auditors and client executives, impact the outcomes of audits. It may explore how such relationships could affect auditor independence, audit quality, or perceived conflicts of interest. 	<ul style="list-style-type: none"> o Connected auditors issue favorable opinions, higher discretionary accruals, and lower earnings response. o School ties lead to impaired audit quality and higher audit fees. o Firms with auditor-executive school ties report more income-increasing discretionary accruals. 	<ul style="list-style-type: none"> o School ties between auditors and executives impair audit quality. o Highlight importance of auditor independence and potential threats from social ties. o Investors should be cautious about appointing connected external auditors. o Shareholders should be aware of the adverse effects of school ties. o Investors discount earnings audited by connected auditors. 	<ul style="list-style-type: none"> o Archival data from publicly traded companies and their auditing records 	<ul style="list-style-type: none"> o Quantitative analysis using econometric models
2	Do client characteristics really drive the big N audit quality effect? New evidence from propensity score matching (2017) / 198	<ul style="list-style-type: none"> o DeFond, M., Erkens, D.H., Zhang, J. o Management Science, 63(11), pp. 3628–3649 	<ul style="list-style-type: none"> o Explores the relationship between Big N auditors and audit quality. The document examines whether the higher audit quality often attributed to Big N auditors is genuinely due to the auditors' competencies and incentives or if it can be explained by the characteristics of their clients (Big N = Deloitte, PWC, EY, and KPMG). 	<ul style="list-style-type: none"> o Majority of Propensity Score Matching (PSM) design choices support Big N effect in audit quality. o Big N effect persists across commonly used audit quality proxies. 	<ul style="list-style-type: none"> o PSM does not eliminate the Big N effect in audit quality. o Sensitivity of PSM design choices and audit quality measures are crucial. 	<ul style="list-style-type: none"> o Financial statements, auditor reports, client financial characteristics 	<ul style="list-style-type: none"> o Quantitative analysis with propensity score matching
3	The digital transformation of external audit and its impact on corporate governance (2020) / 190	<ul style="list-style-type: none"> o Manita, R., Elommal, N., Baudier, P., Hikkerova, L. o Technological Forecasting and Social Change, 150, 119751 	<ul style="list-style-type: none"> o The paper discuss the connection between the digital transformation of external audits and audit quality. It examines how the digitization of audit firms and the incorporation of new technologies are evolving the role of auditing, which in turn is expected to improve the quality of audits. 	<ul style="list-style-type: none"> o New technologies reduce audit costs and improve audit quality. o Auditors use data analytics to identify exceptions and improve processes. o Digitalization streamlines processes, saving time and improving efficiency. 	<ul style="list-style-type: none"> o Digitalization enhances audit relevance and quality for governance mechanisms. o Improves audit efficiency, reduces costs, and saves time for auditors. o Encourages innovation culture, new auditor profiles, and digital skill acquisition. o Enhances customer value, data analytics, and real-time monitoring tools 	<ul style="list-style-type: none"> o Interviews and surveys with audit professionals 	<ul style="list-style-type: none"> o Mixed methods with qualitative interviews and quantitative survey analysis
4	“Doing good field research”: Assessing the quality of audit field research (2016) / 178	<ul style="list-style-type: none"> o Malsch, B., Salterio, S.E. o Auditing, 35(1), pp. 1–22 	<ul style="list-style-type: none"> o This study evaluates the quality of field research conducted in the context of audits. It might discuss best practices, challenges, and methodologies to ensure high-quality field research that accurately reflects audit practices and outcomes. 	<ul style="list-style-type: none"> o Provides guidance for editors and reviewers in assessing audit field research. o Offers insights for audit researchers and Ph.D. students on fieldwork. 	<ul style="list-style-type: none"> o Provides guidance for editors and reviewers in assessing field research quality. o Helps researchers and Ph.D. students in learning new research methods. o Encourages field studies to bridge the gap with practitioners. o Offers opportunities for audit scholars to make significant original contributions. 	<ul style="list-style-type: none"> o Observations and interviews from field studies in auditing 	<ul style="list-style-type: none"> o Qualitative field research
5	Understanding Audit Quality: Insights from Audit Professionals and	<ul style="list-style-type: none"> o Christensen, B.E., Glover, S.M., Omer, T.C., Shelley, M.K. 	<ul style="list-style-type: none"> o This study presents insights from audit professionals and investors on what constitutes audit quality. It may cover 	<ul style="list-style-type: none"> o Audit quality indicators differ between auditors and investors. o Investors associate fewer PCAOB 	<ul style="list-style-type: none"> o Defines audit quality indicators for investors and auditors. o Highlights the importance of individual 	<ul style="list-style-type: none"> o Surveys from audit professionals and 	<ul style="list-style-type: none"> o Survey analysis

Investors (2016) /174	<ul style="list-style-type: none"> Contemporary Accounting Research, 33(4), pp. 1648–1684 	<p>various factors that influence audit quality, such as auditor expertise, independence, regulatory environment, and stakeholder expectations.</p>	<p>deficiencies with higher audit firm quality.</p> <ul style="list-style-type: none"> Restatements and SEC enforcement actions are linked to audit quality. 	<p>auditor characteristics in determining audit quality.</p> <ul style="list-style-type: none"> Provides insights into audit quality perceptions for future research. Suggests areas for future research on audit quality and investor perceptions. 	investors
6 Internal Audit Quality and Financial Reporting Quality: The Joint Importance of Independence and Competence (2016) /172	<ul style="list-style-type: none"> Abbott, L.J., Daugherty, B., Parker, S., Peters, G.F. Journal of Accounting Research, 54(1), pp. 3–40 	<ul style="list-style-type: none"> This study examines the relationship between internal audit quality and financial reporting quality, focusing on the roles of auditor independence and competence. It may argue that both factors are critical for ensuring accurate and reliable financial reporting. 	<ul style="list-style-type: none"> Joint competence and independence enhance internal audit quality for financial reporting. Outsourcing boosts IAF independence, positively impacting financial reporting quality. 	<ul style="list-style-type: none"> Joint competence and independence enhance IAF financial reporting monitoring. Independence and competence are crucial for effective internal audit functions. Outsourcing may threaten in-house IAF independence and financial reporting quality. 	<ul style="list-style-type: none"> Case studies from corporate financial reports and internal audit evaluations Case study analysis
7 Audits of Complex Estimates as Verification of Management Numbers: How Institutional Pressures Shape Practice (2015) / 169	<ul style="list-style-type: none"> Griffith, E.E., Hammersley, J.S., Kadous, K. Contemporary Accounting Research, 32(3), pp. 833–863 	<ul style="list-style-type: none"> This study explores how institutional pressures influence the auditing of complex estimates. It might discuss the challenges auditors face when verifying management's estimates and how external and internal pressures affect audit practices and outcomes. 	<ul style="list-style-type: none"> Auditors lack knowledge due to division of knowledge between auditors and specialists. Auditors overlook conflicting evidence, influenced by management's model. Auditors struggle with evaluating assumptions due to lack of experience. 	<ul style="list-style-type: none"> Auditors need structural changes for improving audit quality of estimates. Auditors should focus on key risk drivers for complex estimates. Documentation issues and management influence affect auditing complex estimates. 	<ul style="list-style-type: none"> Audit reports and management estimates in financial reporting Qualitative analysis of audit practice
8 The Effect of China's Weak Institutional Environment on the Quality of Big 4 Audits (2015) / 162	<ul style="list-style-type: none"> Ke, B., Lennox, C.S., Xin, Q. Accounting Review, 90(4), 1591–1619. 	<ul style="list-style-type: none"> Examines the impact of China's weak institutional environment on audit quality provided by Big 4 firms. 	<ul style="list-style-type: none"> Found that Big 4 firms assigned less experienced partners to domestic-only listed companies and were less likely to issue modified audit reports, indicating compromised audit quality in weaker institutional settings. 	<ul style="list-style-type: none"> Highlights the need for regulatory improvements in China and suggests that multinational firms ensure consistent audit quality standards across all operating regions. 	<ul style="list-style-type: none"> Comparative analysis of audit outcomes between Chinese firms and Western firms Comparative analysis
9 Consequences of Adopting an Expanded Auditor's Report in the United Kingdom (2018) / 160	<ul style="list-style-type: none"> Gutierrez, E., Minutti-Meza, M., Tatum, K.W., Vulcheva, M. Review of Accounting Studies, 23(4), 1543–1587. 	<ul style="list-style-type: none"> Investigates the effects of adopting expanded auditor reports in the UK. 	<ul style="list-style-type: none"> Showed that expanded auditor reports increased transparency and were viewed positively by investors, leading to a greater trust in audit quality. 	<ul style="list-style-type: none"> Recommends that other regions consider adopting similar requirements for expanded auditor reports to improve transparency and investor confidence. 	<ul style="list-style-type: none"> Analysis of auditor reports before and after changes in reporting standards Longitudinal analysis of report quality
10 Do Social Ties Between External Auditors and Audit Committee Members Affect Audit Quality? (2017) / 158	<ul style="list-style-type: none"> He, X., Pittman, J.A., Rui, O.M., Wu, D. Accounting Review, 92(5), 61–87 	<ul style="list-style-type: none"> Explores the influence of social ties between auditors and audit committee members on audit quality 	<ul style="list-style-type: none"> Found that social ties can compromise audit quality, with auditors less likely to issue going concern opinions when there are strong connections with audit committee members. 	<ul style="list-style-type: none"> Suggests implementing stricter regulations to manage and disclose relationships between auditors and audit committee members to safeguard audit integrity. 	<ul style="list-style-type: none"> Data on audit committee relationships and audit quality outcomes Regression analysis focusing on social ties and audit quality

3.8 Mapping Visualization Analysis

Network visualization

The data obtained from the Scopus database was mapped using VOSviewer software, specifically utilizing bibliographic data and co-occurrence of keywords with full counting. This method allowed for an analysis of 309 keywords related to audit quality. To refine the analysis, a minimum threshold was set, requiring each keyword to appear at least twice in the literature. As a result, 42 keywords met this criterion and were included in the final mapping process.

The VOSviewer analysis identified 10 distinct clusters, which represent thematic groups of related research topics, all connected through co-occurrence links between keywords. The mapping revealed 71 links, indicating the relationships and frequency of connections between the keywords within the research domain of audit quality (as shown in Figure 8). These clusters provide a comprehensive visualization of the key areas of research focus and their interconnections in the field, allowing for a deeper understanding of the underlying structure of audit quality literature.

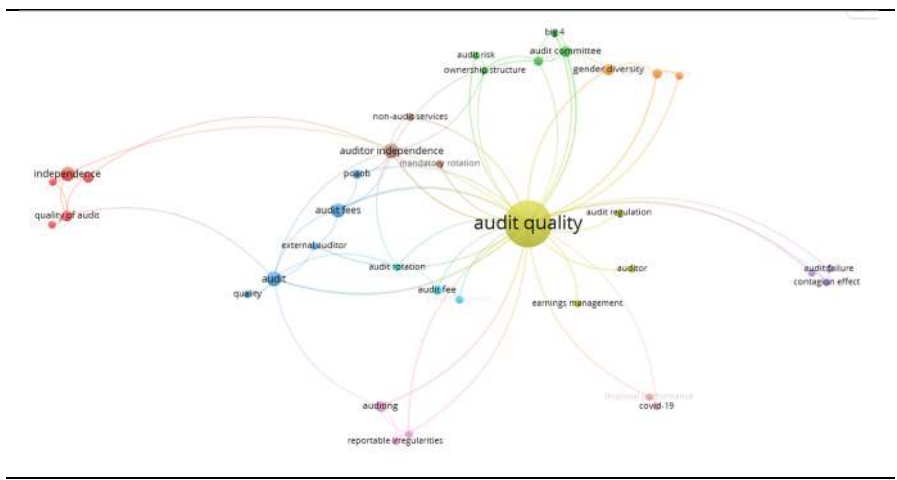


Figure 8. Network Visualization of Audit Quality

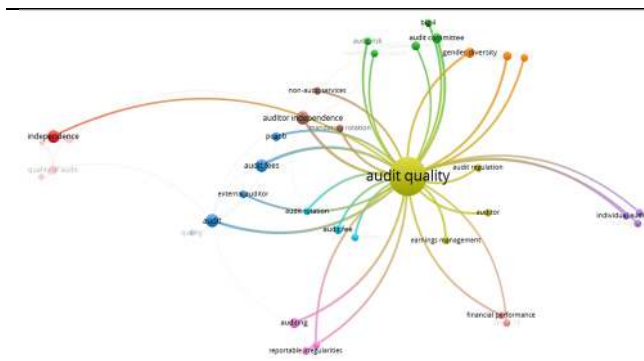


Figure 9. Network Visualization 1st cluster - Independence

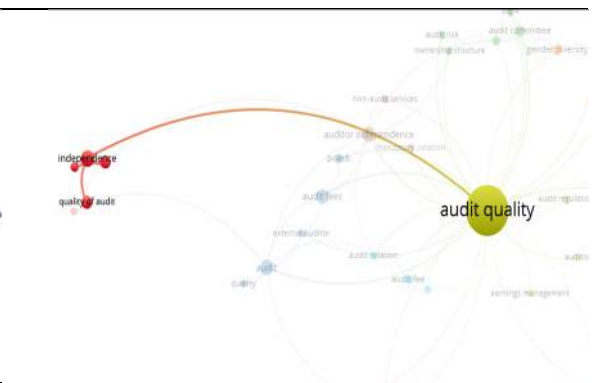


Figure 10. Network Visualization 2nd cluster - Independence

auditor independence. Another focus is the balance between audit fees and cost pressures, particularly for smaller firms, with research suggesting that underpriced audits may lower quality due to reduced time and resources. This cluster also explores the impact of regulatory fee disclosures and fee structures on audit quality, providing valuable insights into how financial dynamics affect the broader goal of reliable financial reporting.

The fourth cluster, focused on the "Audit Committee," emphasizes the crucial role audit committees play in overseeing audits and ensuring the integrity of financial reporting (see Figure 12). Research in this cluster highlights how the composition, independence, and expertise of audit committee members directly impact audit quality. Effective audit committees, particularly those with independent and financially literate members, strengthen the credibility of the audit process by ensuring that financial statements are accurate and free of material misstatements. The interaction between audit committees and external auditors is also explored, particularly in maintaining auditor independence and objectivity. The involvement of the "Big 4" firms suggests that larger companies, often under greater scrutiny, tend to have more robust audit committees, which can influence audit fees by demanding higher-quality audits. Ultimately, this cluster underscores the audit committee's essential role in corporate governance, protecting shareholders' interests and ensuring confidence in financial reporting.

Overlay Visualization

Figure 13 presents an overlay visualization of the co-occurrence of keywords related to "Audit Quality" based on time trends. This type of visualization highlights the evolution of research focus over time. Darker colours (such as blue and purple) represent older publications and topics that have been studied extensively in the past, whereas brighter colors (yellow and green) indicate more recent areas of research. Central themes such as "audit quality," "audit regulation," and "audit fees" appear to have been continuously explored, but topics like "COVID-19", “audit risk”, “external auditor”, “audit committee” and "audit failure" have emerged more recently, indicating new research directions that are increasingly relevant in current times.

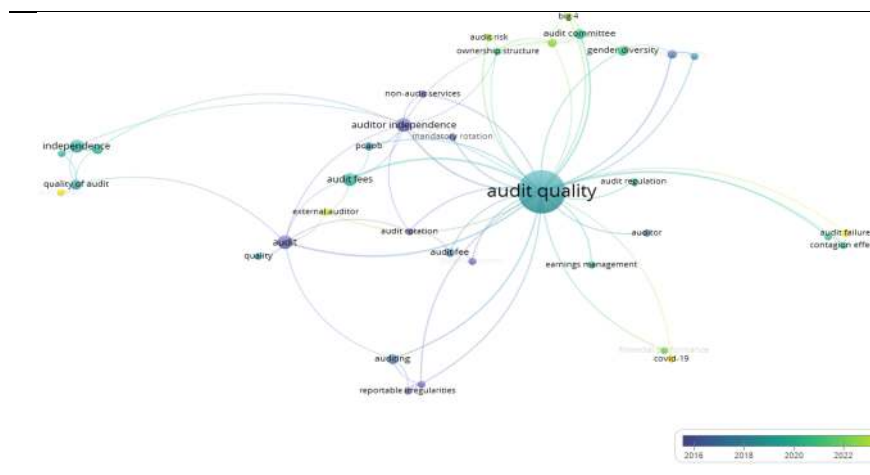


Figure 13. Overlay Visualization

The visualization shows how recent events like the COVID-19 pandemic have prompted a surge of interest in understanding its impact on audit practices, financial performance, and audit failure. Additionally, the themes of "gender diversity" and "contagion effect" also appear as recent focal points, reflecting the evolving concerns regarding social and systemic risks in financial markets. The bright areas surrounding these terms suggest growing interest and the need for more empirical work in these areas to address contemporary challenges in auditing.

3.9 Opportunities for Future Research

Based on the Top 10 cited publications in the field of auditing suggest a growing need for qualitative and mixed-methods research to take a more comprehensive approach. We propose expanding this research by employing ethnographic studies and action research within auditing firms. Ethnographic studies offer valuable insights into the daily routines, cultural dynamics, and interpersonal relationships that shape audit quality. These studies help reveal the nuanced, often hidden factors that influence auditors' decisions and interactions. Simultaneously, action research facilitates real-time interventions within firms, allowing researchers and auditors to implement improvements to auditing practices collaboratively. This iterative process creates a feedback loop that fosters continuous learning and the development of best practices in the field of auditing.

Research into diverse geographical and institutional contexts is equally crucial for advancing our understanding of audit quality. In particular, studying emerging markets with evolving regulatory frameworks can shed light on the unique challenges these environments present. Investigating non-Big 4 firms offers insights into how smaller or regional firms manage audit quality differently from their larger counterparts, broadening the scope of audit practices across various scales. By comparing these practices globally, researchers can deepen their analysis of international auditing standards and the specific difficulties faced by firms in different contexts. Furthermore, the integration of advanced technologies such as artificial intelligence (AI) and blockchain into auditing processes represents a transformative shift. AI tools, including machine learning algorithms, enhance the detection of fraud and discrepancies, while blockchain increases transparency and reliability in audit records. However, as these technologies revolutionize auditing, researchers must remain vigilant regarding the ethical implications, such as data privacy and security, to ensure responsible and effective implementation of these innovations.

Based on the analysis of the largest clusters related to audit quality, several suggestions and opportunities for future research emerge. For the first cluster, "Audit Quality," future research could focus on the impact of emerging technologies such as artificial intelligence and blockchain on audit practices and quality. As the audit profession undergoes digital transformation, understanding how these innovations influence audit risk assessment, regulatory compliance, and overall quality is crucial. Additionally, research could explore the post-pandemic environment, examining how remote auditing and changes in regulatory frameworks during crises, such as COVID-19, affect audit outcomes and governance.

In the second and third clusters, "Independence" and "Audit Fees," future research

opportunities lie in examining the long-term effects of mandatory auditor rotation and fee structures on audit quality, especially in non-Big 4 firms. Investigating whether stricter independence regulations or differentiated fee structures lead to measurable improvements in audit quality would provide valuable insights for policymakers. Lastly, in the fourth cluster, "Audit Committees," there is a need for more empirical studies that analyze the evolving role of audit committees in digital governance and cybersecurity risks, given the increasing focus on technology-related vulnerabilities in financial reporting. These areas of inquiry would address key gaps in current research and offer practical insights for improving audit practices.

The challenges for future research based on Overlay Visualization lie in addressing the practical implications of these emerging topics, such as how audit procedures can adapt to new risks posed by global crises and how diversity within audit committees might influence audit outcomes. Opportunities exist in expanding research into technological advancements in auditing, understanding systemic risks, and enhancing regulatory frameworks to ensure high audit quality in a rapidly changing environment. These emerging themes open up rich avenues for future studies to contribute to the evolving landscape of audit quality.

CONCLUSIONS

This systematic literature review on "Audit Quality" highlights the multifaceted nature of audit quality and its pivotal role in ensuring the integrity and reliability of financial reporting. The review synthesizes key factors that influence audit quality, including auditor independence, audit firm size, auditor-client relationships, and the regulatory environment. A clear trend emerges, emphasizing the importance of auditor professionalism and the impact of regulatory frameworks on enhancing audit quality. The findings underscore the need for consistent improvements in auditing standards to meet the increasing demands for transparency and accountability in financial reporting.

Moreover, the review reveals significant gaps in the current literature, particularly in understanding how technological advancements, such as data analytics and artificial intelligence, are reshaping audit practices. While much of the existing research focuses on traditional factors affecting audit quality, there is a growing need to explore how digital transformation is influencing audit processes, especially in areas like risk assessment and fraud detection. Addressing these gaps could contribute to the development of more robust audit methodologies that align with evolving business environments and technological landscapes.

Finally, this study provides valuable insights for future research directions, suggesting that a more comprehensive approach that integrates both qualitative and quantitative factors will be essential to advancing the field of audit quality. Future studies should consider cross-jurisdictional analyses to capture the global dynamics of audit practices and regulatory differences. Additionally, examining the interplay between auditor behavior, firm culture, and technological innovation will be critical in understanding the

next generation of audit quality standards. These findings aim to inform both academics and practitioners in enhancing the effectiveness and reliability of audits in an increasingly complex global economy.

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