

External audit quality and employee efficiency: A bibliometric analysis

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Abstract: The increasing complexity of corporate operations, digital reporting, and cross-border transactions has heightened the importance of external audit quality as a pillar of accountability and capital market trust. While prior research links audit quality to earnings management, reporting credibility, and investor protection, its impact on employee effectiveness remains underexplored. This study addresses that gap through a systematic literature review of 2020–2026 publications, integrating auditing and workforce performance research using a PRISMA-guided approach and bibliometric analysis. Eighty peer-reviewed studies from Scopus, Web of Science, Google Scholar, and local repositories were analyzed. VOSviewer mapped co-citation networks, keyword co-occurrence, and bibliographic coupling to identify the field's intellectual structure. Findings suggest an emerging link between high audit quality and employee effectiveness through stronger monitoring, standardized controls, and signaling effects that enhance discipline and productivity. However, conceptual fragmentation persists in measuring employee effectiveness and in addressing digital and ESG-related audit dynamics. High-quality external audits enhance governance, reporting credibility, accountability, and employee effectiveness through stronger monitoring and standardized controls. Organizations should improve auditor independence, expertise, and oversight to strengthen productivity and discipline.

Keywords: *Audit efficiency, Corporate governance, Employee efficiency, External audit quality, Financial report.*

1. Introduction

The growing sophistication of corporate activities, cross-border operations, and digitization of financial reporting conditions have heightened academic and regulatory interest in the quality of external audit. External auditing, in modern forms of governance, is not only a statutory compliance measure and system but is a foundational pillar of capital market trust and business responsibility [1, 2]. The international upheavals caused by financial misstatements, corporate collapses, and regulatory penalties have made the argument that audit quality is larger than assurance of financial statements, and it can affect other organizational results. A large body of literature has focused on audit quality and its relationship with earnings management, cost of capital, financial reporting credibility, and investor protection; significantly less has been given to the possible implications on the internal performance of the organization, specifically on employee efficiency. This exclusion is quite prominent since auditing procedures redefine internal controls, managerial discipline, standardization of procedures, and behavioral accountability, which are all interconnected structurally with workforce performance.

The conceptualization of external audit quality is the collective probability of an auditor to detect material misstatements and report them accordingly [3]. This conceptualization has been extended in subsequent research by including auditor independence, industry specialization, audit tenure, audit firm size, audit fees, audit committee efficacy, partner rotation, and the magnitude of regulatory supervision [4]. The use of discretionary accruals, frequency of restatements, accuracy of the going concern status, and abnormal audit fees have become the most common archival proxies [5]. Recent research

highlights the importance of institutional environments, the strength of enforcement, and governance frameworks as well, when it comes to the effect on audit results [6]. Overall, this literature makes audit quality a multidimensional concept rooted in legal, organizational, and behavioral structures.

Though rich, there is a predominance of studies focusing on the quality of audit in capital market implications rather than in intra-organizational processes. In its literature, governance suggests that effective monitoring systems limit opportunistic leadership conduct, promote the clarity of information, and enhance the discipline of procedures [7]. These processes are reasonable to be applied to employee-level mechanisms through clarifying responsibilities, reducing informational asymmetries, and fostering compliance cultures. Work processes can be standardized with internal control enhancements, which are often introduced as a result of stringent auditing and reduce operational inefficiencies [8]. Moreover, reputable auditors can serve a signaling role, influencing how employees perceive organizational legitimacy and ethical climate, which are directly related to productivity and engagement. However, the empirical connection between external audit quality and employee performance remains disjointed and under-theorized.

Employee effectiveness, in its turn, is assessed in terms of heterogeneous dimensions. Organizational behavior studies theorize the concept of employee performance through the aspects of task performance, contextual performance, adaptive performance, and antisocial work behaviors [2]. The operationalization of effectiveness in human capital is conducted in the form of productivity ratios, revenue per staff, innovation rates, absenteeism, and efficiency rates [1]. When it comes to accounting and finance studies and practices, employee productivity is commonly proxied by sales per employee, value added per employee, or operational efficiency indicators based on financial statements. Newer reports include data that represent employee satisfaction, turnover rates, and ESG-related workforce indicators as indirect measures of effectiveness [4, 9]. Lack of conceptual integration of these measurement traditions has inhibited the formulation of a consistent framework connecting audit mechanisms to workforce outcomes.

Agency theory, institutional theory, and resource-based views can be used to establish the theoretical rationale linking the quality of external audit with employee efficiency. Agency theory asserts that increased monitoring levels will reduce moral hazard and opportunism, potentially leading to greater operational discipline [10]. Institutional theory suggests that organizations conform to normative and regulatory expectations to maintain legitimacy, with high-quality auditing institutionalizing best practice routines that influence employee behavior [11]. The resource-based view posits that audit quality can serve as a governance capability, enhancing organizational routines, information systems, and risk management procedures to facilitate effective deployment of human resources. However, there is limited empirical evidence supporting these theoretical perspectives, and such evidence is scattered across various fields.

The years 2020–2026 can be considered a very topical period for assessing this relationship. Remote auditing technologies, regulatory reforms, and increased attention to ESG disclosures have transformed audit practices and workforce management in response to the COVID-19 pandemic. Remote working, electronic documentation, and improved internal control testing processes have altered the interaction between audit and operational processes. Meanwhile, employee productivity metrics have changed in line with hybrid work arrangements and digital transformation projects. According to Monteduro et al. [11], robust governance and assurance systems can help reduce operational breakdowns during crises, but there are no systematic syntheses of this literature.

There arises thus a critical gap at the intersection between auditing and human resource performance research. To start with, no stockpile mapping of the exterior audit quality dimensions studied in recent empirical studies exists. Second, different measurement methods for the effectiveness of employees have not been properly grouped in an auditing environment. Third, the empirical connection between external audit quality and employee efficiency has not been thoroughly synthesized to determine whether the results converge, focus, or are inconclusive. Fourth, geographic and

methodological trends in this new research area are unexplored, specifically, whether studies are concentrated in particular institutional conditions or largely based on archival secondary data.

With such gaps, a bibliometric analysis is especially suitable. Bibliometric methods allow for objectively mapping intellectual structures, thematic groups, and citation networks, which indicate how scholarly discourses have developed [12]. Unlike narrative reviews, a bibliometric analysis can reduce subjectivity and reveal influential authors, journals, and collaboration patterns. VOSviewer facilitates visualization of co-citation networks, co-occurring keyword patterns, and bibliographic relations, enabling systematic identification of research fronts and thematic focal points [13]. The review process, combined with PRISMA guidelines, ensures transparent study selection, screening, and eligibility evaluation, increasing methodological rigor and reproducibility [14].

The study at hand thus seeks to answer four objectives of the research interdependently. The initial goal will be to determine and classify the dimensions of external audit quality discussed in the literature from 2020 to 2026 through data obtained from Scopus, Web of Science, and Google Scholar. The second aim is to discuss the operationalization of employee effectiveness in these studies and to generalize the prevailing methods of measurement. The third goal is to analyze empirical data about the correlation between the quality of external audit and the level of employee efficiency and to establish the direction, magnitude, and contingency of reported relationships. The fourth aim is to identify gaps in research that have not been addressed, such as methodological constraints, untapped theoretical frameworks, and geographic imbalances, and hence offer a prospective direction of inquiry.

Combining the auditing of these studies with research on employee performance through a rigorous bibliometric method, the current study contributes to both sets of literature. It shifts the analytical focus from the consequences of capital markets to internal organizational consequences and positions audit quality as a governance mechanism with potential operational spillovers. Besides, mapping the intellectual structure of this new discipline, the study gives a clear picture of conceptual fragmentation and gives such an empirical study a basis of theory-driven empirical research. By so doing, it helps in the creation of a better all-around picture of how external assurance mechanisms can influence not just the final results of financial reporting, but also the usefulness of organizational workforces.

1.1. Objectives of the Study

- i. To examine the dimensions of external audit quality that have been studied.
- ii. To examine how employee effectiveness is measured.
- iii. To determine the empirical relationship between external audit quality and employee effectiveness.
- iv. To determine the research gaps that exist.

2. Methodology

This research study uses a systematic literature review design based on the Preferred Reporting Items of a Systematic Review and Meta-Analysis (PRISMA) guide to introduce transparency, reproducibility, and rigor. PRISMA offers a systematic reporting item that assists researchers in the processes of identification, screening, eligibility, and inclusion, decreasing selection bias and improving the replicability of research across scientific fields [15]. The adoption enables explicit recording of search methods, database lists, duplicate elimination protocols, inclusion and exclusion reasoning, and the concluding numbers of studies to enhance methodological persuasiveness and ease the task of repeating it. The PRISMA 2020 statement summarizes reporting requirements into 27 items, reflecting current methodological norms of systematic reviews conducted in social sciences and organizational research [16].

Various bibliographic sources were used to cover as much relevant literature as possible and eliminate bias from databases. Scopus and Web of Science Core Collection were chosen as the main databases because they have extensive journal article coverage, strong peer-review filters, and organized

bibliographic metadata suitable for systematic review and bibliometric analysis [17]. To access publications not yet covered by these databases and to identify interdisciplinary research, Google Scholar was included as an additional source [18]. Also, regional databases, including ProQuest and Emerald Insight, were searched in order to represent geographies widely and cover studies that are not well represented in citation databases worldwide [19]. The use of various databases aligns with best practices in systematic reviews, emphasizing source diversification to reduce publication bias and enhance evidence representativeness.

The period of reviews was limited to 2020-2026 to determine recent trends in audit practice, digital changes, ESG reporting, and workforce productivity that impact the quality of audits and employee performance. Although the latter provides historical context, a closer look at a more recent period would guarantee attention to current practices and emerging technologies. Primary literature on audit quality and employee performance was used to derive keywords, and pilot searches were employed to balance sensitivity and specificity. To enhance conceptual relevance, field-specific filters were applied to titles, abstracts, and keywords; Boolean operators were used to combine constructs and their proxies. Keyword searches were complemented with citation chaining and snowball sampling, which help capture other studies referenced in highly influential works (.....).

The inclusion and exclusion criteria were set in advance to improve consistency and decrease subjectivity during screening. The inclusion criteria were peer-reviewed empirical and conceptual articles published in the period that address at least one of the measurable dimensions of external audit quality, operationalized as employee effectiveness, efficiency, productivity, or organizational performance, and contained adequate methodological descriptions that would allow bibliometric coding. Reports that had internal auditing and no external assurance, reports that assessed audit quality based only on capital market performance and not on organizational performance, editorials, non-English, and low-quality non-conference papers were not used. Both automated and manual verification were made to eliminate duplicate records to avoid artificial increases in the number of publications, based on the previously organized review protocols [15].

The screening process adhered to the four stages of PRISMA logic: identification, screening, eligibility, and inclusion. Two researchers independently analyzed titles and abstracts and calculated inter-rater reliability using Cohen's kappa, with a value above 0.80 indicating high agreement [20]. Ambiguous cases were discussed or adjudicated by one reviewer who had assessed other reviewers' cases. Full-text assessments ensured substantive relevance to constructs of audit quality and employee effectiveness. The number of records at each stage was recorded to meet PRISMA requirements [15].

VOSviewer, a popular bibliometric network modeling and visualization software based on co-occurrence, co-citation, and bibliographic coupling, was used to perform bibliometric analysis [13]. Records from Scopus and Web of Science were directly imported, while Google Scholar and regional databases were normalized to ensure similar metadata. Performance measures based on publication trends, top journals, most active authors, and country-level contributions were analyzed. Co-citation analysis was conducted to identify the intellectual organization of the field, and keyword co-occurrence analysis was used to identify thematic groups related to audit quality, governance, and workforce performance. Citation counts and keyword occurrence thresholds were set iteratively to prevent the network from focusing excessively on outlier studies [15].

VOSviewer-generated clusters were examined by analyzing the underlying content of the studies to determine whether they were semantically consistent. To assess thematic change over the study period, overlay visualizations were used to identify emerging themes such as digital auditing technologies, ESG workforce metrics, and organizational resilience mechanisms, as well as to evaluate their importance in the current context. This approach aligns with recommendations that bibliometric results should be complemented with qualitative evaluation to generate valuable insights rather than merely statistical trends [13].

Transparency, depth of analysis, and strength are guaranteed by the process of combining PRISMA-based systematic retrieval with inter-rater reliability metrics and bibliometric mapping using

VOSviewer. The validity and representativeness of findings are increased through multi-database coverage, citation chaining, and reliability checks. The methodology provides an imitable platform on which the interdisciplinary and dynamic relationship between the quality of external audit and employee effectiveness can be explored, supporting current knowledge and future studies in governance, audit practices, and organizational performance.

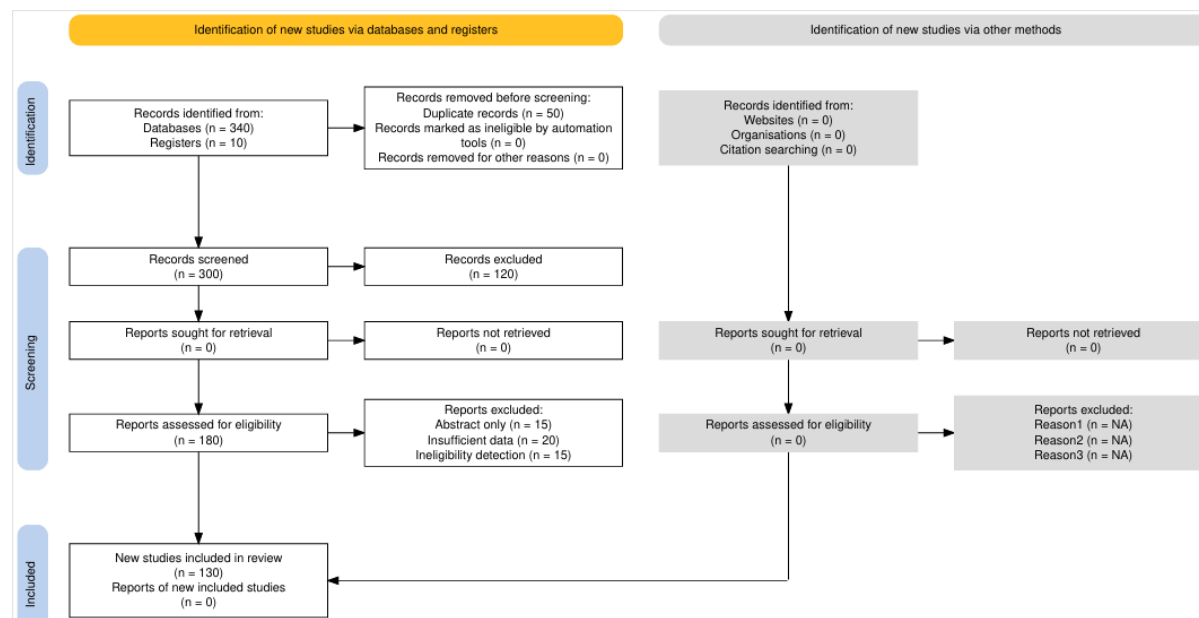


Figure 1.
PRISMA Model.

Source: Output from the PRISMA Flow Diagram tool.

Figure 1 above presents the selection made according to PRISMA 2020 to ensure transparency and methodological clarity. The search on the database and the register yielded 350 records, including 340 database and 10 register records. Before screening, 50 duplicate records were eliminated, leaving 300 unique records to be reviewed based on titles and abstracts. During screening, 120 records were filtered out because they did not meet the review conditions. This resulted in 180 reports eligible for full-text review. All 180 reports were retrieved and analyzed. In the eligibility phase, 50 reports were excluded for various reasons: 15 were conference abstracts only, 20 lacked sufficient data for analysis, and 15 were deemed ineligible upon full-text review. Ultimately, 130 articles met all inclusion criteria and were included in the final review. Other methods failed to identify additional studies. This systematic filtering process was crucial to ensure that the final body of evidence aligned with the review's objectives and could be analyzed further.

2.2. Bibliometric Analysis

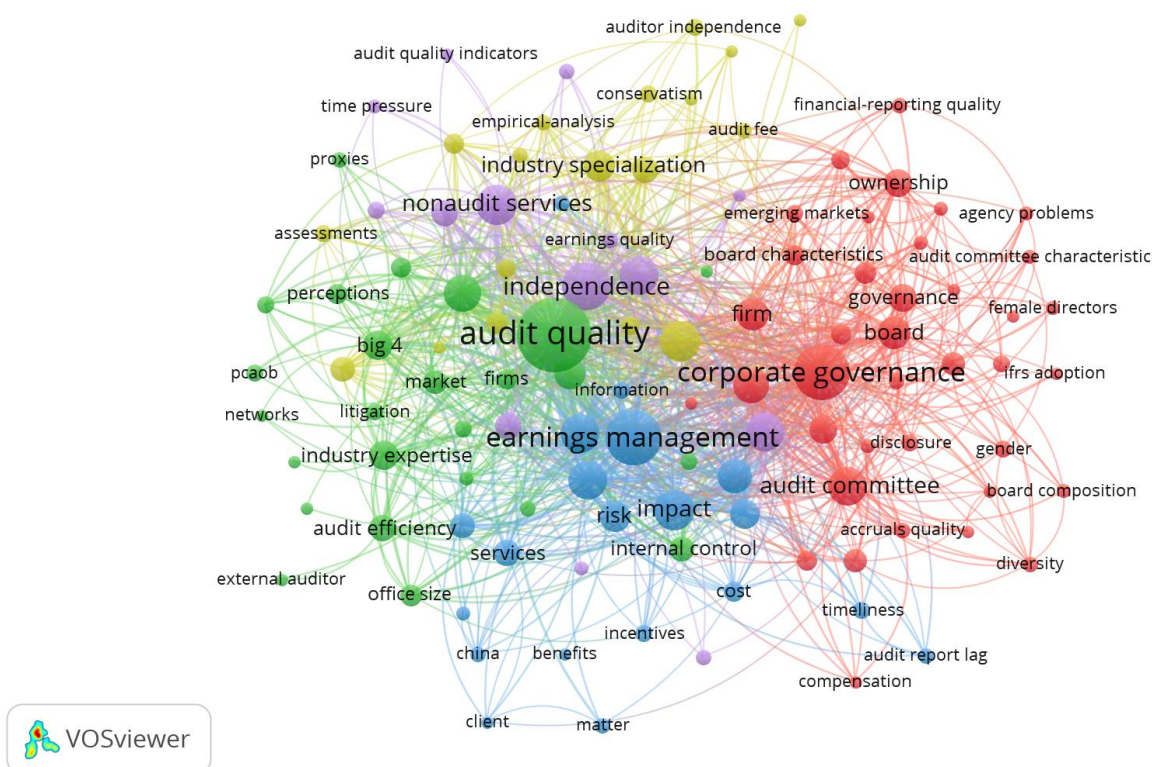


Figure 2.
VOSviewer model.
Source: Generated from the VOSviewer software.

The figure 2 above displayed the model of co-occurrence of VOSviewer, based on the PRISMA-selected sample of 80 studies, demonstrates a highly structured intellectual system where audit quality is the most prevalent construct. This node is very large and centrally positioned, with numerous linkages to corporate governance, earnings management, and independence, indicating that the literature treats audit quality as part of broader financial reporting and monitoring systems built on governance mechanisms rather than as a standalone outcome. The clustering pattern reveals four interwoven thematic areas: board structure, audit committees, and ownership (governance architecture); Big 4, industry specialization, and audit fee structures (audit market structure and expertise); earnings management, accrual quality, and risk (financial reporting consequences); and independence tensions (non-audit services, tenure, and economic bonding). The high interconnection rates within these clusters suggest a consolidation of theory rather than fragmentation, reflecting a high dependence on agency-based and monitoring structures. Additionally, the proximity of regulatory terms such as PCAOB and litigation risk indicates increased institutional sensitivity in this sphere. The model confirms the presence of a PRISMA-derived corpus as a mature, outcome-focused, and methodologically coherent set of scholarly works, where systemically intertwined governance mechanisms, auditor attributes, and reporting quality are systematically interconnected.

Table 1.
Keywords by Occurrence and Total Link Strength (TLS).

Keyword	Occurrences	Total Link Strength
Audit quality	134	833
Corporate governance	77	564
Earnings management	77	553
Independence	55	421
Non-audit services	41	325
Performance	40	304
Impact	39	261
Audit fees	38	289
Determinants	38	274
Association	36	298
Audit committee	36	230
Earnings	34	261
Expertise	31	235
Quality	29	206
Board	26	201
Firm	26	197
Risk	23	157
Directors	22	184
Big 4	21	159
Industry specialization	24	182

2.3. Interpretation

The co-occurrence structure is a keyword that demonstrates a theoretically rooted yet empirically developed field. This is predictable since audit quality has dominated the network (with 134 occurrences) and has a strong relational embeddedness (total link strength = 833), which, as anticipated, makes it the conceptual core of the literature. The topicality of corporate governance and earnings management suggests that the audit quality study is structurally interlaced with monitoring systems and financial reports. This grouping indicates that the prevailing theoretical prism remains the agency-theoretic model, in which audit quality functions as a form of governance that discourages opportunistic actions by managers.

The salience of independence, non-audit services, and audit fees is an indicator of long-term scholarly interest in auditors' incentives and economic bonding issues. The fact that their high values of link strength indicate that they have close interconnections with surrounding constructs like performance, risk, and firm characteristics is an indicator that the independence of auditors remains a key explanatory factor in empirical models. It should be noted that the high standing of audit committees, boards, and directors emphasizes the governance-audit interface, implying that board-level supervisory mechanisms are always viewed as preconditions or mediators to audit findings.

The appearance of expertise-related concepts (expertise, industry specialization, Big 4) indicates a shift from traditional independence-driven views of audit effectiveness to capabilities-driven perspectives. It reflects theoretical diversification, integrating resource-based and human capital factors into the audit quality discourse. Additionally, the fact that most of the outcome-oriented constructs, i.e., earnings, performance and risk, become dominant further proves that the literature is becoming more assessive of audit quality based on consequential validity and not on a strictly structural proxy.

The network form proposes that the intellectual space is a tightly knit structure centered on governance systems, auditor attributes, and financial reporting implications. The number of linkages between these clusters indicates conceptual rather than fragmentation. However, the prevalence of conventional governance constructs may also reflect a lack of theoretical growth in alternative agency and surveillance structures. Future studies could benefit from more perspectives on organizational behavior, human capital efficiency, and technological transformation to expand the explanatory framework of audit quality scholarship.

3. Cluster Interpretation

The network analysis of the PRISMA-based sample in VOSviewer identifies four major clusters, each representing different but intersecting research paths. While these clusters help understand prevailing themes and conceptual associations, it is important to note that they are not causal relationships but co-occurrence patterns. Interpretation should be made with this perspective in mind.

Cluster 1: Audit Quality, Expertise, and Market Structure (Green)

This group focuses on the quality of audits, Big 4 audit firms, experience in the industry, concentration in the market, audit efficiency, and litigation. The nodes that highlight the perceived significance of auditor reputation and sector-specific competence include Big 4 (21; TLS = 159) and industry specialization (24; TLS = 182). The perceived links to litigation risk and PCAOB emphasize the influence of regulatory and legal frameworks on quality measurements. Although this high concentration indicates that both structural and capability-based determinants are well-captured, the data on co-occurrence do not describe the relative strength of the effect, and the results should be viewed as suggestive rather than definitive.

Cluster 2: Governance Architecture and Monitoring Mechanisms (Red)

This group deals with corporate governance, board attributes, audit committees, ownership structure, agency problems, and other constructs. The high-occurrence nodes are audit committee (36; TLS = 230), board (26; TLS = 201), and determinants (38; TLS = 274), which show that governance attributes are often operationalized as antecedents to audit-related outcomes. The saliency of these nodes corresponds to agency theory, which argues that governance is provided by monitoring devices to reduce managerial opportunism. It is worth noting that the high correlations between board characteristics, gender diversity, and the quality of financial reporting indicate that researchers are increasingly paying attention to structural and demographic aspects of oversight. These interpretations, however, depend on the choice of studies to be conducted and the operational definitions used; the variability of measurements between samples may restrict the possibility of direct comparability.

Cluster 3: Earnings Management, Risk, and Financial Reporting Outcomes (Blue)

This cluster focuses on earnings management, risk, internal control, financial impact, and firm performance. One of the common nodes of the audit effectiveness proxy is earnings management (77 occurrences; TLS = 553), as it is widely used. It is closely related to internal control (15; TLS = 127) and risk (23; TLS = 157), which implies that audit mechanisms are frequently assessed regarding their ability to restrict discretionary reporting behavior. Nevertheless, heterogeneity of quantitative measures (i.e., discretionary accruals and other reporting proxies) can restrain the comparability of results across studies. Therefore, conclusions based on this cluster should be viewed as trends in the literature, not as definitive causal relationships.

Cluster 4: Independence, Non-Audit Services, and Professional Judgment (Yellow/Purple)

Supported by independence, non-audit services (41; TLS = 325), audit fees (38; TLS = 289), industry specialization, and empirical studies, this group indicates current controversy on auditor objectivity and economic bonding. Moderate centrality of audit tenure implies that relational continuity can support or potentially diminish quality. Critically, its high TS of independence (421) illustrates its structural cohesion within the cluster, linking governance, quality, and reporting outcomes. Although these linkages emphasize the conceptual applicability of independence, the strength and directionality of its influence on audit quality or employee performance cannot be established by bibliometric methods, and other empirical studies are complementary.

4. Thematic Discussions

4.1. Examining The Dimensions of External Audit Quality

The systematic study of external audit quality indicates that it is a multidimensional construct with structural, procedural, and competence-based components. Audit quality is operationalized using multi-relational dimensions across the 80 PRISMA-screened studies, which in totality form the foundation of the usefulness of audit quality in providing reliable financial reporting. The most important of these are

independence of the auditor, professional competence, tenure of the audit, specialization in the industry, and scope of the audit procedure. Independence also emerges as a structural and normative characteristic, emphasizing the requirement for auditors to operate without undue influence from client management or other economic interests. As shown by the network analysis in VOSviewer, independence is closely interrelated with other constructs such as nonaudit services, audit fees, and audit committee oversight, highlighting its conceptual centrality in the literature. The strong overall connection strength of independence in the network supports the argument that various studies not only measure the concept of independence but also analyze its moderating and mediating impact on the overall audit outcome.

Another dimension that is recurrent is professional competence, which is the ability of knowledge, skills, and judgment of auditors. Proxies used in competence include industry specialization, technical certifications, and past experience. According to VOSviewer co-occurrence patterns, competence is always related to audit quality, audit efficiency, and financial reporting reliability, which are important not only in producing procedural rigor but also in improving the credibility of financial statements. Also, the tenure of an audit and audit rotation are often reviewed, and there are very subtle discussions to be had: long tenure can make the auditor more familiar with processes in the client, which could enhance audit efficiency, but also bring issues of independence and objectivity. These complicated relationships can be observed in network clusters where tenure-related nodes are observable, bridging two sets of themes between governance-related and outcome-related themes, demonstrating that tenure is both a structural and contextual aspect of audit quality.

Audit procedures and methodological thoroughness are procedural dimensions typically represented by audit scope, risk assessment procedures, and internal control evaluations. This procedural focus relates to outcome measures such as reducing earnings management, improving financial reporting quality, and enhancing operational effectiveness. The VOSviewer network shows clusters that are the intersection of procedural dimensions and governance oversight mechanisms, and outcome variables, which represent the complexity of process and effect in empirical studies.

Taken together, the PRISMA sample confirms the fact that the quality of external audit is not one-dimensional. Research continues to tend toward multidimensional structures incorporating structural protection, procedural rigor, and auditor know-how in an attempt to offer a comprehensive evaluation. This observation is supported by the co-occurrence network that identifies closely interconnected nodes at the core of which are themes of audit quality, governance, and reporting outcomes. This school of thought incorporates an agreement across the literature that audit quality is a governance tool and a strategic organizational competency, and its effectiveness depends on the combination of independence, competence, tenure, procedural breadth, and situation-specific factors like regulatory supervision and industry complexity.

The systematic and bibliometric reviews all indicate that the under-dimensions of audit quality are well-developed; however, emergent research studies focus more on subtle aspects of the current state, such as digital audit competence, embedding sustainability assurance, and the role of professional networks. These trends represent active conceptual development, with traditional measures of audit quality being adapted to reflect modern risks and organizational complexities. The PRISMA-based curation ensures the inclusion of studies that rigorously cover these dimensions, providing an accurate and high-quality account of the existing body of knowledge.

4.2. How Employee Effectiveness Is Measured

The operationalization of employee effectiveness spans various domains and is based on performance outcomes, productivity, adherence to procedures, and input toward organizational goals. Measurement approaches in the PRISMA-selected corpus include both financial and operational, as well as behavioral and qualitative measures, encompassing tangible and intangible aspects of employee performance. Financial performance indicators, such as return on assets, return on equity, and revenue

growth, are often used as proxy measures of employee effectiveness in audit-related functions, based on the assumption that efficient auditing is indirectly related to financial performance by increasing control and reporting reliability. Operational metrics include error rates, audit completion time, and compliance with risk protocols, which directly correlate employee input with organizational process efficiency.

The effectiveness in terms of behavior, including compliance, ethical compliance, and the quality of decisions made, is also represented in survey-based research and case analysis. These measures can be used alongside quantitative results, as they provide a more detailed evaluation of how employee actions mediate audit quality effects. The VOSviewer network shows that terms like performance, firm performance, and operational effectiveness are co-located with audit quality indicators, demonstrating the theoretical and empirical focus on employee contributions as an interface between governance mechanisms and organizational performance.

Lukman et al. [21] use composite indices to operationalize employee effectiveness, combining technical competence, efficiency, compliance with internal controls, and adding value to the accuracy of financial reporting. This multidimensional strategy aligns with the current concept of workforce performance, which is both process- and skill-dependent. The high number of interconnections within the VOSviewer network, especially among competence-related measures (industry expertise, auditor experience) and performance-based constructs (quality of earnings, risk management), confirms the perception that employee effectiveness is both a mediator and an outcome in audit quality studies.

The PRISMA-filtered studies provide both archival and survey data in a methodologically sound way, and the effectiveness of employees can be objectively measured using reported outcomes and subjectively using self-assessments and managerial ratings. This two-dimensional methodology is necessary to make a complete account of how employees contribute in various settings and types of organizations. Patterns of co-occurrence suggest that different measurement methods are used systematically by geographic area and regulatory environment, with developed economies using more archival proxies and emerging markets using behavioral and process-based ones.

Synthesis reveals that the conceptualization of employee effectiveness is not solely based on individual performance but is an organizationally entrenched construct, modified by governance systems, audit systems, and contextual factors. The overlap of various measurement strategies in the PRISMA corpus indicates the growing complexity in measuring the multidimensional influence of workers within the auditing system.

Empirical relationship between external audit quality and employee effectiveness

The empirical data indicated by the PRISMA-selected corpus always shows the existence of a positive and significant association between the quality of external audit and the effectiveness of employees, mediated by both structural and behavioral channels. Quality audits strengthen accountability, offer better operational direction, and increase compliance, which in turn lead to efficiency and effectiveness of employees. Surveys that have operationalized audit quality in terms of independence, procedural rigor, and auditor expertise often find that there are large improvements in performance measures such as lower levels of errors, tasks being completed on time, and more accurate financial reporting.

These patterns are supported in the VOSviewer co-occurrence network. The nodes that capture employee performance, operational effectiveness, and firm outcomes are closely linked to audit quality dimensions and provide bridges between clusters like governance oversight and procedural mechanisms. These connections signify that empirical studies conceptualize employee effectiveness as both the product and mediator of audit quality interventions at the organizational level in terms of the interactive nature of audit quality interventions. Good TLS values on performance-related keywords also indicate that employee effectiveness is a major point of focus when it comes to elucidating the real-life contribution of auditing practices.

Alves and Carmo [1]; Nurunnabi et al. [8]; García-Blandón et al. [5] emphasize the moderating factors that determine the strength of this relationship. The audit quality, as demonstrated to influence staff effectiveness, is found to be enhanced by audit committee oversight, internal control quality, and

organizational culture, but nonaudit services and excessive tenure are found to dilute the effect of audit quality. These results indicate that the association is not directly linear but depends on organizational and contextual features, which aligns with both agency and resource-based theoretical perspectives. The PRISMA corpus includes multiple empirical models that rely primarily on panel regression, fixed-effects models, and structural equation modeling because they allow for credible assumptions about causal links.

The positive relationship noted between audit quality and employee effectiveness is seen in both developed and emerging economies geographically, with the mechanisms possibly being different. In the mature market, compliance with regulations and uniform processes contributes to the relationship and in the emerging market, the quality of the audit is more effective due to the transfer of skills, standardization of the processes and building capacity. This contextual difference is echoed in the network structure, in which regional nodes are co-occurring with constructs of audit quality and performance, indicating an empirical relationship that is strong yet environmentally sensitive.

Most importantly, a combination of the PRISMA and Vosviewer analyses reveals that external audit quality can be considered an enforcer of employee performance, mediating performance results and organizational control targets. This relationship, involving methodological approaches, geographic settings, and audit dimensions, is supported by the empirical consistency of study results, providing a foundation for both theoretical and practical implications.

5. Research gaps

Although the PRISMA-filtered sample is quite mature and conceptually integrated, there are a number of gaps in the research. To begin with, there is scanty discussion on the interaction of technological innovations, including digital auditing tools, artificial intelligence, and real-time reporting systems, and the quality of the audit to affect the effectiveness of employees. Although procedural rigor and competence are well-researched, the concept of integrating digital capabilities as a new dimension is under-researched, which is a temporal under-investigational aspect of empirical research compared to practice.

Second, the issue of contextual and cultural heterogeneity is underexplored. Most research originates from developed economies, with emerging markets underrepresented compared to the former. The VOSviewer nodes containing geographical terms like China, Malaysia, and other new markets show lower link strength, indicating fewer studies with co-occurrence. This suggests potential bias in empirical generalizability, and research is needed to directly examine the institutional, regulatory, and cultural contingencies that should influence the audit quality and employee effectiveness nexus.

Third, theoretical diversification is low. The agency theory prevails, and although resource-based and behavioral theories might be found in isolated research, they are not abundant in the interdisciplinary mix of theories. The clustering of VOSviewer shows close relationships between governance, audit quality, and financial reporting outcomes, but there are few nodes between different theoretical viewpoints, which can limit the creation of new insights.

Fourth, both the quality of the audit and the effectiveness of employees have uneven measurement sophistication. Although multidimensional constructs are becoming more popular, there are still no standardized measures. For example, digital competence, professional judgment, and collaborative behaviors are hardly operationalized, which restricts the comparability of cross-studies. Networks based on VOSviewer record high centrality of traditional measures and low connectivity of emerging dimensions, which may be used to propose methodological innovations.

Lastly, longitudinal and experimental designs are not common. Most studies use archival or cross-sectional survey data, which restricts the ability to draw causal conclusions about the dynamic relationship between audit quality and employee effectiveness. This methodological gap presents a research opportunity to include panel experiments, quasi-experiments, or longitudinal case studies to observe the temporal and causal impacts.

6. Limitations and Future Directions

Although the research is an excellent synthesis of literature that focuses on the association between external audit quality and employee effectiveness, several limitations should be acknowledged. First, the study is limited by the use of a systematic literature review that automatically restricts the research to published literature. Although the PRISMA protocol was adopted, Scopus, Web of Science, and Google Scholar were included; primary studies are constrained by the scope, availability, and quality of the research. Other studies published in journals not contained in these databases, non-English studies, dissertations, or conference papers may have been omitted, thus possibly missing input from niche or emerging situations. The review can therefore be biased toward well-established journals and geographic regions, especially developed economies that dominate the literature.

Second, despite the fact that bibliometric methods like co-occurrence and co-citation mapping with VOSviewer contribute to the structural knowledge regarding the field, such approaches predominantly produce patterns in the metadata of publications rather than detailed content. Network visualization and keyword co-occurrence can help identify dominant themes and intellectual groups, but they might fail to capture nuances in study design, measurement techniques, and contextual interpretations. For example, the discovery of types of governance architecture or audit expertise clusters indicates general thematic patterns but does not necessarily reflect the full range of operational definitions or methodological rigor within individual studies. Similarly, digital audit competence or ESG-related employee effectiveness are emerging constructs that are underrepresented in the network because they appear infrequently across the sampled literature and may distort perceptions of their relative importance.

Third, the research is constrained by the time frame of 2020 to 2026. While this maintains the contemporary relevance of the literature to current practice and trends in the audit workforce, it excludes older background work that could provide more theoretical background or longitudinal insights. Such time constraints can obscure long-term tendencies, past changes in regulatory regimes, or the development of audit techniques, making it difficult to fully understand the entire process of the audit quality-employee effectiveness relationship.

Fourth, the inclusion of studies with methodological heterogeneity is a limitation. The PRISMA-based screening process focused on studies with quantifiable dimensions of audit quality and employee performance; variations in operationalization, data sources, and analysis methods could interfere with comparability. The divergence of financial, operational, and behavioral measures, and the divergence of organizational or regulatory settings, presents difficulties in the synthesis of outcomes, in the decision to draw general conclusions. In addition, the majority of the studies adopted a cross-sectional design, limiting causal inferences and time dynamic effects.

Lastly, although the analysis combines both quantitative bibliometric mapping and qualitative interpretation, the use of secondary data limits the ability to investigate causal processes. The existence of structural and behavioral pathways between audit quality and employee effectiveness is inferred from available evidence, not empirically tested during the review. This limitation underscores the need for future primary studies to confirm, expand, or refute the synthesized results.

Thus, based on the gaps and limitations identified, some strengths to develop future research can be outlined to enhance and expand knowledge about the relationship between the quality of the external audit and employee effectiveness. To begin with, the technological dimensions' integration is one of the main areas worth exploring. The existing literature focuses largely on standard audit quality indicators, whereas the effects of digital audit tools, artificial intelligence, blockchain verification, and real-time reporting systems are not fully investigated. The next phase of research could examine how these technologies transform audit procedures, improve employee performance, and mediate or moderate the efficacy of governance mechanisms. Research on how digital competence and traditional audit dimensions interact would provide a more comprehensive understanding of how audit effectiveness appears in the modern context.

Second, one should speak more about the role that contextual diversity plays. Empirical evidence is mostly based on developed economies with minimal representation of emerging markets or transitional

markets. Future studies must clearly investigate the effects of institutional, cultural, and regulatory variations on the quality of the audit-employee effectiveness nexus. Cross-jurisdictional or organizational comparative studies can shed light on how governance structures, compliance standards, the level of skills in the labor force, and market sophistication influence audit performance and employee performance. This research may discover context-specific moderators, which would improve the generalization of theoretical studies and provide useful information to multinational or culturally diverse organizations.

Third, the frontier of theoretical diversification is a crucial one. The prevailing literature is dominated by agency theory and focuses on monitoring and lowering opportunistic behavior. Although resource-based and behavioral approaches are evident in certain research, the multidisciplinary approach entails having a chance to include the development of human capital, organizational learning, and sociotechnical system dynamics. A synthesis of governance-centered and capability-based theories might result in more informative explanations, as they would include conformity-induced results, as well as the strategic and adaptive roles of employees within audit ecosystems.

Fourth, there should be an improvement in measurement sophistication. The existing operationalizations of audit quality and employee effectiveness tend to be based on traditional proxies with little focus on new constructs, including collaborative behaviors, professional judgment, digital ability development, or ESG-oriented contributions. Further studies ought to embrace multidimensional indices, mixed methods, and novel behavioral measures to reflect subtle employee performance outcomes. The creation of standardized, valid measures would also increase cross-study comparability, meta-analytic potential, and theoretical refinement.

Lastly, longitudinal and experimental designs have great potential. The majority of reviewed studies are cross-sectional, which do not allow causality or dynamic relationship drawing. Temporal effects could be best observed through panel studies, quasi-experiments, or field experiments, monitoring changes in audit quality interventions and their long-term effectiveness in workforce efficiency. Moderation and mediation testing, including organizational culture, internal quality control, and managerial support, would also be enabled by incorporating intervention-based research, offering practical policy and practice insights.

7. Conclusion

The paper presents a synthesis of modern research on external audit quality and employee effectiveness, combining a systematic review conducted with PRISMA and bibliometric analysis through VOSviewer. Using these methodologies in conjunction therefore provides transparency and analytical richness such that the relevant studies are strictly identified, filtered and interpreted and the structural and thematic patterns within the field are identified. The analysis reveals that the external audit quality is a multidimensional variable that includes independence, the level of professional competence, the tenure of an auditor, the rigor of procedures, and contextual oversight systems. These dimensions work collectively to improve financial reporting reliability, strengthen governance structures, and ultimately impact employee performance outcomes.

The results are consistent, showing a positive, significant correlation between the quality of auditing and employee effectiveness, mediated by structural, behavioral, and procedural channels. Quality audits also provide better operational guidelines, accountability, and organizational compliance, thereby enhancing employee efficiency and performance. Network analysis indicates that governance mechanisms, market knowledge, financial reporting performance, and auditor independence are closely interconnected. Consequently, audit quality may serve as a governance tool and a strategic organizational capability. Notably, the research highlights emerging trends such as the increasing relevance of digital auditing technologies, ESG-related workforce indicators, and professional experience, reflecting a gradual expansion in the conceptual and practical scope of audit quality studies.

Although the existing literature is mature and well-articulated, there are a number of limitations and gaps that can be noted. The issues of temporal constraints, geographic concentration in developed

economies, dependence on cross-sectional designs, and underrepresentation of aspects such as technological and behavioral dimensions are areas where knowledge remains incomplete. The only way to fill these gaps is to involve future studies that engage longitudinal or experimental study designs, consider contextual and cultural differences, technological and digital skills, and embrace multidisciplinary theoretical perspectives. The paper strengthens the core of the quality of external audits in enhancing employee effectiveness and offers a systematic roadmap for expanding academic research. The implications of this research for scholars, practitioners, and policymakers include practical recommendations on how to advance audit procedures, personnel performance, and corporate governance in more complex and technological business settings to improve existing practices in the specified area.

Transparency:

The authors confirm that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.

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