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Internal Audit Effectiveness and Financial Risk Management: A Systematic Literature Review

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Abstract

Internal audit effectiveness is a major governance mechanism for strengthening financial risk management. However, the literature remains fragmented, as prior studies often examine internal control, governance, fraud, financial reporting quality, or audit technologies separately, without providing an integrated synthesis of their interactions. This study addresses this gap through a systematic literature review based on the PRISMA protocol. Searches conducted in Scopus and Web of Science for the 2015–2026 period resulted in a final corpus of 45 articles, including 25 from Scopus and 20 from Web of Science. The descriptive analysis reveals a strong predominance of quantitative empirical research, accounting for 42 articles, or 93.3% of the corpus, compared with two qualitative theoretical studies (4.4%) and one methodological modeling study (2.2%). The thematic coding identifies four dominant areas: governance, audit committees, and risk committees (16 articles; 35.6%); internal audit, internal control, risk management, and fraud (13; 28.9%); reporting quality and audit outcomes (11; 24.4%); and technology, cybersecurity, innovation, and sustainability (5; 11.1%). The findings confirm an overall positive contribution of internal audit to financial risk management, while showing that its effectiveness depends on governance quality, auditors' competencies, organizational maturity, and institutional context. This review therefore provides a structured overview of the field and identifies several avenues for future research.

Keywords: Internal audit; internal audit effectiveness; financial risk management; internal control; corporate governance; systematic literature review; PRISMA.
JEL Classification: M42; G32; G34
Paper type: Theoritical Research

Résumé

L'efficacité de l'audit interne constitue un levier majeur de gouvernance et de maîtrise des risques financiers. Toutefois, la littérature demeure fragmentée, les travaux antérieurs examinant souvent séparément le contrôle interne, la gouvernance, la fraude, la qualité de l'information financière ou les technologies d'audit, sans proposer une synthèse intégrée de leurs interactions. Cette étude vise à combler cette lacune au moyen d'une revue systématique de la littérature fondée sur le protocole PRISMA. Les recherches menées dans Scopus et Web of Science sur la période 2015–2026 ont conduit à un corpus final de 45 articles, dont 25 issus de Scopus et 20 de Web of Science. L'analyse descriptive montre une nette prédominance des recherches empiriques quantitatives, qui représentent 42 articles, soit 93,3 % du corpus, contre deux études théoriques qualitatives (4,4 %) et une étude méthodologique fondée sur la modélisation (2,2 %). Le codage thématique met en évidence quatre axes dominants : gouvernance, comités d'audit et de risque (16 articles ; 35,6 %) ; audit interne, contrôle interne, gestion des risques et fraude (13 ; 28,9 %) ; qualité du reporting et résultats d'audit (11 ; 24,4 %) ; technologies, cybersécurité, innovation et durabilité (5 ; 11,1 %). Les résultats confirment une contribution globalement positive de l'audit interne à la maîtrise des risques financiers, mais montrent que son efficacité dépend de la qualité de la gouvernance, des compétences des auditeurs, de la maturité organisationnelle et du contexte institutionnel. Cette revue propose ainsi une lecture structurée du champ et identifie plusieurs pistes de recherche futures.

Mots-clés: Audit interne ; efficacité de l'audit interne ; gestion des risques financiers ; contrôle interne ; gouvernance d'entreprise ; revue systématique de la littérature ; PRISMA.
Classification JEL: M42; G32; G34
Paper type: Recherche théorique

1. Introduction

Internal audit effectiveness has become a major concern for organizations operating in environments characterized by financial volatility, increasing regulatory requirements, digital transformation, and growing risk complexity. Organizations are consequently required to strengthen their internal control and risk management systems to preserve the reliability of financial information, prevent fraud, and support sustainable decision-making. Within this evolving context, internal audit is no longer confined to compliance verification. It increasingly performs an assurance and advisory role by assessing the adequacy of internal controls, identifying weaknesses in risk management processes, and supporting governance bodies in the supervision of organizational risks.

The contribution of internal audit to financial risk management nevertheless depends on its actual effectiveness. For the purposes of this review, internal audit effectiveness refers to the ability of the internal audit function to provide reliable assurance, formulate relevant recommendations, and contribute to the improvement of governance, risk management, and control processes. It is examined through several dimensions, including organizational independence and objectivity, auditors' competence and professional expertise, the adequacy of resources, the quality of audit planning and execution, the monitoring of recommendations, management support, and the use of modern audit technologies.

Financial risk management is also considered as a multidimensional process. It encompasses the identification, assessment, mitigation, and monitoring of financial risks, as well as the prevention of fraud, the strengthening of internal control, the reliability of financial reporting, and organizational resilience. Examining the relationship between internal audit effectiveness and financial risk management therefore requires moving beyond the mere existence of an internal audit function and assessing the mechanisms through which its characteristics influence specific risk-management outcomes.

Existing empirical studies generally support the contribution of internal audit, internal control, and enterprise risk management to the reduction of financial risks. The implementation of the COSO-ERM framework has, for instance, been associated with lower levels of fraudulent financial reporting in financial institutions (Abdul Rahman & Al-Dhaimesh, 2018). Risk-management mechanisms have also been found to contribute to the prevention of financial fraud in public enterprises (Novatiani et al., 2022). Other studies emphasize the importance of audit quality, proactive audit planning, ethical practices, management support, and the "tone at the top" in strengthening risk management and organizational accountability (Kabuye et al., 2019; Alhebri et al., 2024; Tanbour et al., 2025). Recent research further extends this relationship to continuous auditing, cybersecurity controls, technological innovation, and sustainability reporting. These different dimensions are represented in the corpus examined in the present review.

However, the findings remain heterogeneous. The contribution of internal audit appears to vary according to the sector of activity, the institutional and regulatory environment, the maturity of governance arrangements, the structure of audit committees, organizational culture, and the availability of human and technological resources. Moreover, the literature does not adopt a uniform definition or measurement of internal audit effectiveness. Some studies emphasize independence, competence, and audit quality, whereas others focus on governance support, internal control mechanisms, technological capabilities, or the implementation of audit recommendations. This conceptual and methodological diversity makes it difficult to establish a consolidated understanding of the conditions under which internal audit improves financial risk management.

Several literature reviews have already provided important foundations for internal audit research. Gramling et al. (2004) examined the internal audit function as a component of corporate governance. Lenz and Hahn (2015) synthesized empirical research on internal audit effectiveness, whereas Roussy and Perron (2018) organized post-Sarbanes–Oxley literature around the multiple roles, quality, and practices of internal audit. Behrend and Eulerich (2019) subsequently provided a bibliometric analysis of the evolution of internal audit research between 1926 and 2016. Nevertheless, these reviews adopt broader or differently oriented perspectives. To the best of our knowledge, they do not jointly examine recent evidence concerning the effects of specific dimensions of internal audit effectiveness on distinct financial risk-management outcomes, while simultaneously considering governance mechanisms, contextual contingencies, and emerging technological issues.

The present study addresses this gap by conducting a systematic literature review of research published between 2015 and 2026 and indexed in Scopus and Web of Science. Its originality lies in the integration of four complementary levels of analysis. First, it identifies the organizational and professional dimensions that determine internal audit effectiveness. Second, it examines the financial risk-management outcomes associated with these dimensions. Third, it analyzes the governance and organizational mechanisms through which internal audit contributes to risk management. Finally, it assesses how institutional, regulatory, sectoral, and technological factors explain the convergence or divergence of empirical findings. The study thereby provides an updated and structured synthesis of a fragmented field and develops an analytical framework for future empirical research.

Accordingly, the study addresses the following research questions:

RQ1: Which dimensions of internal audit effectiveness particularly independence and objectivity, auditors' competence, resource adequacy, audit planning and execution quality, follow-up practices, and technological capabilities are associated with the identification, assessment, mitigation, and monitoring of financial risks?

RQ2: Through which governance and organizational mechanisms particularly audit committee oversight, board supervision, management support, the "tone at the top," enterprise risk management, and internal control systems does internal audit effectiveness influence fraud prevention, financial reporting reliability, and financial risk management?

RQ3: How do sectoral characteristics, regulatory and institutional environments, organizational maturity, economic context, and technological development moderate the relationship between internal audit effectiveness and financial risk-management outcomes?

The remainder of the article is structured as follows. Section 2 presents the systematic review methodology, including the PRISMA protocol, the selection criteria, and the analytical coding framework. Section 3 reports the descriptive and thematic findings of the review and discusses the main points of convergence and divergence, interprets the findings, and outlines their theoretical and managerial implications. Finally, Section 4 presents the conclusions, limitations, and directions for future research.

2. Methodology of the Systematic Literature Review

2.1. Review design

This study adopts a systematic literature review approach based on the PRISMA 2020 guidelines (Page et al., 2021). This framework was selected to ensure methodological rigor, transparency, and reproducibility throughout the identification, screening, eligibility, inclusion, data-extraction, and thematic-analysis stages.

The review process comprised five successive stages: the identification of potentially relevant records, the application of temporal and documentary filters, the assessment of eligibility, the verification of duplicates, and the extraction and thematic analysis of the final corpus.

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2.2. Databases and search strategy

The literature search was conducted in two bibliographic databases: Scopus and the Web of Science Core Collection. These sources were selected because of their broad multidisciplinary coverage and their indexing of peer-reviewed scientific publications.
The searches were conducted on February 6, 2026. To ensure the reproducibility of the documentary search, the following search equations were applied:

Scopus:

TITLE-ABS-KEY ("internal audit effectiveness" AND "financial risk management")

Web of Science Core Collection:

TS = ("internal audit effectiveness" AND "financial risk management")
In Scopus, the search covered article titles, abstracts, and keywords. In Web of Science, the Topic field covered titles, abstracts, author keywords, and Keywords Plus. The Boolean operator "AND" was used to identify publications simultaneously addressing internal audit effectiveness and financial risk management.The publication period was restricted to studies published between 2015 and 2026. This temporal boundary was selected to provide an updated synthesis of the literature and to capture recent developments relating to governance, digitalization, cybersecurity, sustainability, and regulatory change.

2.3. Eligibility criteria and study-selection process

The identification phase resulted in 196 records, including 96 records from Scopus and 100 records from Web of Science.A first filter was applied according to the publication period. Only publications issued between 2015 and 2026 were retained. This temporal restriction reduced the corpus to 144 records, including 68 from Scopus and 76 from Web of Science.A second filter concerned document type. For Scopus, journal articles, reviews, and book chapters were considered, resulting in 62 records. For Web of Science, only journal articles were retained, resulting in 60 records. After this stage, the intermediate corpus consisted of 122 records.The eligibility criteria were subsequently applied to the titles, abstracts, and, where necessary, the full texts. Publications were considered eligible when they :addressed internal audit, internal control, corporate governance, financial reporting, fraud prevention, enterprise risk management, or financial risk management ;contributed directly or indirectly to understanding the relationship between audit effectiveness and financial risk management ; were published between 2015 and 2026;corresponded to the document types retained for each database ; were written in English; and were available in open access, allowing full-text consultation and detailed analysis.
The application of the English-language and open-access criteria reduced the corpus from 122 to 45 publications. Consequently, 77 records, representing 63.1% of the intermediate corpus, were excluded during these two combined filtering stages.Because exclusions relating to language and open-access status were not recorded separately in the initial screening file, it was not possible to determine retrospectively the exact proportion attributable exclusively to the open-access criterion. The rate of 63.1% should therefore be interpreted as the combined effect of the language and accessibility restrictions.The restriction to open-access publications ensured complete access to the selected studies and enabled an in-depth and homogeneous analysis of their objectives, methodologies, and findings. Nevertheless, this criterion may have introduced a selection bias by excluding relevant studies published in subscription-based journals. It may also have overrepresented journals, institutions, countries, or research fields with stronger open-access publication practices. Consequently, the findings of this review reflect the accessible literature indexed in Scopus and Web of Science rather than the entire scientific literature on internal audit effectiveness and financial risk management.The results

obtained from the two databases were subsequently merged. Duplicate verification was conducted using the DOI, article title, author names, and publication content. No duplicate was identified. The final corpus therefore consisted of 45 publications, including 25 from Scopus and 20 from Web of Science.

2.4. Screening procedure and reviewer involvement

The selection procedure was conducted at three successive levels: title screening, abstract screening, and full-text eligibility assessment. At each stage, the predefined inclusion and exclusion criteria were applied consistently to all records.The screening and coding procedures were conducted by a single reviewer using a standardized selection and extraction grid. Consequently, no inter-reviewer agreement coefficient, such as Cohen's kappa, was calculated.To reduce the risk of subjective selection and classification decisions, the same eligibility criteria were applied throughout the review process, and an audit trail was maintained in Microsoft Excel. The publications were systematically verified using their titles, DOIs, publication characteristics, research objectives, methodological approaches, and main findings.Nevertheless, the absence of independent double screening and inter-reviewer reliability assessment constitutes a methodological limitation and should be considered when interpreting the findings of the review.

2.5. Methodological quality assessment

The methodological characteristics of the included studies were systematically examined during the data-extraction process. Given the methodological diversity of the corpus, the appraisal framework was adapted to the nature of each study.For empirical studies, the assessment was informed by the principles of the Mixed Methods Appraisal Tool. The appraisal considered the clarity of the research objective, the appropriateness of the research design, the adequacy of the data sources or sampling strategy, the validity of the principal measurements, the relevance of the analytical procedures, the clarity of the reported findings, and the consistency between the results and conclusions.For theoretical and methodological studies, a complementary assessment considered the clarity of the research objective, the coherence of the conceptual or methodological framework, the transparency of the analytical procedure, the adequacy of the evidence supporting the conclusions, and the consistency between the analysis and the conclusions.The methodological appraisal was used to qualify the interpretation of the findings rather than to exclude publications or calculate an aggregated quality score. However, the initial extraction file did not contain all the detailed information required to conduct a complete article-by-article risk-of-bias assessment. Therefore, no formal numerical MMAT rating was assigned to the studies. The absence of a complete independent quality appraisal remains a limitation of the present review.

2.6. Data extraction and thematic coding

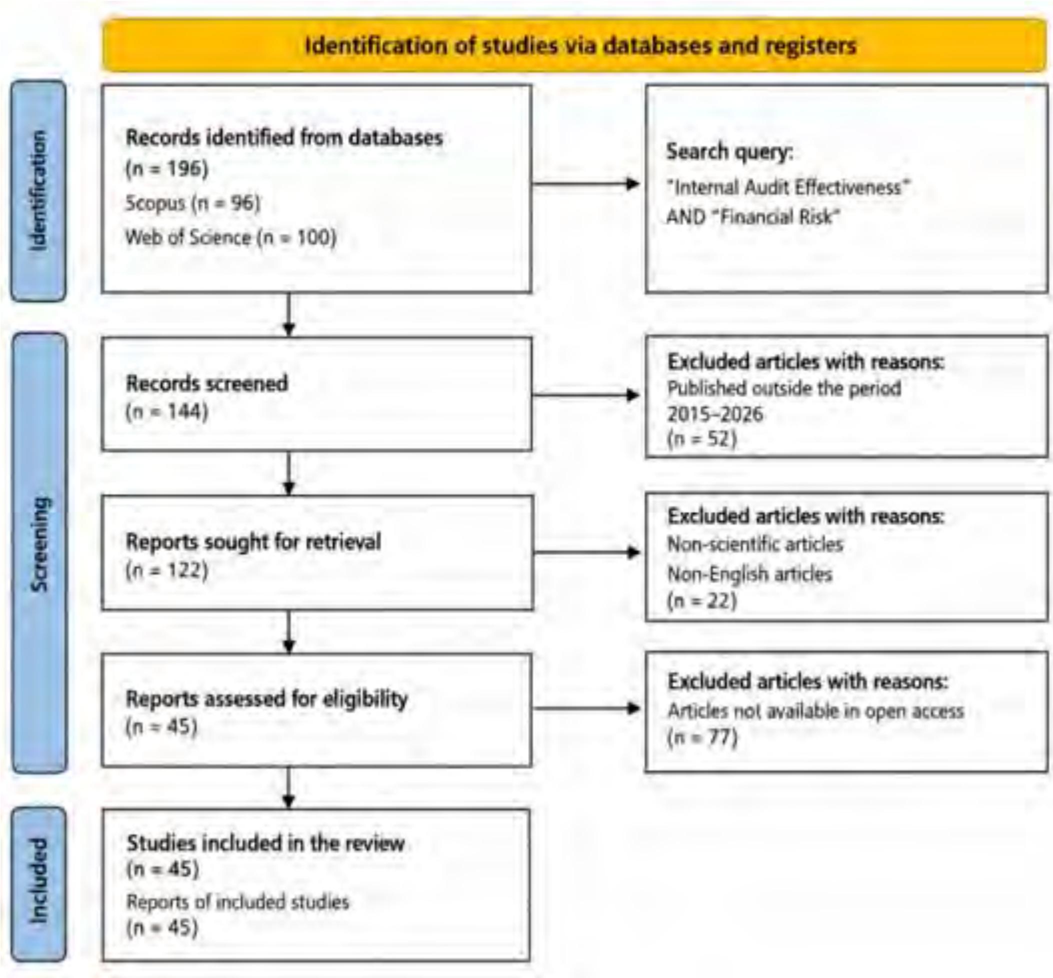
A standardized data-extraction and thematic-coding grid was developed in Microsoft Excel. The same grid was applied to each of the 45 selected publications to ensure consistency and comparability across the corpus.The information extracted included bibliographic characteristics, the nature and methodology of the study, its research objective, its principal findings, and the points of convergence and divergence identified in comparison with the other publications.The thematic analysis combined deductive and inductive coding. The deductive categories were derived from the research questions and the principal concepts examined in the literature, including internal audit effectiveness, internal control, financial risk management, corporate governance, audit committees, risk committees, fraud prevention, and financial reporting quality.The inductive procedure made it possible to identify additional themes emerging from the corpus, particularly continuous auditing, cybersecurity, technological innovation, artificial intelligence, sustainability auditing, and sustainability reporting.Each publication was classified according to its principal research objective and main findings. A principal thematic category was assigned to each study to avoid double counting in the descriptive analysis. Secondary themes were also recorded when a publication addressed several dimensions.

Table 1. Data-extraction and thematic-coding grid

Coding variable	Information extracted
Database	Scopus or Web of Science
Authors and year	Author names and publication year
Bibliographic information	Article title, journal, and DOI
Principal subject	Main topic addressed by the study
Nature of the study	Empirical, theoretical, or methodological
Methodological approach	Quantitative, qualitative, or quantitative modeling
Research objective	Main purpose of the study
Main findings	Principal results reported by the authors
Principal thematic category	Governance and committees; internal audit and risk management; reporting and audit outcomes; or technology and sustainability
Secondary themes	Additional dimensions addressed by the publication
Convergence	Findings consistent with other studies in the corpus

Source: Authors

Figure 1: PRISMA 2020 flow diagram for the systematic literature review completed by the authors



Source: Authors

The corpus comprises 42 empirical quantitative studies, representing 93.3% of the selected publications, two theoretical qualitative studies, representing 4.4%, and one methodological study based on quantitative modeling, representing 2.2%. Four principal thematic categories emerged from the coding process. The first category, corporate governance, audit committees, and risk committees, comprises 16 publications, representing 35.6% of the corpus. The second category, internal audit, internal control, financial risk management, and fraud prevention, includes 13 publications, representing 28.9%. The third category, financial reporting quality and audit outcomes, consists of 11 publications, representing 24.4%. Finally, the fourth category, technology, cybersecurity, innovation, and sustainability, includes five publications, representing 11.1%.The analysis also examined points of convergence and divergence among the selected publications. Convergences were identified when several studies reported similar relationships between internal audit, governance, internal control, and financial risk management. Divergences were recorded when findings differed according to the sector of activity, geographical context, institutional environment, methodological design, or specific dimension of audit effectiveness examined.

2.7. Methodological limitations

Despite the structured application of the PRISMA 2020 guidelines, several methodological limitations should be acknowledged.First, the restriction to English-language and open-access publications may have excluded relevant contributions and affected the representativeness of the corpus. The combined application of these two criteria excluded 77 of the 122 records remaining after the document-type filter, corresponding to 63.1%.Second, the literature search was limited to Scopus and the Web of Science Core Collection. Relevant publications indexed in other bibliographic databases or available in the grey literature may therefore have been omitted.Third, the screening, selection, and coding procedures were conducted by a single reviewer. No inter-reviewer reliability coefficient was calculated, which may have increased the risk of subjective selection or classification decisions.Finally, although the methodological characteristics of the studies were systematically examined, a complete article-by-article MMAT assessment could not be finalized from the initial extraction file alone. These limitations were considered when interpreting the findings and formulating the conclusions of the review.

3. Results and Discussion

3.1. Descriptive Analysis of the Literature

The final corpus comprises 45 publications, including 25 articles indexed in Scopus (55.6%) and 20 articles indexed in Web of Science (44.4%). The descriptive analysis reveals a strong empirical and quantitative orientation, a recent increase in publications, and a thematic concentration around governance, internal control, financial reporting, and financial risk management.The temporal distribution indicates that the literature has expanded considerably in recent years. Nineteen of the 45 publications (42.2%) were published in 2024 and 2025, including eight articles in 2024 (17.8%) and 11 articles in 2025 (24.4%). By comparison, eight publications (17.8%) were published between 2015 and 2018, 14 (31.1%) between 2019 and 2021, and four (8.9%) between 2022 and 2023. This concentration in the most recent period reflects the growing academic interest in internal audit effectiveness, financial risk management, digitalization, cybersecurity, and sustainability-related auditing.From a methodological perspective, 42 of the 45 publications are empirical quantitative studies, representing 93.3% of the corpus. Two publications (4.4%) adopt a theoretical and qualitative approach, while one publication (2.2%) is based on quantitative modeling. Quantitative studies mainly use surveys, financial databases, regression analysis, and econometric models. The predominance of quantitative research reflects an effort to statistically examine the relationships between audit characteristics, governance mechanisms, internal control systems, and financial outcomes. However, the limited number of qualitative and conceptual studies restricts the in-depth analysis of organizational processes and contextual mechanisms.The thematic coding identifies four principal areas. Corporate governance, audit committees, and risk committees constitute the largest category, with 16 publications (35.6%). Internal audit, internal control, financial risk management, and fraud prevention account for 13 publications (28.9%). Financial reporting quality and audit outcomes represent 11 publications (24.4%), while technology, cybersecurity, innovation, and sustainability account for five publications (11.1%).

Table 2 : Distribution of Publications by Principal Thematic Area build by the Authors

Dimension	Category	Number of publications	Percentage
Database	Scopus	25	55.6%
	Web of Science	20	44.4%
Publication period	2015–2018	8	17.8%
	2019–2021	14	31.1%
	2022–2023	4	8.9%
	2024–2025	19	42.2%
Methodological approach	Empirical quantitative	42	93.3%
	Theoretical qualitative	2	4.4%
	Quantitative modeling	1	2.2%
Principal thematic category	Governance, audit committees, and risk committees	16	35.6%
	Internal audit, internal control, risk management, and fraud prevention	13	28.9%
	Financial reporting quality and audit outcomes	11	24.4%
	Technology, cybersecurity, innovation, and sustainability	5	11.1%

Source: Authors

The studies cover developed and emerging economies and a variety of organizational settings, including banking and financial institutions, public-sector organizations, government units, listed and private companies, telecommunications, healthcare, and sustainability-related contexts. The countries and regions explicitly represented include Jordan, Yemen, Indonesia, Kosovo, Malaysia, Spain, the United Kingdom, Australia, Africa, and several multi-country settings. This diversity broadens the analytical scope of the review but also creates substantial institutional and sectoral heterogeneity.Overall, the descriptive analysis reveals a recent, predominantly quantitative, and thematically diversified field. Governance and internal control remain the central areas of investigation, while technology, cybersecurity, and sustainability represent emerging but still comparatively underdeveloped research streams.

3.2. Quantified Analysis of Convergences

To distinguish convergence from divergence, findings were classified as convergent when at least two studies reported a relationship in the same direction or identified a similar explanatory mechanism. Findings were classified as divergent when they were contradictory, adverse, non-significant, conditional upon contextual factors, or based on substantially different measurements of internal audit effectiveness and financial risk management.A directional coding of the principal conclusions shows that 40 of the 45 publications (88.9%) report a positive or enabling relationship between audit, governance, internal control mechanisms, and financial risk-related outcomes. The remaining five publications (11.1%) report more nuanced, indirect, contextual, or adverse findings. This distribution indicates a broad convergence regarding the contribution of audit and governance mechanisms, without implying that the effects are uniform across all contexts.A first convergence concerns the contribution of internal audit and internal control to financial risk reduction and fraud prevention. Among the 13 publications classified under internal audit, internal control, risk management, and fraud prevention, ten (76.9%) report a direct improvement in risk identification, risk mitigation, internal control, fraud prevention, transparency, or organizational performance. For example, the application of COSO-ERM is associated with reduced fraudulent financial reporting in Jordanian banks (Abdul Rahman & Al-Dhaimesh, 2018), while risk-management mechanisms contribute to fraud prevention in public enterprises (Novatiani et al., 2022). Internal audit planning, ethical practices, and financial control systems are also associated with improved risk-management outcomes (Alhebri et al., 2024; Tanbour et al., 2025; Nurgaliyeva et al., 2025).A second and particularly strong convergence concerns governance mechanisms. Fifteen of the 16 publications in the governance, audit committee, and risk committee category (93.8%) identify a positive or enabling influence of governance characteristics on audit quality, financial reporting, risk disclosure, organizational resilience, or accountability. Audit committee expertise and effectiveness are associated with higher audit quality, shorter reporting delays, and better risk disclosure (Ghafran & O'Sullivan, 2017; Bhuiyan & D'Costa, 2020; El-Deeb et al., 2024; Ismail et al., 2025). Risk committees, board supervision, managerial abilities, and Treasury oversight are similarly presented as mechanisms that strengthen organizational control and risk governance.Organizational leadership also constitutes a recurring explanatory mechanism. The findings indicate that management support, ethical commitment, and the "tone at the top" facilitate the integration of internal audit into organizational risk-management processes. Kabuye et al. (2019), for example, show that leadership commitment and internal audit quality jointly improve risk management. These findings suggest that technical audit procedures alone are insufficient when they are not supported by an appropriate organizational culture.A third convergence concerns financial reporting quality and audit outcomes. Ten of the 11 publications in this category (90.9%) associate audit quality, reporting mechanisms, or audit committee expertise with improved financial information, more timely reporting, enhanced going-concern assessments, reduced earnings management, or better credit outcomes. Audit quality is negatively associated with earnings management in emerging markets (Almarayeh et al., 2020), while audit expertise improves financial reporting quality (Rahman et al., 2023). Other studies show that audit committee financial expertise reduces audit report lag (Salleh et al., 2017) and that higher external audit quality improves firms' credit scores (Zalata et al., 2020).Finally, all five publications classified under technology, cybersecurity, innovation, and sustainability identify beneficial or potentially beneficial applications. Continuous auditing improves fraud detection, cybersecurity-oriented internal audit strengthens information-system controls, and technological or sustainable innovation extends the scope of audit activities (Koerniawan et al., 2025; Ferreira et al., 2025; Masoud, 2025). Although this stream represents only 11.1% of the corpus, it highlights an emerging transformation of internal audit toward continuous, technology-supported, and sustainability-oriented practices.

These quantified findings confirm that the literature predominantly views internal audit as a strategic governance mechanism contributing to fraud prevention, internal control, financial reporting quality, organizational accountability, and financial risk management.

3.3. Analysis of Divergences and Methodological Limitations

Despite the general convergence identified, the findings are not homogeneous. Divergences arise from geographical and institutional contexts, the operationalization of the principal concepts, the nature of the dependent variables, and the methodological approaches used.A first source of divergence concerns institutional and geographical contexts. Studies conducted in emerging economies frequently emphasize the role of internal audit in compensating for weaknesses in internal controls, governance systems, or regulatory enforcement. In more

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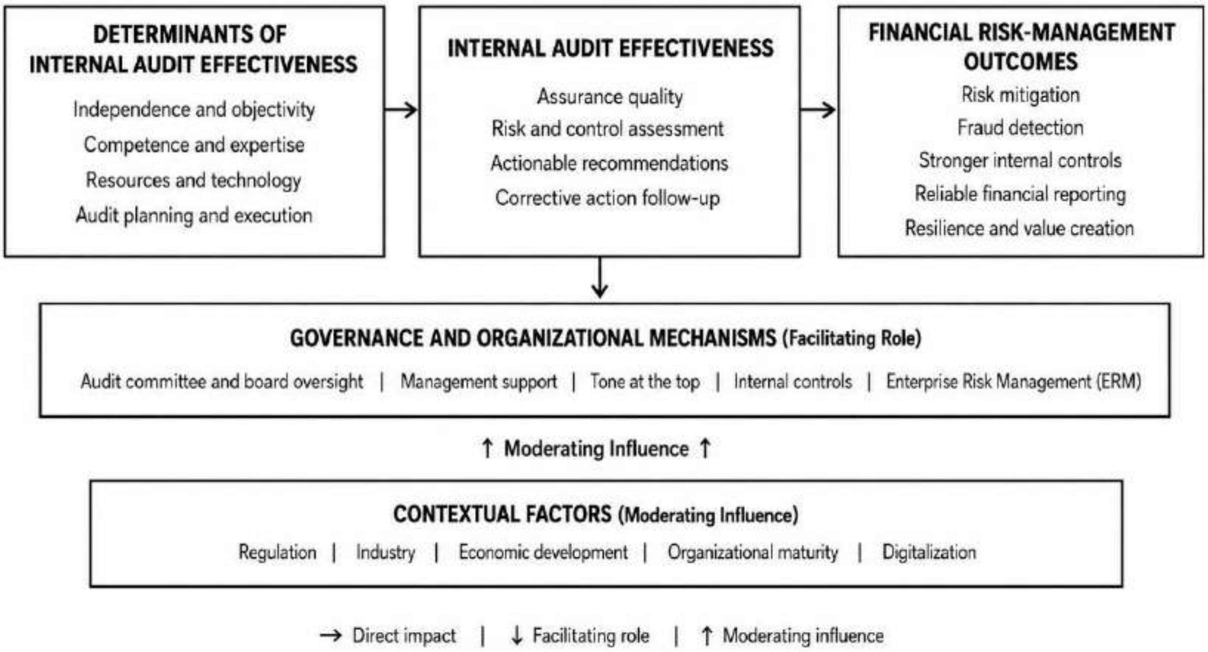
developed institutional settings, internal audit is generally examined as one component of an already structured governance framework. Consequently, the magnitude and interpretation of the relationships vary according to regulatory maturity, organizational infrastructure, and the development of professional audit practices.A second source of divergence concerns the determinants used to explain internal audit effectiveness. Some publications prioritize audit committee expertise, independence, or composition, while others emphasize management support, auditors' competencies, ethical practices, planning quality, internal control systems, or technological capabilities. These determinants are complementary rather than necessarily contradictory, but their unequal operationalization prevents the identification of a single universally dominant factor.The governance findings also contain an important adverse result. While 15 of the 16 governance-related publications report positive or enabling relationships, He et al. (2024) find that busy independent directors are associated with increased earnings management in an IPO context. This result suggests that formal director independence may be insufficient when directors face excessive workload or limited monitoring capacity. Governance effectiveness therefore depends not only on the existence of governance bodies but also on their availability, expertise, involvement, and operational conditions.A third divergence concerns the measurement of internal audit effectiveness. Several quantitative studies do not measure internal audit effectiveness directly. Instead, they use proxy variables such as audit fees, audit report lag, audit committee expertise, going-concern opinions, earnings management, risk disclosure, or credit scores. These proxies capture specific consequences or characteristics of audit and governance, but they do not necessarily reflect the overall effectiveness of the internal audit function. This measurement diversity limits direct comparability across studies.The predominance of quantitative research also produces several methodological limitations. The 42 quantitative empirical studies represent 93.3% of the corpus, but many rely on cross-sectional surveys, archival financial data, or econometric associations. Survey-based studies may be affected by self-reporting and common-method biases, particularly when respondents assess both internal audit quality and risk-management effectiveness. Archival and econometric studies may face endogeneity, omitted-variable bias, and reverse causality, making it difficult to establish definitive causal relationships.The two theoretical qualitative studies provide broader interpretations of governance, transparency, and organizational risk. However, their conclusions are not supported by direct statistical testing and may have limited generalizability. Similarly, the methodological modeling study offers technological and analytical innovation, but its conclusions depend on model assumptions and require external validation in different organizational settings.Sectoral concentration constitutes an additional limitation. Banking, financial reporting, governance, and public-sector contexts are strongly represented, whereas small and medium-sized enterprises, non-profit organizations, and several geographical regions remain underexplored. Findings obtained in highly regulated sectors may therefore not be directly transferable to organizations with less formalized governance and internal control systems.These divergences do not invalidate the general positive contribution identified in the literature. Rather, they show that internal audit effectiveness is contingent upon governance quality, organizational maturity, institutional context, research design, and the indicators used to measure audit and risk-management outcomes.

3.4. Integrative Conceptual Synthesis

The results support the development of an integrative conceptual model linking the determinants of internal audit effectiveness to financial risk-management outcomes.The first component of the model includes the principal determinants of internal audit effectiveness identified in the literature: organizational independence and objectivity, auditors' competencies and professional expertise, resource adequacy, audit planning and execution quality, ethical practices, follow-up of recommendations, and technological capabilities.These determinants influence the effectiveness of internal audit, understood as its ability to provide reliable assurance, identify control weaknesses, formulate relevant recommendations, and support the improvement of governance, risk management, and internal control processes.The model also identifies several governance and organizational mechanisms that facilitate this relationship. These mechanisms include audit committee expertise and independence, board oversight, management support, the "tone at the top," enterprise risk management, and the maturity of internal control systems.Internal audit effectiveness subsequently contributes to several financial risk-management outcomes: improved risk identification and monitoring, stronger internal controls, reduced fraud and earnings management, enhanced financial reporting quality and timeliness, improved risk disclosure, and greater organizational resilience.Finally, the relationship is influenced by contextual factors, including the regulatory and institutional environment, sector of activity, level of economic development, organizational maturity, and degree of technological development. These factors explain why similar audit mechanisms may generate different outcomes across organizations and countries.

Figure 2. Integrative Model of Internal Audit Effectiveness and Financial Risk Management constructed by the authors



Source: Authors

4. Conclusion and Research Implications

This systematic literature review examined the relationship between internal audit effectiveness and financial risk management based on a final corpus of 45 publications selected through the PRISMA 2020 process. The findings reveal a broad convergence regarding the strategic contribution of internal audit to financial risk management, while also highlighting important variations related to governance quality, organizational maturity, institutional context, sector of activity, and methodological choices.Regarding the first research question, the review shows that effective internal audit contributes to stronger internal controls, improved risk identification, enhanced fraud prevention, and more reliable financial reporting. These effects are particularly visible when audit activities are supported by structured risk-management frameworks, appropriate planning, sufficient resources, professional competencies, and effective monitoring procedures. However, the relationship is not uniform across all studies, as

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its magnitude depends on the indicators used to measure audit effectiveness and financial risk-management outcomes.Regarding the second research question, the findings confirm that governance mechanisms play a central facilitating role. Audit committee expertise and independence, board oversight, management support, the "tone at the top," and the maturity of enterprise risk management systems strengthen the capacity of internal audit to produce relevant assurance and recommendations. Governance structures therefore do not merely accompany internal audit; they shape the organizational conditions under which it can effectively contribute to risk management.Regarding the third research question, the review indicates that regulatory, institutional, sectoral, and technological contexts moderate the relationship between internal audit effectiveness and financial risk management. Similar audit mechanisms may generate different outcomes depending on the level of regulatory enforcement, the maturity of internal control systems, the availability of technological resources, and the organizational environment. The findings therefore support a contingent rather than universal interpretation of internal audit effectiveness.

Theoretical contributions

The principal theoretical contribution of this study lies in the development of an integrative framework linking four complementary levels of analysis. The first level concerns the determinants of internal audit effectiveness, including independence, auditors' competencies, resource adequacy, audit planning and execution quality, ethical practices, follow-up procedures, and technological capabilities. The second level concerns internal audit effectiveness itself, reflected in assurance quality, the identification of control weaknesses, the relevance of recommendations, and the monitoring of corrective actions. The third level comprises governance and organizational mechanisms, such as audit committee oversight, board supervision, management support, internal control maturity, and enterprise risk management. The fourth level concerns financial risk-management outcomes, including risk identification and mitigation, fraud prevention, financial reporting reliability, improved internal control quality, and organizational resilience.This framework contributes to the literature by moving beyond isolated relationships and by showing that internal audit effectiveness results from the interaction between professional, organizational, governance, institutional, and technological dimensions. It also clarifies that governance mechanisms act as facilitating factors, while regulatory, sectoral, economic, and technological conditions operate as contextual moderators. The review therefore provides a structured theoretical basis for future empirical testing of direct, mediating, and moderating relationships.

Managerial and regulatory implications

The findings generate several operational implications. Organizations should first strengthen the organizational independence of internal audit by ensuring direct access to audit committees and boards of directors, while limiting managerial interference in audit planning and reporting. They should also establish formal competency-development programs covering financial risk analysis, data analytics, cybersecurity, regulatory compliance, fraud detection, and sustainability-related risks.Audit committees should periodically assess the adequacy of internal audit resources, approve risk-based audit plans, monitor the implementation of recommendations, and evaluate whether identified weaknesses are corrected within defined deadlines. Management should reinforce the "tone at the top" by integrating ethics, transparency, and accountability into performance-management and decision-making processes.Internal audit functions should also develop continuous-auditing mechanisms, automated control testing, and data-analytics capabilities to identify anomalies more rapidly and improve real-time risk monitoring. Regulators and professional bodies should promote clearer minimum standards for internal audit independence, professional certification, technological competence, and reporting quality, particularly in emerging economies and less regulated sectors.

Research limitations

Several limitations should be acknowledged. First, the review was restricted to English-language and open-access publications indexed in Scopus and the Web of Science Core Collection. This restriction may have excluded relevant studies published in other languages, subscription-based journals, alternative bibliographic databases, or the grey literature, thereby affecting the representativeness of the corpus.Second, the search was conducted on February 6, 2026. Publications indexed after this date were therefore not included, meaning that the findings represent the state of the literature at a specific point in time.Third, the screening, selection, and coding procedures were conducted by a single reviewer, and no inter-reviewer agreement coefficient was calculated. This may have increased the risk of subjective decisions during article selection and thematic classification.Fourth, although the methodological characteristics of the included studies were examined, a complete formal article-by-article MMAT assessment could not be finalized. The conclusions should therefore be interpreted cautiously, particularly because the corpus is strongly dominated by quantitative studies using proxies, cross-sectional surveys, and archival data.Finally, the heterogeneity of countries, sectors, variables, and methodological designs limits direct comparability and prevents the estimation of a single pooled effect of internal audit effectiveness on financial risk management.

Future research directions

Future research should empirically test the proposed integrative model by examining the direct effects of independence, competence, resources, audit quality, ethics, and technological capabilities on specific financial risk-management outcomes. Particular attention should be paid to the mediating roles of internal control quality, audit committee effectiveness, and enterprise risk management maturity.More research is also required on artificial intelligence, continuous auditing, machine learning, and automated anomaly detection in internal audit, especially in developing and emerging economies where technological capabilities and regulatory infrastructures may be limited. Comparative studies could examine whether digital audit tools generate similar improvements in fraud detection and risk monitoring across developed and emerging institutional contexts.

Future studies should also investigate underrepresented sectors, including small and medium-sized enterprises, family businesses, non-profit organizations, healthcare organizations, and hospitality companies. These sectors may differ substantially from banking and listed companies in terms of governance structures, internal audit resources, and risk-management maturity.Longitudinal and mixed-methods studies would help clarify causal relationships and explain how internal audit effectiveness evolves over time. In particular, interviews with internal auditors, audit committee members, regulators, and risk managers could complement quantitative proxy measures and provide a deeper understanding of organizational processes, implementation barriers, and contextual contingencies.Finally, future systematic reviews should include additional databases, multilingual publications, subscription-based studies, and a formal independent quality appraisal in order to provide a more comprehensive and methodologically robust synthesis of the field.

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References

(1). Abdul Rahman, A. A. A., & Al-Dhaimesh, O. H. A. (2018). The effect of applying COSO ERM model on reducing fraudulent financial reporting of commercial banks in Jordan. Banks and Bank Systems, 13(2), 107–115. https://doi.org/10.21511/bbs.13(2).2018.09

(2). Ait Novatiani, R., Afiah, N. N., & Sumantri, R. (2022). Risk management and other factors preventing fraudulent financial reporting by state-owned enterprises in Indonesia. Asian Economic and Financial Review, 12(8), 686–711. https://doi.org/10.55493/5002.v12i8.4587

(3). Alhebri, A., Alkebsee, R. H., Al-Matari, E. M., Al-Bukhrani, M. A., & Omer, A. M. (2024). The effect of internal audit planning on risk factors: Evidence from Yemen's banks. Banks and Bank Systems, 19(3), 45–57. https://doi.org/10.21511/bbs.19(3).2024.05

(4). Ali, K. S., Aljuhishi, B. I. M., & Alaraji, F. A. A. S. (2025). Impact of applying administrative auditing on the effectiveness of government units: Analytical study at Mustansiriya University. Quality – Access to Success, 26(205), 73–88. https://doi.org/10.47750/QAS/26.205.08

(5). Almaqtari, F. A., Farhan, N. H. S., Al-Hattami, H. M., Elsheikh, T., & Al-Dalaien, B. O. A. (2024). The impact of artificial intelligence on information audit usage: Evidence from developing countries. Journal of Open Innovation: Technology, Market, and Complexity, 10(2), 100298. https://doi.org/10.1016/j.joitmc.2024.100298

(6). Almarayeh, T. S., Aibar-Guzmán, B., & Abdullatif, M. (2020). Does audit quality influence earnings management in emerging markets? Evidence from Jordan. Revista de Contabilidad – Spanish Accounting Review, 23(1), 64–74. https://doi.org/10.6018/rcsar.365091

(7). Baharom, Z. (2025). Theoretical and practical insights into digital technologies in internal auditing: A bibliometric analysis of trends and future directions (1980–2024). Discover Data, 3, Article 41. https://doi.org/10.1007/s44248-025-00081-z

(8). Behrend, J., & Eulerich, M. (2019). The evolution of internal audit research: A bibliometric analysis of published documents (1926–2016). Accounting History Review, 29(1), 103–139. https://doi.org/10.1080/21552851.2019.1606721

(9). Bożek, S., & Emerling, I. (2016). Protecting the organization against risk and the role of financial audit on the example of the internal audit. Oeconomia Copernicana, 7(3), 485–499. https://doi.org/10.12775/OeC.2016.028

(10). Committee of Sponsoring Organizations of the Treadway Commission. (2017). Enterprise risk management: Integrating with strategy and performance.

(11). Fama, E. F., & Jensen, M. C. (1983). Separation of ownership and control. Journal of Law and Economics, 26(2), 301–325. https://doi.org/10.1086/467037

(12). Ferreira, L. V. A., Alves, C. A. D. M., Peotta de Melo, L., & Nunes, R. R. (2025). Internal audit strategies for assessing cybersecurity controls in Brazilian financial institutions. Applied Sciences, 15(10), 5715. https://doi.org/10.3390/app15105715

(13). Ghafran, C., & O'Sullivan, N. (2017). The impact of audit committee expertise on audit quality: Evidence from UK audit fees. The British Accounting Review, 49(6), 578–593. https://doi.org/10.1016/j.bar.2017.09.008

(14). Gramling, A. A., Maletta, M. J., Schneider, A., & Church, B. K. (2004). The role of the internal audit function in corporate governance: A synthesis of the extant internal auditing literature and directions for future research. Journal of Accounting Literature, 23, 194–244.

(15). He, Y., Hamdan, S. L., & Faizal, S. M. (2024). Busy independent directors and IPO company earnings management: Evidence from China. Heliyon, 10(22), e40304. https://doi.org/10.1016/j.heliyon.2024.e40304

(16). Ismail, R., Mohd-Saleh, N., Yakob, R., & Shukor, M. S. (2025). Impact of audit committee effectiveness, internal audit and enterprise risk management on financial reporting lag: A threshold analysis and quantile regression approach. SAGE Open, 15(4). https://doi.org/10.1177/21582440251399723

(17). Kabuye, F., Bugambiro, N., Akugizibwe, I., Nuwasiima, S., & Naigaga, S. (2019). The influence of tone at the top management level and internal audit quality on the effectiveness of risk management practices in the financial services sector. Cogent Business & Management, 6(1), 1704609. https://doi.org/10.1080/23311975.2019.1704609

(18). Koerniawan, K. A., Salim, D. F., Isynuwardhana, D., Pratomo, D., Murti, G. T., & Fidhien, F. G. (2025). Integrating fraud deterrence propeller and continuous auditing for enhanced fraud detection and sustainability. ABAC Journal, 45(4). https://doi.org/10.59865/abacj.2025.38

(19). Kokina, J., Blanchette, S., Davenport, T. H., & Pachamanova, D. (2025). Challenges and opportunities for artificial intelligence in auditing: Evidence from the field. International Journal of Accounting Information Systems, 56, 100734. https://doi.org/10.1016/j.accinf.2025.100734

(20). Lenz, R., & Hahn, U. (2015). A synthesis of empirical internal audit effectiveness literature pointing to new research opportunities. Managerial Auditing Journal, 30(1), 5–33. https://doi.org/10.1108/MAJ-08-2014-1072

(21). Mihalciuc, C.-C., Grosu, M., Fîrţescu, B.-N., & Droj, L. (2024). The role of financial reporting in identifying earnings management in internal audit approach. Economic Computation and Economic Cybernetics Studies and Research, 58(4), 210–222. https://doi.org/10.24818/18423264/58.4.24.13

(22). Nurgaliyeva, A., Saparova, G., Zhadigerova, O., Satenov, B., Nurmagambetova, A., & Bekturova, A. (2025). Internal financial control and internal financial audit: Tools for eliminating financial misconduct. Montenegrin Journal of Economics, 21(4), 233–246. https://doi.org/10.14254/1800-5845/2025.21-4.18

(23). Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., Shamseer, L., Tetzlaff, J. M., Akl, E. A., Brennan, S. E., Chou, R., Glanville, J., Grimshaw, J. M., Hróbjartsson, A., Lalu, M. M., Li, T., Loder, E. W., Mayo-Wilson, E., McDonald, S., McGuinness, L. A., Stewart, L. A., Thomas, J., Tricco, A. C., Welch, V. A., Whiting, P., & Moher, D. (2021). The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. BMJ, 372, n71. https://doi.org/10.1136/bmj.n71

(24). Pérez-Calderón, E., Alrahamneh, S. A., & Milanés Montero, P. (2025). Impact of artificial intelligence on auditing: An evaluation from the profession in Jordan. Discover Sustainability, 6, Article 251. https://doi.org/10.1007/s43621-025-01058-3

(25). Roussy, M., & Perron, A. (2018). New perspectives in internal audit research: A structured literature review. Accounting Perspectives, 17(3), 345–385. https://doi.org/10.1111/1911-3838.12180

Data Availability Statement: This study is based on a systematic literature review of previously published academic articles. All data used in this research are drawn from publicly accessible scholarly databases, primarily Scopus and Web of Science. The full search strategy, inclusionand exclusion criteria, and data selection procedures are comprehensively documented in the methodology section to ensure transparency and replicability. As the study relies exclusively on secondary data, no new datasets were generated. Further information regarding the reviewed corpus can be made available by the authors upon reasonable request.