Artificial Intelligence in Financial Auditing: A Systematic Approach to Its Legal, Regulatory, and Governance Implications

Eduar Antonio Rodríguez Flores[1], Marianella Alicia Suárez Pizzarello[1], Luis Fernando Garcés Giraldo[2*], Alejandro Valencia-Arias[3], Diana Yanet Gaviria Rodríguez[4], Juan Camilo Patiño-Vanegas[4], Jorge Anibal Restrepo Morales[5], Ada Gallegos[6]

[1]Dirección de Investigación e Innovación, Universidad Autónoma del Perú, Villa El Salvador, Lima, Peru

[2]Escuela de Posgrados, Universidad Continental, Huancayo, Peru

[3]Vicerrectoría de Investigación y Postgrado, Universidad de Los Lagos, Osorno, Chile

[4]Instituto Tecnológico Metropolitano, Medellín, Antioquia, Colombia

[5]Institución Universitaria Tecnológico de Antioquia, Medellín, Antioquia, Colombia

[6]Departamento Académico de Ciencias Jurídicas y Políticas, Universidad Nacional Mayor de San Marcos, Lima, Peru

[1]ORCID: https://orcid.org/0000-0003-0807-6686 | Email: eduar.rodriguez@autonoma.pe

[1]ORCID: https://orcid.org/0000-0002-2793-2268 | Email: marianella.suarez@autonoma.pe

[2]ORCID: https://orcid.org/0000-0003-3286-8704 | Email: lgarces@continental.edu.pe

[3]ORCID: https://orcid.org/0000-0001-9434-6923 | Email: javalenciar@gmail.com

[4]ORCID: https://orcid.org/0000-0002-4525-1423 | Email: dianagaviria@itm.edu.co

[4]ORCID: https://orcid.org/0000-0002-8334-9296 | Email: juanpatino@itm.edu.co

[5]ORCID: https://orcid.org/0000-0001-9764-6622 | Email: jrestrepo@tdea.edu.co

[6]ORCID: https://orcid.org/0000-0002-8264-711X | Email: agallegosr@unmsm.edu.pe

***Corresponding Author:** Luis Fernando Garcés Giraldo | Email: lgarces@continental.edu.pe

Abstract.

The term 'artificial intelligence' is understood to denote the capacity of computer systems to execute tasks requiring human intelligence, such as learning and decision-making. Within the context of financial auditing, this capability enables the expeditious examination of accounting records,

facilitating the identification of irregularities in a predictive manner. However, the integration of artificial intelligence into financial auditing engenders legal, technical and ethical tensions that remain unresolved. The objective of this research endeavour was to delve into the intricate web of legal, regulatory, and governance implications that are intricately intertwined with the utilisation of artificial intelligence within the domain of auditing. The focal point of this exploration lay in the identification of regulatory frameworks, legal principles, and the emergent challenges that are poised to shape the future of this multifaceted field. The PRISMA 2020 methodology was instrumental in facilitating a rigorous and systematic review of the literature, thereby integrating fragmented approaches within a field that is subject to constant evolution. The findings of this study indicate that the concept of responsibility is subject to transformation by artificial intelligence and that flexible governance structures are a prerequisite for its effective management. Furthermore, the necessity to enhance professional competencies and to establish collaborative environments that strike a balance between innovation, oversight and public confidence in automated financial systems is emphasised.

Keywords: Artificial intelligence; ethical regulation; financial audit; legal liability; technology governance.

1 Introduction

The term 'artificial intelligence' (AI) is used to denote the capacity of computer systems to perform tasks that require human intelligence. Such tasks include learning, decision-making, natural language processing and pattern recognition. In the domain of accounting and finance, AI has been incorporated into the analysis of substantial data sets, the identification of anomalies, the automation of routine operations, and the creation of predictive financial reports [1]. These functions have been demonstrated to enhance operational efficiency, reduce costs, and improve accuracy in various activities, including auditing [2]. In the domain of financial auditing, the employment of intelligent algorithms facilitates the expeditious review of accounting records, the immediate identification of discrepancies, and the generation of alerts concerning potential risks that might not be discerned through the utilisation of conventional methodologies [3].

Nevertheless, this technological development poses a number of challenges. From an ethical standpoint, the absence of transparency in the decision-making criteria employed by automated systems is a matter of concern. From a technical standpoint, the reliability of the results is contingent upon the quality of the data and the robustness of the algorithms. From a legal standpoint, questions of liability for errors or fraud arising from decisions made by unexplained systems have been posited [4]. In light of this scenario, it is imperative to undertake a comprehensive analysis of AI in the context of auditing, encompassing the legal, regulatory and governance frameworks. The objective of this analysis is to ensure that its implementation is not only technically effective, but also in accordance with the principles of accountability, transparency and regulatory compliance within the global financial context. The integration of artificial intelligence within the domain of financial auditing has given rise to a multifaceted environment, marked by regulatory heterogeneity and an absence of coherent conceptual frameworks.

Despite the potential of these technologies to improve efficiency, accuracy and predictive capacity being widely recognised, there are still significant gaps that hinder their integration into regulated environments subject to strict control and verification principles [5]. A significant impediment pertains to the absence of comprehensive and consistent legal frameworks across different jurisdictions, giving rise to divergent interpretations concerning the boundaries and extent of the utilisation of automated systems in the context of auditing. This normative fragmentation has been demonstrated to impede standardisation of practices and to limit the possibility of assigning clear responsibilities in case of errors or failures [6]. It is evident that there is a tension between the accelerated pace of technological innovation and the requirements of transparency, traceability and responsibility that are inherent to the audit exercise. The opacity of certain algorithms, particularly those that function as black boxes,

poses a significant challenge in comprehending the criteria employed in automated decision-making processes.

This state of affairs has the potential to compromise the fundamental principles of auditing, including verifiability and the technical justification of the applied procedures [7]. In addition to the aforementioned points, the issue of deficiencies in international auditing standards must be considered. These standards do not include precise guidelines for the implementation, validation and supervision of smart technologies. It is imperative to delineate legal, ethical and professional responsibilities when errors or irregularities occur as a result of decisions taken by unexplained AI systems. This challenge is significant for extant governance frameworks, which are predicated on the individual assignment of responsibilities and the existence of auditable records [8].

Consequently, a multidimensional problem is configured that requires immediate attention from the legal, regulatory and technical dimensions, in order to prevent regulatory gaps that may affect the integrity and reliability of the audit exercise in automated contexts. The objective of the research is therefore to explore the legal, regulatory and governance implications linked to the use of artificial intelligence in financial auditing, with a view to identifying regulatory frameworks, legal principles and emerging challenges. In order to achieve the proposed objective, a series of questions must be posed in order to guide the development of the research and to allow the scope of the research to be delimited in relation to regulatory frameworks, legal principles and governance challenges.

1. Which regulatory frameworks have been adopted in different jurisdictions for the oversight of the use of artificial intelligence in accounting and financial processes with implications for auditing?
2. This study sets out to examine the legal principles that underpin the requirement for explainability in artificial intelligence systems utilised within financial and accounting contexts, with a view to ensuring their auditability.
3. The present study seeks to establish which mechanisms have been put in place for the purpose of defining legal liability in cases of errors or fraud caused by unexplained artificial intelligence.
4. A review of the regulatory proposals formulated to date indicates a paucity of attempts to update international auditing standards in the context of the incorporation of artificial intelligence in critical financial reporting processes.
5. A study of the documented positive impacts of the regulated application of artificial intelligence within financial processes is presented herewith. The particular focus of this study is the use of artificial intelligence as a source of information for tax and financial audits.

The research is structured in four main sections. Firstly, the methodology delineates the approach and procedures for the analysis of regulations and specialised literature. The analysis and results presented in this study expose the current regulatory frameworks, legal principles, accountability mechanisms, regulatory proposals, and documented benefits of the use of artificial intelligence in auditing. The ensuing discourse seeks to elucidate the findings, highlighting the existing lacunae and the challenges that lie ahead. Finally, the conclusions synthesise the contributions of the study and suggest recommendations for regulatory strengthening and areas of future research.

1.1 Theoretical framework

NICC represents an international quality control standard. IASAS 1 delineates the responsibilities of the audit firm with regard to its quality control system for audits and reviews of financial statements, as well as other engagements that provide a degree of assurance and related services. It is imperative that IAS1 is applied in conjunction with the established requirements of ethics. The International Standards on Auditing (ISAs) 100-700 series are applicable to the audit of financial statements. Table 1 provides an overview of several of these standards.

Table 1. The present study investigates the application of ISAS in the audit of financial statements.

NIA	Title	Scope
220	Quality control for an audit of financial statements	This International Standard on Auditing (ISA) addresses the specific responsibilities of the auditor in relation to the quality control procedures of an audit of financial statements.
230	Audit documentation	This International Standard on Auditing (ISA) addresses the auditor's responsibility to prepare audit documentation for an audit of financial statements.
240	The auditor's responsibilities relating to fraud in an audit of financial statements	This International Standard on Auditing (ISA) addresses the auditor's responsibilities with respect to fraud in the audit of financial statements, risks of material misstatement due to fraud.
250	Consideration of laws and regulations in an audit of financial statements	This International Standard on Auditing (ISA) addresses the auditor's responsibility to consider legal and regulatory provisions in the audit of financial statements
300	Planning an audit of financial statements	This International Standard on Auditing (ISA) deals with the auditor's responsibility for planning the audit of financial statements.
540	Auditing accounting estimates, including fair value accounting estimates, and related disclosures	This International Standard on Auditing (ISA) addresses the auditor's responsibilities in relation to accounting estimates, and related disclosure, when conducting an audit of financial statements.
600	Special considerations—audits of group financial statements (including the work of component auditors)	This International Standard on Auditing (ISA) deals with the particular considerations applicable to group audits and, in particular, to those in which the auditors of the components participate.
700	Modifications to the opinion in the independent auditor's report	This International Standard on Auditing (ISA) deals with the auditor's responsibility to form an opinion on the financial statements.

Source: authors' own elaboration based on information from the former counselor of the Technical Council of Public Accounting (CTCP)

The International Standards for Revision Work (NITR) are contained within the series 2000–2699. This series comprises two documents: the "Standard of Engagements for the Review of Financial Statements" and the NITR 2410 "Review of Interim Financial Information" carried out by the independent auditor of the entity. The range of International Standards on Assurance Engagements (ISAE) is from 3000 to 3699.

The International Standards for Related Services (ISR) 4000–4699 and the International Standards for Related Services (ISR) 4400–4410 are two sets of standards that are relevant to this text. The first of these, ISR 4400, is entitled 'Engagements to perform agreed-upon procedures regarding financial information', and it establishes standards and provides criteria on the professional responsibility of the auditor when executing an engagement to perform agreed procedures on financial reporting. The second, ISR 4410, is entitled 'Compilation engagements', and this focuses on engagements for the compilation of financial statements.

2 Methodology

The present research employs the PRISMA 2020 methodology (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) as a framework to develop a systematic review on the legal, regulatory and governance implications of artificial intelligence in financial auditing. This approach is pertinent in the analysis of emerging and complex issues, characterised by a high degree of conceptual and methodological variability that hinders the integration of available knowledge. The PRISMA 2020 framework establishes precise guidelines that facilitate the organisation, documentation and communication of the process in a transparent and reproducible manner. This enhances the traceability of decisions made at each stage of the research process, from the initial search to the final selection of studies. The application of the protocol is instrumental in ensuring the quality of the analysis and in generating valid and comparable results in a dynamic field such as AI-mediated financial auditing [9].

2.1 Eligibility criteria

The selection of studies was based on a set of predefined criteria that ensured the relevance, quality and thematic coherence of the documents included in the review. The application of these criteria was systematic, encompassing three phases: inclusion, automatic exclusion, and exclusion from criteria. In order to ensure an adequate level of scientific rigour, it was necessary to consider only those publications which had been subject to the peer-review process and which had been published in academic journals. The present study encompassed empirical, theoretical and conceptual studies that explicitly addressed the utilisation of artificial intelligence within the context of financial auditing. Furthermore, the selected works were required to address aspects pertaining to legal, regulatory, governance, transparency, or accountability frameworks. This enabled the review to concentrate on the structural and regulatory dimensions of the phenomenon.

The thematic delimitation was based on the combined presence of key terms related to artificial intelligence and financial auditing, together with notions associated with regulations, laws, governance and institutional control. This approach allowed the construction of a documentary corpus that was coherent with the research objective. The exclusion process was developed in three phases. In the initial phase, documents presenting indexing errors were automatically eliminated. Such errors included duplicates, conference abstracts, chapters without peer review, and articles that, although thematically related, did not meet the formal requirements defined. In the subsequent phase, documents that, despite being correctly indexed, did not offer full access to the text, thereby rendering them unsuitable for detailed analysis, were discarded. In the third phase of the study, a critical review of the title, abstract and content of the pre-selected texts was conducted.

2.2 Sources of information

The collection of information was carried out using two academic databases of international coverage: Scopus and Web of Science (WoS). The selection of both was made on the basis of their rigor in indexing, their multidisciplinary scope and their ability to retrieve relevant literature on topics related to artificial intelligence, financial auditing and their legal, regulatory and governance dimensions. Scopus, a database of peer-reviewed publications in economics, law, computer science and management, is operated by Elsevier. The system's advanced filtering capabilities enable the restriction of results based

on document type, language, academic discipline, institutional affiliation, and publication period. This functionality enhances the accessibility of relevant studies, ensuring users can locate up-to-date research in their respective fields [10].

Web of Science, administered by Clarivate Analytics, employs a rigorous editorial process that prioritises studies of significant impact and methodological soundness. The journal's scope encompasses the disciplines of sociology, law, economics, and technology, thus serving as a valuable resource for systematic research in interdisciplinary domains, such as auditing with artificial intelligence [10]. It is evident that both platforms facilitate the construction of Boolean equations, the application of logical operators, and the exportation of data in formats that are compatible with bibliographic analysis tools.

2.3 Search strategy

The search strategy was formulated in accordance with the stipulated inclusion criteria, with the objective of identifying studies pertaining to the utilisation of artificial intelligence in the domain of financial auditing and its legal, regulatory, or governance ramifications. For each database, an equation was developed incorporating Boolean operators (AND, OR) and controlled and free terms that accurately represented the central dimensions of the object of study. In Scopus, the following formula was utilised.

The search strategy comprised the following search terms: 'artificial intelligence' OR 'AI' AND 'financial audit' OR 'auditing' AND 'law' OR 'legal' OR 'regulation' OR 'governance' OR 'accountability' OR 'transparency'. The search syntax in Web of Science was adapted as follows: The search strategy comprised the following terms: 'artificial intelligence' OR 'AI' AND 'financial audit' OR 'auditing' AND 'law' OR 'legal' OR 'regulation' OR 'governance' OR 'accountability' OR 'transparency'.

2.4 Selection process

The selection of studies was carried out in three successive stages. Initially, the titles and abstracts were reviewed to ascertain their thematic relevance. Subsequently, a full examination of the shortlisted articles was conducted in order to verify their compliance with the established inclusion criteria. Finally, two researchers independently evaluated the relevance and methodological quality of each study. Discrepancies were resolved by consensus or, if necessary, with the involvement of a third evaluator. The entire process was meticulously documented in accordance with the structure of the PRISMA 2020 flowchart (see Figure 1).

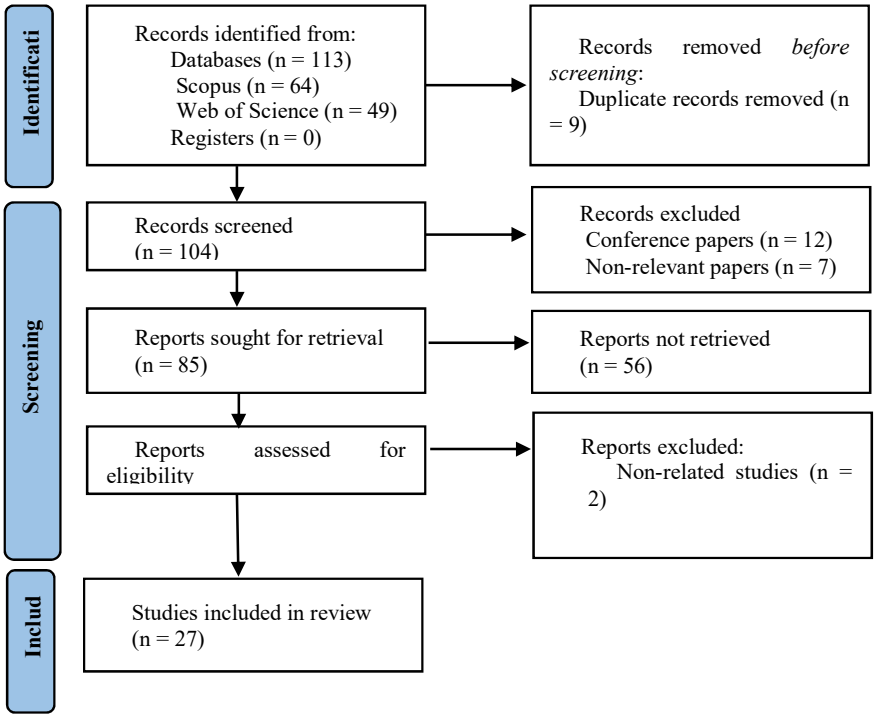

Figure 1. PRISMA flowchart. Own elaboration based on Scopus and Web of Science

2.5 Data processing

The data extracted from the articles were then organised in a template developed in Microsoft Excel. The structure enabled the recording of variables such as authorship, year, country, study type, artificial intelligence approach, implications treated and main findings. Pursuant to the information provided, preliminary coding was conducted for the purpose of identifying both conceptual and methodological patterns. A thematic categorisation was then applied to facilitate a comparative qualitative analysis and to allow for the linking of the dimensions addressed in the selected studies.

2.6 Risk of bias

The risk of bias was mitigated through the rigorous application of inclusion and exclusion criteria, as well as the utilisation of peer review in the selection process. In the course of the present study, a number of elements were given full consideration. These included the provenance of the funding for the studies, the existence of any conflicts of interest, and the methodological quality of the studies analysed. Thematic coding was independently verified by two researchers in order to reduce bias in interpretation. However, there are still risks associated with the use of specific databases, the definition of terms in the search strategy, and the possible omission of unindexed or unpublished literature, which can generate reporting biases that affect the representativeness of the findings.

3 Results

The findings have been organised according to the five questions that guided the study. This provision facilitates a comprehensive examination of the regulatory frameworks, legal principles and governance mechanisms associated with the utilisation of artificial intelligence in the context of financial auditing. The structure responds to the need to identify legal and regulatory implications from a defined thematic approach. The second table provides a comprehensive overview of the studies that were subjected to a detailed analysis.

Title	Authors
Does AI adoption redefine financial reporting accuracy, auditing efficiency, and information asymmetry? An integrated model of TOE-TAM-RDT and big data governance	[11]
Ethical governance of artificial intelligence for defence: normative tradeoffs for principle to practice guidance	[12]
The Role of IT Governance in the Integration of AI in Accounting and Auditing Operations	[13]
AI and recruiting software: Ethical and legal implications	[14]
Algorithm Auditing: Managing the Legal, Ethical, and Technological Risks of Artificial Intelligence, Machine Learning, and Associated Algorithms	[15]
An AI-Based Automated Continuous Compliance Awareness Framework (CoCAF) for Procurement Auditing	[16]
Artificial Intelligence in Healthcare and Medicine: Promises, Ethical Challenges and Governance	[17]
Auditing Artificial Intelligence as a New Layer of Mediation: Introduction of a new black box to address another black box	[18]
Both eyes open: Vigilant Incentives help auditors improve AI safety	[19]
Conformity Assessments and Post-market Monitoring: A Guide to the Role of Auditing in the Proposed European AI Regulation	[20]
Connecting the dots in trustworthy Artificial Intelligence: From AI principles, ethics, and key requirements to responsible AI systems and regulation	[21]
Current safeguards, risk mitigation, and transparency measures of large language models against the generation of health disinformation: repeated cross sectional analysis	[22]
Digital innovation and sustainable accounting practices: a systematic literature review through the governance context	[23]
Forensic technique for identifying corruption challenges to national security through digital technologies	[24]
Governance of artificial intelligence applications in a business audit via a fusion fuzzy multiple rule-based decision-making model	[25]
Impact of artificial intelligence on auditing: an evaluation from the profession in Jordan	[26]
Investigation and evaluation of randomized controlled trials for interventions involving artificial intelligence	[27]
Leveraging Knowledge Graphs for AI System Auditing and Transparency	[28]
Main directions for improving public administration mechanisms in Ukraine	[29]
Sustainability Budgets: A Practical Management and Governance Method for Achieving Goal 13 of the Sustainable Development Goals for AI Development	[30]
Tax evasion identification using open data and artificial intelligence	[31]
The Impact of Artificial Intelligence Adoption on the Quality of Financial Reports on the Saudi Stock Exchange	[32]
The Royal Marsden BRIDgE TRE Transparency Project	[33]

Towards algorithm auditing: managing legal, ethical and technological risks of AI, ML and associated algorithms	[34]
Transparent AI in Auditing through Explainable AI	[35]
Trustworthy Healthcare Cloud Storage Auditing Scheme (TCSHAS) with blockchain-based incentive mechanism	[36]
Using Knowledge Graphs to Unlock Practical Collection, Integration, and Audit of AI Accountability Information	[37]

Table 2. The following studies were included in the research: The present study is an elaboration of the existing body of research, which is based on the Scopus and Web of Science databases.

As illustrated in Figure 2, the distribution of the regulatory frameworks identified in the reviewed studies is presented. The results indicate a concentration in the AI Regulatory Frameworks, which register 14 mentions. The AI Ethics Principles are referenced eight times, while Organizational Theories is referenced seven times. Auditing Standards, Data Protection Laws and anti-discrimination regulations are also identified less frequently. The remaining categories comprise transparency guidelines, risk assessment tools, governance models, privacy standards, and financial regulations, which demonstrate analogous proportions.

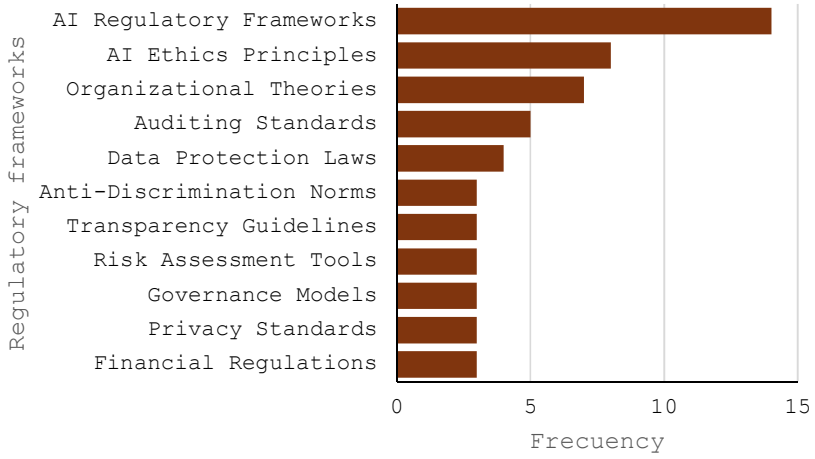

Figure 2. The distribution of regulatory frameworks applied is as follows: The present document has been prepared by the author on the basis of the Scopus and Web of Science databases.

Figure 3 illustrates the frequency of legal principles identified in the reviewed literature. The AI Regulatory Frameworks concentrate 15 references and occupy the main position. The Ethical AI Principles are mentioned on nine occasions, and the Organizational Theories on seven. It is evident that both Data Protection Laws and Auditing Guidelines are included in the list, with each of these items having five appearances. A range of other categories have been identified, including anti-discrimination regulations, digital accounting standards, financial regulations, blockchain frameworks and civil rights regulations. These categories are all observed to occur with lower frequencies.

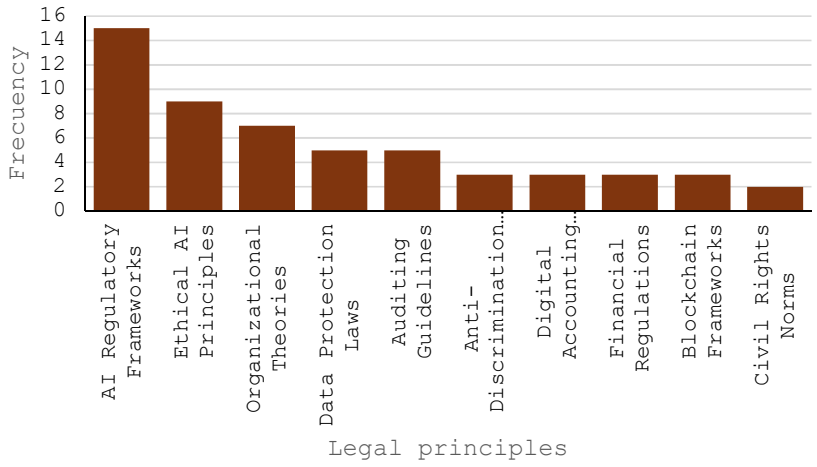

Figure 3. The following legal principles have been identified in the relevant studies. The present document has been prepared by the author on the basis of the Scopus and Web of Science databases.

Figure 4 illustrates the distribution of approaches associated with legal liability in the utilisation of artificial intelligence in the context of financial auditing. The data demonstrate that Audit Quality, Ethical Oversight and Compliance Requirements have the highest number of references, with five mentions each. The subsequent artist is Human Accountability, with four records. The concepts of AI Governance, Auditability Assurance and Regulatory Conformity are each represented three times. Finally, risk management, bias mitigation and data protection are mentioned in passing.

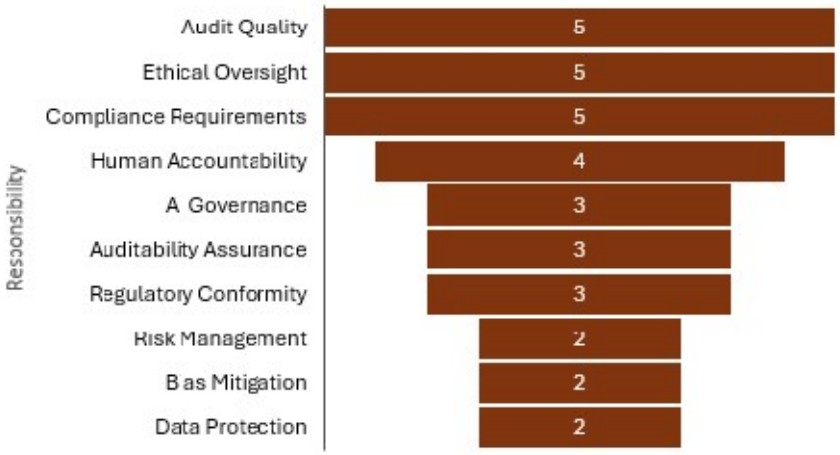

Figure 4. The following legal liability approaches have been identified: The present document has been prepared by the author on the basis of the Scopus and Web of Science databases.

Figure 5 is presented, which shows the distribution of the emerging regulatory proposals identified in the reviewed literature. The results indicate the prevalence of Ethics-Based Auditing, with nine mentions, followed by Algorithm Auditing and Dynamic Regulation, with six references each. Other categories that have appeared with less frequency include Sustainability Incentives, which has been mentioned on three occasions, and Big Data Governance, Pro-Ethical Culture, Global Ethical Frameworks, Blockchain Monitoring, Semantic Knowledge Graphs and Open Data Models, all of which have been mentioned on two occasions.

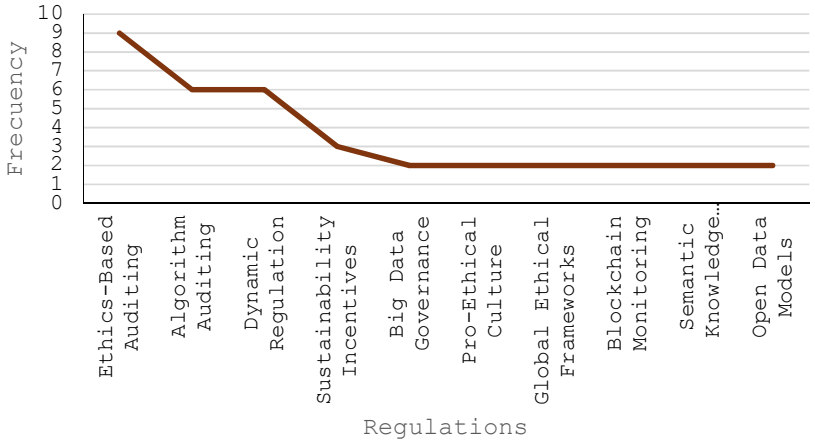

Figure 5: Emerging policy proposals identified. The present document has been prepared by the author on the basis of the Scopus and Web of Science databases.

As illustrated in Figure 6, the review of literature reveals a predominance of positive impacts concerning the utilisation of artificial intelligence in financial auditing. The data indicates that the term 'Operational Efficiency Gains' is mentioned on seven occasions. The subsequent elements are Audit Accuracy Improvement and Risk Mitigation, with a total of five records each. It is evident that categories such as 'Ethical Alignment', 'Governance Strengthening' and 'Healthcare Performance Boost' are also observed, with each category having four references. Finally, the following terms are included: Transparency Enhancement, Standardization Advocacy, Innovation Enablement and Regulatory Compliance Support, which are registered respectively.

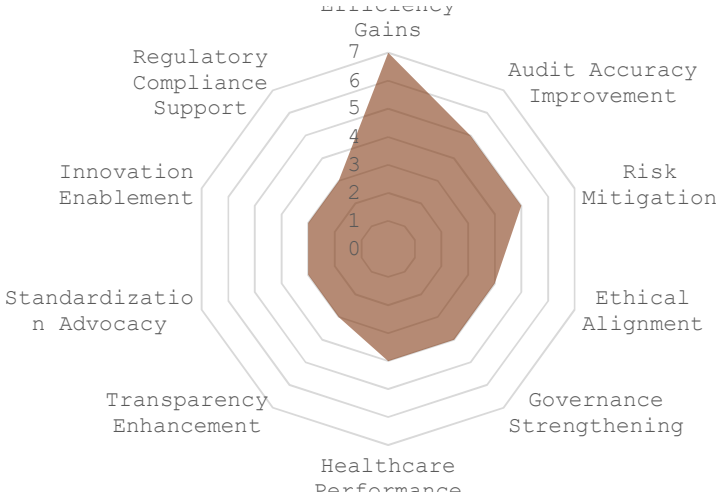

Figure 6: Documented positive impacts. The present document has been prepared by the author on the basis of the Scopus and Web of Science databases.

The results were organised according to the research questions and demonstrate a comprehensive overview of the relationship between artificial intelligence and financial auditing. The evidence indicates a persistent interest in regulatory frameworks, ethical principles, legal responsibility approaches and emerging regulatory proposals that seek to address challenges of transparency, efficiency and governance. The implementation of these technologies has been shown to engender a number of positive impacts, including enhanced operational efficiency, strengthened trust and enhanced accountability.

4 Discussion

The purpose of this discussion section is to examine in detail the findings on the interaction between artificial intelligence and financial auditing, highlighting its legal, regulatory and governance importance. Firstly, a detailed analysis of the identified results is presented. Subsequently, the evidence is compared with that from previous studies, thus enabling the findings to be contextualised within the academic and professional domains. In the following section, the results of the research will be presented and discussed in relation to the conceptual framework that has been derived from the information collected. The theoretical, political and practical implications of the study are described, its limitations are highlighted and lines of future research are proposed.

4.1 Analysis of results

The results demonstrate that the reviewed literature underscores the pivotal function of regulatory and ethical frameworks in the integration of artificial intelligence within financial auditing. This emphasis is in response to the need to maintain regulatory consistency, traceability and transparency during the life cycle of automated systems, as pointed out by [12]. It is also recognised that the integration of these frameworks with organisational governance models, as outlined by [13], is key to ensuring auditable practices, reducing risks, and reinforcing trust in institutions.

The results indicate that the reviewed literature prioritises legal principles pertaining to regulatory, ethical and organisational frameworks in the adoption of artificial intelligence in auditing. This approach demonstrates a consistent commitment to the identification and mitigation of legal risks and instances of discrimination. [14] emphasise the necessity for external audits to guarantee equitable processes. It is also recognised that digital innovation is a driving force behind sustainable accounting practices, which are characterised by enhanced transparency and reliability, as [23] indicates. The analysis reflects a consensus on the importance of integrating ethical principles, data protection standards and governance frameworks in these contexts.

The results indicate that the reviewed literature identifies a diverse approach to legal liability in financial auditing with artificial intelligence. The primary focus of these audits is on quality control, ethical oversight, and adherence to regulatory compliance standards. This emphasis on audit quality, ethical oversight, and regulatory compliance is indicative of an ongoing concern for transparency and reliability within the audit industry. [18] have highlighted that the concept of the expert auditor can act as an additional opaque layer, thereby restricting the discourse surrounding the relationship between humans and systems. [25] posit that success in such environments is contingent on governance strategies that integrate human factors and data quality.

The results demonstrate that the literature under review presents a broad set of emerging regulatory proposals aimed at strengthening supervision and transparency in the use of artificial intelligence in financial auditing. Approaches that prioritise ethical audits and the design of dynamic regulatory frameworks adapted to technological progress predominate. [16] posit that the utilisation of automated frameworks, such as CoCAF, is instrumental in ensuring regulatory compliance with a high degree of accuracy and efficiency. [17] emphasises the necessity for a global governance system and particular ethical guidelines to oversee the risks posed by artificial intelligence in critical sectors.

The results indicate that the reviewed literature documents various positive impacts derived from artificial intelligence in financial auditing. The emphasis is on enhancing operational efficiency and audit accuracy, in addition to the capacity to mitigate risk and fortify governance. Advances in transparency and ethical alignment of automated processes are amongst the benefits that can be expected. [15] have highlighted that rigorous algorithm validation has the potential to mitigate legal and reputational risks. In the 2024 study by Bova and Di Stefano, the assertion is made that the provision of suitable incentives has the capacity to stimulate the implementation of innovative audits, thereby contributing to the enhancement of security and fostering confidence in intelligent systems.

4.2 Comparison of results with other studies

The results of the study are consistent with earlier findings that demonstrate the potential of AI to optimise operational efficiency, enhance transparency and improve fraud detection in financial auditing. [38] posits that the integration of AI enhances efficiency and stakeholder confidence, notwithstanding the ongoing presence of barriers associated with ethical and regulatory concerns. In addition, the study corroborates the prevailing concerns regarding the opacity of algorithms and the necessity for robust regulatory frameworks that ensure regulatory consistency and respect for ethical principles. A central agreement with [39] is the relevance of integrating governance structures that align business intelligence with legal and ethical standards. Whilst the study under discussion highlights regulatory frameworks and legal principles as axes of technological adoption, Agbadamasi et al. demonstrate that companies that use business intelligence tools strengthen accountability and regulatory adherence.

This convergence lends support to the notion that systematic oversight and monitoring mechanisms are essential components of implementing AI in a responsible manner. In relation to the findings of [40], both studies emphasise that the automation of compliance processes and the management of legal risks are significant advantages of AI. Celestin et al. present empirical evidence demonstrating the quantitative impact of AI adoption on the reduction of legal costs and compliance failures. Despite the absence of detailed metrics in the study, it identifies analogous trends, including the enhancement of governance and regulatory efficiency, which are aligned with a preventative approach to the risks of opacity and algorithmic bias. [41] posits that the amalgamation of artificial intelligence (AI) and blockchain signifies a substantial enhancement in transparency and traceability, thereby complementing the study's observations on the significance of ethical audits and dynamic supervision models. However, while Arham's analysis is focused on the technical challenges of integrating emerging technologies, the study emphasises the regulatory implications and the need for adaptive governance standards.

This discrepancy underscores the necessity for multidimensional approaches that encompass technical, legal and organisational perspectives within the field. [42] identifies the diversity of regulatory approaches in different jurisdictions and warns of the urgency of flexible policies that balance innovation and consumer protection. This point finds concurrence with the study's proposal for the development of dynamic and universal regulatory frameworks that demonstrate responsiveness to emergent risks, including algorithmic discrimination and the paucity of explainability of automated systems. The comparison demonstrates that, despite regulatory advances, persistent gaps remain that necessitate enhanced collaboration between developers, authorities and audit organisations.

4.3 Conceptual framework proposal

Figure 7 presents, in a synthetic way, the conceptual framework proposed to guide the responsible adoption of artificial intelligence in financial auditing. The model articulates five core dimensions, namely the identification of existing regulatory frameworks, the application of key legal principles, the definition of legal responsibilities, the incorporation of emerging regulatory proposals, and the promotion of positive impacts. Each dimension establishes operational guidelines and evaluation mechanisms to ensure regulatory coherence, transparency, accountability, and efficiency. The approach under discussion seeks to consolidate institutional trust and strengthen adaptive governance in the face of technological challenges.

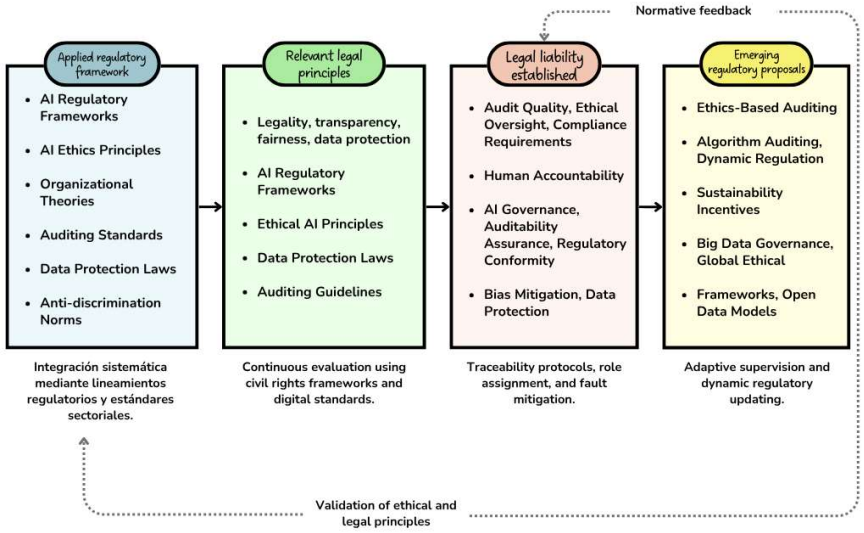

Figure 7. The present paper sets out the Integrated AI Governance Framework. The following is a detailed exposition of the subject.

The conceptual framework integrates the main findings derived from the systematic literature review in a sequential and logical way. Firstly, the regulatory frameworks applied are identified, where AI Regulatory Frameworks, ethical principles and organisational theories predominate, constituting the regulatory basis for the adoption of AI technologies. These elements are articulated with the relevant legal principles, legality, transparency, equity and data protection, which demand a continuous evaluation of regulatory and ethical compliance through international standards and sectoral guidelines.

It is evident that, on the basis of the aforementioned normative and principled elements, the framework moves towards defining legal responsibility. In addition, it assigns clear roles to auditors, developers and organisations through mechanisms that ensure traceability, audit protocols and regulatory compliance requirements. In response to technological evolution, emerging regulatory proposals such as algorithmic auditing, dynamic regulation and global ethical frameworks are incorporated, which in turn influence the initial regulatory system. Finally, the model contemplates the documented positive impacts, such as the improvement in operational efficiency, accuracy, risk mitigation and strengthening of governance, which function as key indicators to measure the effectiveness of the regulatory strategies implemented.

4.4 Implications

The findings of this research have implications for the theoretical, regulatory and professional domains. From a theoretical perspective, the findings indicate a necessity to update the extant frameworks that explain the interaction between artificial intelligence and financial auditing. Evidence indicates that conventional models of internal control, professional accountability, and regulatory oversight are inadequate in addressing the complexity introduced by automated systems. This scenario necessitates theories that integrate technical, legal and ethical dimensions in a coherent manner. The integration of artificial intelligence has the potential to transform the execution of audit procedures, modify the perception of trust, and introduce the notion of shared responsibility between humans and systems. This aspect presents an opportunity to construct models that recognise the hybrid nature of verification processes and incorporate variables such as algorithmic opacity, decision traceability, and the assignment of legal responsibility in the event of systemic failures.

In the regulatory domain, the findings underscore the pressing need to update and harmonise regulatory frameworks that govern the application of artificial intelligence in auditing. The

identification of legal principles, such as transparency, legality and data protection, in conjunction with the existence of emerging regulatory proposals, serves to confirm that regulatory evolution does not advance at the same pace as technological innovation. This discrepancy can potentially engender legal risks, conflicting interpretations, and an absence of clarity regarding the obligations of auditors, system developers, and user organisations. It is imperative for supervisory authorities to devise dynamic frameworks that combine flexibility and legal certainty. Such frameworks should include mechanisms for constant updating, ethical audit protocols, guidelines on algorithm explainability, and guidelines to mitigate bias and automated discrimination. Concurrently, there is a necessity to promote international standards that facilitate regulatory interoperability and cross-border cooperation.

From a pragmatic standpoint, the research yields direct ramifications for the auditing profession, financial organisations, and technology developers. The extant literature demonstrates that artificial intelligence offers concrete operational benefits, including increased efficiency, improved risk detection, and strengthened accountability. The challenges posed by this approach include the necessity for specialised training, the updating of methodologies that integrate continuous algorithm validation, and the delineation of responsibilities in the event of failures or biases. Organisations that adopt these technologies will need to invest in internal capabilities that allow them to independently assess the reliability of systems and maintain active monitoring mechanisms. This preventive approach is essential to sustain stakeholder trust and protect the integrity of financial processes.

As preliminary recommendations, it is proposed that regulators prioritise the development of guides that facilitate the integration of artificial intelligence, in conjunction with training programmes that enhance technical and ethical competencies. It is further proposed that companies establish governance protocols that include periodic audits, risk management derived from the use of sensitive data and active transparency practices before users and supervisors. In principle, researchers must advance in the construction of models that explore the relationship between trust, automation and legal responsibility, as well as in the development of indicators that measure the impact on the quality of audits. Finally, it is recommended that the actors of the ecosystem promote spaces for dialogue and cooperation to generate consensus and practices that favour a responsible and effective use of artificial intelligence in financial auditing.

4.5 Limitations

It is imperative to acknowledge the limitations of the study when evaluating its results. From a methodological standpoint, the review concentrated on publications that are indexed in databases such as Scopus and Web of Science. This approach precluded the inclusion of grey literature, institutional reports, and non-indexed regulatory documents that offer complementary perspectives. The exclusive reliance on studies conducted in English and Spanish introduces a potential language bias that serves to reduce the geographic and cultural diversity of the evidence reviewed. It is evident that a publication bias is also in operation. This is characterised by the fact that papers containing positive or innovative findings tend to be disseminated more frequently than those that describe limitations or failures.

With regard to the interpretation of the findings, it should be noted that these reflect trends and regulatory proposals which are subject to constant evolution. Consequently, the applicability of the findings varies according to the legal and technological context of each country. It is imperative to exercise caution when generalising, in view of the heterogeneity of regulatory practices, levels of technological maturity, and institutional structures of the environments in which artificial intelligence is adopted in financial auditing. These limitations underscore the necessity for future research that encompasses a broader scope and contrasts evidence across diverse contexts.

4.6 Lines of future research

Future research on artificial intelligence in financial auditing should be aimed at delving into the relationship between regulatory frameworks, legal liability and operational impacts of automated systems. A priority line is to develop empirical studies that analyze, with quantitative methods and

case studies, how the application of ethical audits and dynamic regulatory frameworks affects institutional trust and the perception of transparency of stakeholders. These studies can incorporate comparative metrics across jurisdictions to identify contextual factors that facilitate or limit the responsible adoption of artificial intelligence. Another relevant direction is to examine the effectiveness of algorithmic explainability mechanisms and their role in reducing legal and reputational risks. In this sense, it is advisable to explore tools that allow continuous auditing of automated decision-making and evaluate the ability of human auditors to supervise complex systems. The creation of indicators that measure the level of ethical alignment and regulatory efficiency will strengthen the evidence base that supports regulatory frameworks. From a regulatory perspective, it is pertinent to study the evolution of public policies that regulate artificial intelligence in the financial sector.

It is recommended that future research on the application of artificial intelligence in the domain of financial auditing should focus on the examination of the relationship between regulatory frameworks, legal liability and the operational impacts of automated systems. A priority line of enquiry is to develop empirical studies that analyse, using quantitative methods and case studies, how the application of ethical audits and dynamic regulatory frameworks affects institutional trust and the perception of transparency among stakeholders. These studies have the capacity to incorporate comparative metrics across various jurisdictions in order to identify contextual factors that facilitate or limit the responsible adoption of artificial intelligence. Another pertinent direction for research is to examine the effectiveness of algorithmic explainability mechanisms and their role in reducing legal and reputational risks. In this regard, it is recommended to investigate tools that facilitate continuous auditing of automated decision-making processes and to assess the capacity of human auditors to oversee complex systems. The creation of indicators that measure the level of ethical alignment and regulatory efficiency will strengthen the evidence base that supports regulatory frameworks. From a regulatory perspective, it is pertinent to study the evolution of public policies that regulate artificial intelligence in the financial sector.

A comparative review of legal frameworks across different regions has the potential to identify practices and principles that can be integrated into international standards. It is further recommended that the role of cross-border cooperation in establishing flexible policies that balance innovation and the protection of fundamental rights be investigated. From a pragmatic standpoint, subsequent research endeavours may concentrate on the evaluation of the organisational capabilities that are imperative for the integration of AI-based audit systems. The analysis of training processes, cultural change and technological adoption in organisations of different sizes will allow for the design of more effective implementation strategies. Furthermore, it is recommended that pilot experiences which document the benefits and limitations of artificial intelligence in auditing be explored. Such experiences may include the effect of artificial intelligence on cost reduction, improved reporting quality, and decision traceability. Finally, it is imperative to advance in the construction of theoretical models that integrate the technical, legal and social dimensions of digital auditing. It is imperative that these models take into consideration the interaction between trust, shared responsibility and organisational resilience to emerging risks. Furthermore, these models must propose adaptive governance frameworks capable of evolving with technological progress.

5 Conclusions

The findings of this study demonstrate that the integration of artificial intelligence within the domain of financial auditing engenders a transformation that extends beyond the realm of technology, thereby redefining the supervisory logics and the institutional trust that underpins financial systems. The diversity of regulatory perspectives and legal approaches demonstrates that the debate on its application remains in a state of development and requires greater conceptual and operational precision. This context invites a re-evaluation of the boundaries between the autonomy of systems and

the responsibility of human actors, as well as an assessment of how organisational culture and the degree of digital maturity affect the effectiveness of emerging solutions.

The coexistence of policy proposals and governance tools demonstrates the necessity to articulate dynamic and adaptable frameworks that respond to the context without imposing constraints that stifle innovation. The development of professional capacities and the establishment of forums for inter-institutional dialogue are prerequisites for the configuration of audit environments that integrate advanced technologies in an ethical and transparent manner.

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