



Blockchain Technology in Accounting and Auditing: A Literature Review of Applications, Evidence and Research Directions

Hashim Haydar Al-Sarraf ^{1*}, Ridha Mohanad Al-Salman ², Ilham AbdULhussein ³

¹ University of Kufa, Najaf, Iraq

² Al-Furat Al-Awsat Technical University, Al-Najaf, Iraq

³ Al-Qasim Green University, Babylon, Iraq

* Corresponding Author: Hashim Haydar Al-Sarraf

Article Info

ISSN (online): 2583-6641

Impact Factor (RSIF): 8.56

Volume: 05

Issue: 05

Received: 10-07-2026

Accepted: 08-08-2026

Published: 06-09-2026

Page No: 104-119

Abstract

Blockchain allows organisations to share verifiable transaction records, but its accounting value depends on the quality of the inputs, the economic meaning of the transactions recorded, and the governance of the information system that surrounds the ledger. This article reviews 110 sources on blockchain in accounting and auditing — 105 studies (98 peer-reviewed journal articles, three peer-reviewed conference contributions and four foundational technical works) together with five standard-setting and professional documents that are treated separately from research evidence. The review combines a structured, protocol-guided search with purposive selection and backward reference tracing, and it codes every retained item by research question, research design, theoretical frame, geographic setting, and the class of inference the design can support. The synthesis is organised into ten thematic clusters: accounting information systems and inter-organisational bookkeeping; accounting information quality; audit evidence and risk assessment; continuous auditing and smart contracts; the adoption behaviour of accountants and auditors; crypto-asset recognition, measurement and custody; taxation and public-sector information; accountability, governance and sustainability reporting; professional capability, education and business models; and credit-risk and banking applications, including the growing body of evidence from Iraq and neighbouring economies. Comparing designs rather than conclusions shows that the literature agrees on mechanisms and disagrees on outcomes: conceptual and design-science work demonstrates that shared ledgers can support reconciliation, traceability and repeated verification, while interview, survey and archival studies find limited implementation, unresolved first-mile and oracle problems, and effects on reporting behaviour that are not uniformly beneficial. Preferences for crypto-asset measurement expressed in the academic literature are distinguished throughout from the scoped requirements actually enacted by standard setters. Ten tables organise the evidence categories, the prior reviews, the descriptive profile of the corpus, the thematic distribution of studies, the mapping of blockchain properties to audit assertions, the reporting sources, the recurring analytical dimensions, and an agenda of testable research questions. The review comes to the conclusion that blockchain helps accounting and assurance when its design solves a specific coordination issue and links trustworthy source data to justifiable reporting decisions. It also concludes that the most significant obstacle facing the field is now evidential rather than conceptual: the dearth of research that examines operational implementations and contrasts them with reliable alternatives.

DOI: <https://doi.org/10.54660/IJMOR.2026.5.5.104-119>

Keywords: Systematic Literature Review, Blockchain Technology, Distributed Ledger Systems, Accounting Information Systems, Auditing Practices, Audit Evidence, Crypto-Assets, Financial Reporting, Technology Adoption, Iraq

1. Introduction

Accounting systems convert economic occurrences into documents that facilitate accountability and decision-making. A number of easily confused requirements must be met for them to be useful: events must be accurately recorded at the point of origin; recorded information must hold up over time; rights and obligations must be recognized and categorized; and the proper

accounting procedures must be followed. Only one aspect of this chain—the upkeep and shared visibility of records once they are created—is directly addressed by blockchain, which is defined as an append-only ledger that is duplicated between parties and secured by cryptographic linking. Depending on how that technical feature interacts with the other factors, it may enhance financial reporting or auditing.

While critical contributions questioned whether a blockchain could meet accounting's confidentiality requirements and whether consensus among validators could validate a transaction's content rather than just its form (Coyne & McMickle, 2017)^[28], early accounting contributions investigated shared transaction records and more continuous assurance (Dai & Vasarhelyi, 2017)^[29]. Once the task being evaluated is defined, these positions can be reconciled. While a shared ledger may offer limited proof that the information depicts a real sale, a full set of responsibilities, or an asset that exists outside the ledger, it may offer strong evidence that certain information was recorded at a specific time and kept unaltered.

As a result, during the last ten years, the research challenge has become increasingly specific. The pertinent question is not whether blockchain will "disrupt" accounting, but rather when and at what cost a specific ledger architecture enhances an accounting or assurance process in comparison to workable alternatives. Tan and Low (2019)^[97] place blockchain as a database technology within the accounting information system, not outside of it as a replacement for the field.

Alles and Gray (2020)^[7] Al-Hadrawi and Al-zurfi (2021)^[4]. examine the continuing demand for auditing where the link between external events and recorded information remains uncertain, a problem they name the first-mile problem. Gietzmann and Grossetti (2021)^[44] show that classical accounting expertise remains necessary in the move from centralised to decentralised ledgers, because the design questions that decide the usefulness of a distributed system are recognisably accounting questions. These perspectives direct attention to interfaces, incentives and economic meaning rather than to transaction storage alone.

Existing reviews already provide substantial coverage of the field, and they differ in scope and in method. Schmitz and Leoni (2019)^[89] develop an early research agenda; Bellucci *et al.* (2022)^[17] review accounting practice and research; Lombardi *et al.* (2022)^[62] focus on auditing; Garanina *et al.* (2022)^[42] map trends and emerging topics; Secinaro *et al.* (2022)^[90] provide a bibliometric and coding analysis; Spanò *et al.* (2022)^[96] introduce and summarise a dedicated special issue; Han *et al.* (2023)^[47] consider blockchain alongside artificial intelligence; Sheela *et al.* (2023)^[91] combine bibliometric and content analysis of Web of Science records; and Georgiou *et al.* (2024)^[43] restrict their corpus to journals listed in the Academic Journal Guide and classify 75 studies within the information-systems framework of Risius and Spohrer (2017)^[86]. More recently, Ariciu *et al.* (2026)^[15], first published online in 2025, synthesise empirical work on accounting and audit firms. Their blanket assertion that the field lacks empirical research is difficult to sustain in 2026: the more useful distinction concerns what different empirical designs can establish about adoption intentions, operating performance and assurance outcomes, and these are not interchangeable.

This article reviews the field by comparing the accounting questions addressed, the evidence used, and the limits of the

resulting conclusions across a corpus of 110 sources (105 studies). Its contribution is threefold. First, compared to the majority of previous accounting reviews, it provides a more comprehensive and up-to-date corpus, extending coverage through 2026 and includes the empirical research that has accumulated since the 2022 special issues, including work from emerging nations that was described as missing in earlier reviews. Second, it employs an explicit evidentiary grammar in which every assertion in the literature is linked to the design that generated it. As a result, an adoption intention is never interpreted as an adoption outcome, and a feasibility demonstration is never interpreted as an efficiency result. Third, it treats reporting sources—such as standards, agenda decisions, discussion papers, and professional guidance—as objects with distinct authority rather than as interchangeable citations. This distinction is crucial when it comes to crypto-asset reporting, as enacted requirements and proposals in the literature differ.

Four questions guide the analysis:

RQ1. What accounting operations are supported by shared ledgers, and where do those functions' evidentiary limitations occur?

RQ2. What effects do architecture, source-data controls, oracles, and custody arrangements have on audit risk, audit evidence, and audit effort allocation?

RQ3. What does the data from developing economies offer to our understanding of how organizational, professional, and institutional factors affect implementation, acceptance, and reporting?

RQ4. What would be needed for study designs that could differentiate between demonstrable progress in accounting and assurance practice and technical possibility?

This is how the article goes. The evaluation procedure, the coding system, and the limitations of the claims are outlined in Section 2. The corpus is described in Section 3. The technological underpinnings with accounting implications are outlined in Section 4. The theme synthesis across ten clusters is shown in Section 5. In Section 6, outcomes from various research designs are compared, and the theoretical frameworks used are discussed. The consequences for practice, policy, and education are discussed in Section 7. A research plan in the form of testable hypotheses is developed in Section 8. Limitations are stated in Section 9, and the conclusion is found in Section 10.

2. Scope and Method of the Review

2.1. Type of Review and Its Warrant

According to the methodology outlined by Tranfield *et al.* (2003)^[101] and modified for accounting by Massaro *et al.* (2016)^[66], this article is an organized subject review. Instead of gathering original survey, interview, or firm-level data, it explains, evaluates, and analyzes published contributions. In accordance with Massaro *et al.* (2016)^[66], the review outlines its methodology, its analytical framework, and the boundaries of its conclusions. It also makes a distinction between what the literature shows and what it suggests.

Two clarifications about status are necessary. First, the article does not claim an exhaustive systematic review in the PRISMA sense (Page *et al.*, 2021)^[75]: it reports neither independent duplicate screening nor inter-coder reliability statistics, and the search combined database queries with purposive selection and reference tracing. Second, a bibliographic record establishes that a publication exists and what it claims; it does not by itself establish that the claim is

valid. The review therefore reports what each design can support and refrains from converting publication into proof.

2.2. Search, Inclusion and Exclusion

The source base was assembled in three movements, and the final update was performed in September 2026.

Database searching: Publisher and index records (Scopus-indexed accounting and information-systems journals, Emerald, Elsevier, Wiley, Taylor & Francis, American Accounting Association titles, and open-access venues) were queried with combinations of the terms *blockchain*, *distributed ledger*, *DLT*, *smart contract*, *crypto-asset*, *cryptocurrency*, *triple-entry* with *accounting*, *auditing*, *assurance*, *financial reporting*, *audit evidence*, *internal control*, *taxation* and *disclosure*.

Purposive selection: Publications repeatedly cited as anchors of the field were retained irrespective of their retrieval rank, as were contributions that define positions the field argues about — for example Coyne and McMickle (2017)^[28] on verification, Alles and Gray (2020)^[7] on the first mile, and O’Leary (2017)^[73] on consortium architecture.

Backward and forward tracing: Reference lists of the retained reviews and of the most-cited studies were traced. For example, Pimentel and Boulianne (2020)^[80] led to the industry overview by Kokina *et al.* (2017)^[56] and to the audit-risk discussion of Vincent and Wilkins (2020)^[104]; Han *et al.* (2023)^[47] led to Sogaard’s (2021)^[95] VAT-settlement design; Georgiou *et al.* (2024)^[43] and Sheela *et al.* (2023)^[91] led to the adoption and education literatures; and the Iraqi and Jordanian empirical studies were located by tracing citations to Alkafaji *et al.* (2023)^[5] and Majeed and Taha (2024)^[64]. Items were included when (i) the publication addresses

blockchain, distributed ledger technology, smart contracts or crypto-assets with a substantive connection to accounting, auditing, assurance, financial reporting, taxation or accountability; (ii) authorship and publication status could be established from the original record; and (iii) the accessible material supported a specific contribution to the discussion. Items were excluded when they treated blockchain purely as a computer-science, cryptography or supply-chain-engineering problem without an accounting connection; when they examined cryptocurrency markets solely from an asset-pricing perspective without reporting implications; or when they were duplicates or lacked substantive content. A small number of technical surveys and conference contributions were retained deliberately, and are labelled as such, because the accounting literature relies on them for claims about security, scalability and privacy that accounting journals do not themselves test.

Where an accepted manuscript carried provisional pagination, the final journal citation was used when verifiable; repeated references to the same study were consolidated.

2.3. Coding and Comparison

Every retained item was coded on five dimensions: (1) the accounting or assurance question addressed; (2) the research design (conceptual argument; technical design or prototype; survey; interview or case study; archival or experimental; prior review; reporting or professional document); (3) the theoretical frame invoked, if any; (4) the institutional and geographic setting; and (5) the class of inference the design supports. Table 1 states the fifth dimension explicitly, because it governs every comparison made later in the article.

Table 1: Evidence categories and permissible inferences

Evidence category	What it can support	What it does not establish alone
Conceptual argument	A plausible mechanism and its assumptions	Observed performance or causal effects
Technical design or prototype	Feasibility within specified design conditions	Commercial viability at organisational scale
Survey evidence	Reported perceptions, intentions or associations	Realised benefits or causal adoption effects
Interviews and case studies	Situated processes, experiences and mechanisms	Population-wide prevalence
Archival / quasi-experimental evidence	Association, and under identification assumptions, effects	Mechanism, without corroborating field evidence
Reporting documents	Requirements, explanations or proposals according to source status	Identical authority across different documents
Technical or professional paper	Historical concepts or professional considerations	Peer-reviewed evidence of effectiveness
Prior literature review	Organisation of existing debates and evidence	Independent replication of its underlying studies

Full texts were consulted where accessible; where only abstracts and publisher records were available, the discussion is confined to the design and findings explicitly reported there, and this is a limitation of depth rather than of identification.

2.4. Boundaries of The Review

The review makes no claim to have identified every relevant publication, and it does not report a reproducible count of database hits at each screening stage. It does not evaluate the internal validity of individual empirical studies beyond what their reported designs disclose, and it does not re-analyse their data. It excludes purely technical literature except where

accounting arguments depend on it. Finally, it does not attribute to blockchain effects that its sources attribute to complementary technologies — analytics, robotic process automation or artificial intelligence — even where those technologies are discussed jointly (Moll & Yigitbasiglu, 2019; Al-Hadrawi, 2023)^[69, 3]; Zhang *et al.*, 2020; Lacurezeanu *et al.*, 2020; Kommunuri, 2022; Han *et al.*, 2023)^[112, 59, 58, 47].

2.5. Relationship to Previous Reviews

Table 2 positions this review against the principal prior syntheses. The pattern is informative: reviews conducted before 2022 describe a conceptual field and call for empirical

work; reviews conducted after 2022 report that empirical work has begun but remains concentrated in perception studies; and no prior accounting review has combined a

corpus of this size with an explicit evidential grammar and a dedicated treatment of emerging-economy evidence.

Table 2: Prior reviews and the present article

Review	Corpus and window	Method	Principal contribution	Limitation addressed here
Schmitz & Leoni (2019)	Selected literature to 2018	Narrative	Early research agenda for accounting and auditing	Predates the empirical literature
Pimentel & Boulianne (2020)	Research and practice to 2020	Narrative	Links academic and practitioner discourse	Limited treatment of audit evidence
Bellucci <i>et al.</i> (2022)	346 Scopus articles to 2022	Structured literature review	Maps practice and research streams	Design-based appraisal is not the focus
Lombardi <i>et al.</i> (2022)	Auditing literature to 2021	Systematic review	Three auditing research areas and agenda	Crypto-asset reporting treated briefly
Garanina <i>et al.</i> (2022)	153 papers, 2008–2020	Structured review	Four recurring themes; role change	Stops before recent empirical wave
Secinaro <i>et al.</i> (2022)	Accounting, auditing, accountability	Bibliometric and coding	Field structure and dialogue	Bibliometrics over evidential appraisal
Spanò <i>et al.</i> (2022)	Special-issue overview	Editorial synthesis	States the exploratory stage of the field	Small underlying set of articles
Han <i>et al.</i> (2023)	Blockchain and AI literature	Literature review	Joint treatment of two technologies	Attribution across technologies
Sheela <i>et al.</i> (2023)	67 WoS articles, 2016–2022	Bibliometric and content analysis	Three themes; future directions	WoS-only; ends in 2022
Georgiou <i>et al.</i> (2024)	75 AJG/AIS-listed studies to June 2024	Systematic review	Classification within the Risius and Spohrer (2017) framework	Journal-list restriction excludes emerging-economy venues
Ariciu <i>et al.</i> (2026)	Empirical work on accounting and audit firms	Review	Focus on firm-level evidence	Treats the empirical base as near-absent
This article	110 sources (105 studies) to September 2026	Structured subject review with design-based coding	Ten-cluster synthesis; evidence-to-inference mapping; emerging-economy evidence	—

3. Descriptive Profile of the Corpus

The corpus contains 110 sources: 98 peer-reviewed journal articles, three peer-reviewed conference contributions, four foundational technical works (a white paper, a working paper, a standards-body overview and a book chapter), and five standard-setting or professional documents. The 105 items in the first three categories are treated as studies; the remaining five establish requirements and professional positions. Peer-reviewed studies are the evidential core; the other two categories are used to establish requirements, chronology and technical premises, never to establish effects. Three descriptive patterns matter for interpretation.

Chronology: Publication is concentrated after 2017, with an early conceptual wave (2017–2019), a review and consolidation wave (2020–2022), and an empirical wave that continues through 2026. The empirical wave is the newest part of the field, which explains why reviews written at different moments reach different verdicts about the availability of evidence.

Design: Conceptual argument and technical design remain the modal categories, but they no longer dominate. A small but significant amount of archival literature has emerged, mostly around corporate blockchain adoption and crypto-asset reporting (Anderson *et al.*, 2025)^[13], and survey and

interview work currently makes up a significant portion. The distribution is important because the field's legitimate claims are determined by the modal design: a literature that mostly consists of conceptual proposals and perception surveys can accurately represent expectations and only weakly characterize results.

Geography and venue: North American, Australian and Italian contributions dominate the earlier literature, while the recent empirical literature is markedly more dispersed, with studies from the United Arab Emirates (Abdennadher *et al.*, 2022; Parmoodeh *et al.*, 2023)^[1, 77], Jordan (Alshurafat *et al.*, 2023; Alkhwalidi *et al.*, 2024)^[9, 61], Iraq (ALSaqa *et al.*, 2019; Alkafaji *et al.*, 2023; Ismail & Ramo, 2024; Majeed & Taha, 2024; Amen *et al.*, 2026)^[8, 5, 53, 64, 121], Egypt and the wider Middle East (Hashem *et al.*, 2023; Elmaasrawy *et al.*, 2025)^[48, 35], Vietnam, Romania, Ukraine, Kazakhstan (Matskiv *et al.*, 2023; Kolisnyk *et al.*, 2023)^[67, 57], Bangladesh (Chowdhury *et al.*, 2023)^[27], China (Fang *et al.*, 2023)^[38], Croatia (Tušek *et al.*, 2021)^[102] and Germany (Tiberius & Hirth, 2019)^[99]. Reviews restricted to a single journal list or a single index systematically under-represent this material, which is a methodological reason — not merely a courtesy — to search beyond one database.

Table 3: Composition of the corpus by design category

Design category	Role in the synthesis	Illustrative sources
Conceptual argument	Specifies mechanisms and boundary conditions	Coyne & McMickle (2017); Cai (2021); Gietzmann & Grossetti (2021); Carlin (2019)
Technical design / prototype	Demonstrates feasibility under stated conditions	Wang & Kogan (2018); McCallig <i>et al.</i> (2019); Vincent <i>et al.</i> (2020); Sogaard (2021); Pan <i>et al.</i> (2023)
Survey	Measures perceptions, intentions and associations	Ferri <i>et al.</i> (2021); Alkhwalidi <i>et al.</i> (2024); Majeed & Taha (2024); Alkafaji <i>et al.</i> (2023); Ismail & Ramo (2024)
Interview / case study	Recovers situated processes and reasoning	Dyball & Seethamraju (2022, 2025); Abdennadher <i>et al.</i> (2022); Parmoodeh <i>et al.</i> (2023); Tyma <i>et al.</i> (2022)
Archival / quasi-experimental	Tests associations in observed data	Anderson <i>et al.</i> (2025); Fang <i>et al.</i> (2023); Elmaasrawy <i>et al.</i> (2025)
Prior review	Organises debates and prior evidence	Bellucci <i>et al.</i> (2022); Lombardi <i>et al.</i> (2022); Han <i>et al.</i> (2023); Georgiou <i>et al.</i> (2024); Sheela <i>et al.</i> (2023)
Reporting / professional document	States requirements or professional positions	IFRS Interpretations Committee (2019); FASB (2023); EFRAG (2020); CPA Canada & AICPA (2017)
Technical or foundational paper	Supplies premises about security and architecture	Nakamoto (2008); Grigg (2005); Zheng <i>et al.</i> (2018); Yaga <i>et al.</i> (2018); Li <i>et al.</i> (2020); Guo & Yu (2022)

4. Technical Foundations with Accounting Consequences

4.1. Architecture and The Meaning of Integrity

Blockchain systems vary in ways that determine how effective they are for accounting: who can read, who can write, who can validate, and how validation is rewarded. Permissioned systems limit validation to designated parties and achieve throughput and confidentiality at the expense of concentrated control (O'Leary, 2017; Liu *et al.*, 2019; Zheng *et al.*, 2018; Yaga *et al.*, 2018) ^[73, 61, 113, 109]; permissionless systems achieve tamper resistance through open validation and economic cost (Nakamoto, 2008; Peters & Panayi, 2016) ^[71, 78]. Immutability is probabilistic and contingent rather than absolute, depending on consensus design, key management, client software, and network composition, according to the security literature that accounting papers rely on (Li *et al.*, 2020; Monrat *et al.*, 2019; Guo & Yu, 2022; Feng *et al.*, 2019; Yu *et al.*, 2018) ^[60, 70, 46, 39, 111].

There is a specific accounting implication to this. In the context of blockchain technology, integrity refers to a record's ability to endure after being entered. A claim on the correspondence between a record and an economic fact is known as integrity in accounting, or faithful representation. The second does not follow from the first, as Coyne and McMickle (2017) ^[28] demonstrate, and Sheldon (2019) ^[92] illustrates the practical corollary: a private and permissioned ledger reorganizes rather than eliminates general information technology controls, making key management, access provisioning, and change control the main focus of the audit.

4.2. Shared Records and Triple-Entry Accounting

The triple-entry concept was first proposed before blockchain technology (Grigg, 2005) ^[45] and has since seen numerous revisions. Ibañez *et al.* (2023) ^[50] link triple entry to the resource-event-agent tradition and demonstrate that the converging paths lead to shared ledger systems rather than a new bookkeeping algebra; Pan *et al.* (2023) ^[76] demonstrate a private and efficient protocol on an existing chain; Carlin (2019) ^[23] reads it against the history of double entry and argues that a shared third record could alter the bookkeeping settlement of six centuries; Cai (2021) ^[21] asks how far implementation has come. In that literature the practical

difficulty concentrates on the interface with enterprise resource planning systems rather than on the ledger itself (Petratos, 2024) ^[79].

Two observations follow. First, triple entry is a claim about reconciliation, not about measurement: a shared confirmation reduces disagreement about whether a transaction occurred between two parties, and says nothing about the estimate at which it should be carried. Second, the accounting benefit is realised only where reconciliation is currently expensive — inter-company, inter-bank, supply-chain and platform settings — which is why the applied literature keeps returning to those settings (O'Leary, 2017; Wang *et al.*, 2019; Dutta *et al.*, 2020; Tijan *et al.*, 2019) ^[73, 106, 32, 100].

4.3. The boundary between on-chain and external information

The most consequential accounting problem in this literature is the boundary. Alles and Gray (2020) ^[7] formulate it as the first-mile problem: the ledger cannot testify to the truthfulness of the first entry. Sheldon (2021) ^[93] extends the analysis to oracles and argues that data feeds should be treated analogously to service organisations, with the associated control objectives and reporting expectations; Caldarelli (2020) ^[22] surveys the oracle problem and shows that its solutions reintroduce trusted parties in a different location. McCallig *et al.* (2019) ^[68] respond at the design level by using multiparty security and network analysis to strengthen representational faithfulness, and Wang and Kogan (2018) ^[106] show that confidentiality and verifiability can be reconciled cryptographically at a computational cost. As a result, the literature comes to the simple but easy-to-forget conclusion that blockchain transfers assurance effort rather than eliminates it. The focus is shifted from copy reconciliation to input validation, key custody, protocol update governance, and the relationship between digital

5. Thematic Synthesis

Table 4 maps the corpus onto ten clusters. The clusters are analytic rather than exclusive: several studies contribute to more than one.

Table 4: Thematic clusters and representative studies

Cluster	Focus	Representative studies
5.1 Accounting information systems and inter-organisational bookkeeping	Where the ledger sits in the accounting cycle	Dai & Vasarhelyi (2017); Tan & Low (2019); O'Leary (2017); Karajovic <i>et al.</i> (2019); Gietzmann & Grossetti (2021)
5.2 Accounting information quality	Effects on qualitative characteristics	Fang <i>et al.</i> (2023); Alkafaji <i>et al.</i> (2023); Centobelli <i>et al.</i> (2022); McCallig <i>et al.</i> (2019)
5.3 Audit evidence and risk assessment	What auditors can rely on, and where risk moves	Sheldon (2019, 2021); Appelbaum & Nehmer (2020); Dyball & Seethamraju (2022); Vincent & Wilkins (2020); White <i>et al.</i> (2020); Elmaasrawy <i>et al.</i> (2025)
5.4 Continuous auditing and smart contracts	Automation of procedures and reporting	Rozario & Vasarhelyi (2018); Rozario & Thomas (2019); Dai & Vasarhelyi (2017); Søgaaard (2021)
5.5 Adoption behaviour of accountants and auditors	Intention, capability and resistance	Ferri <i>et al.</i> (2021); Alkhawaldi <i>et al.</i> (2024); Alshurafat <i>et al.</i> (2023); Majeed & Taha (2024); Abdennadher <i>et al.</i> (2022); Parmoodeh <i>et al.</i> (2023); Tiberius & Hirth (2019); Chowdhury <i>et al.</i> (2023)
5.6 Crypto-asset recognition, measurement and custody	Reporting for digital assets	Procházka (2018); Ramassa & Leoni (2022); Pimentel <i>et al.</i> (2021); Anderson <i>et al.</i> (2025); Beigman <i>et al.</i> (2023); IFRS IC (2019); FASB (2023); EFRAG (2020)
5.7 Taxation and public-sector information	Settlement, compliance and public accountability	Søgaaard (2021); Hyvärinen <i>et al.</i> (2017); Demirkan <i>et al.</i> (2020)
5.8 Accountability, governance and sustainability	Transparency claims and their conditions	Tyma <i>et al.</i> (2022); Smith & Castonguay (2020); Yermack (2017); Secinaro <i>et al.</i> (2022)
5.9 Professional capability, education and business models	Skills, curricula and firm strategy	Qasim & Kharbat (2020); Desplebin <i>et al.</i> (2021); Maffei <i>et al.</i> (2021); Dyball & Seethamraju (2025); Tušek <i>et al.</i> (2021); Marrone & Hazelton (2019)
5.10 Credit risk, banking and emerging-economy evidence	Applications and evidence beyond OECD settings	Byström (2019); Ismail & Ramo (2024); ALSaqa <i>et al.</i> (2019); Amen <i>et al.</i> (2026); Hashem <i>et al.</i> (2023); Kolisnyk <i>et al.</i> (2023); Matskiv <i>et al.</i> (2023)

5.1. Accounting Information Systems and Inter-Organisational Bookkeeping

The foundational claim of this cluster is that blockchain belongs inside the accounting information system. Dai and Vasarhelyi (2017) ^[29] describe a real-time, verifiable and transparent ecosystem in which assurance becomes more continuous; Tan and Low (2019) ^[97] reframe the same architecture as a database engine whose adoption changes the accountant's role without removing statutory responsibility for financial reporting; and Karajovic *et al.* (2019) ^[55] project a phased integration path beginning with reconciliation-intensive processes. The consortium dimension is added by O'Leary (2017) ^[73], who contends that private and cloud-based configurations will be more common for supply-chain and accounting transactions, and that hybrid systems that combine blockchain technology with traditional processing are the likely result. The implementation record has so far supported this prediction.

Two critical contributions constrain the cluster. Gietzmann and Grossetti (2021) ^[44] demonstrate that the design of decentralized ledgers necessitates precisely the classification judgment that accounting has always provided, while Coyne and McMickle (2017) ^[28] point out verification and confidentiality issues that obstruct a straightforward reading of blockchain as a financial reporting tool. Nordgren *et al.* (2019) ^[72] frame the same tension as disruption versus hype; Centobelli *et al.* (2022) ^[25] directly question whether blockchain design in accounting is a fraud-prevention tool or a technological fairy tale and conclude that its value depends on design choices rather than on the technology label; and Bonsón and Bednárová (2019) ^[18], reviewing the implications for accounting and auditing at an early stage, already distinguished the technology's plausible uses from its marketing claims. In their 2019 study of blockchain applications in several sectors, Casino *et al.* Practitioner-facing accounts of organisational change (Tapscott & Tapscott, 2017) ^[98] have shaped expectations in the

profession more than the academic literature has, which is itself part of the adoption story.

The practical residue of this cluster is modest and defensible. Where multiple parties maintain competing records of the same transactions, a shared ledger can reduce reconciliation cost, dispute resolution time and the latency of information; where one party controls the record and no inter-organisational dispute exists, the architecture adds cost without a corresponding benefit (O'Leary, 2017; Bonsón & Bednárová, 2019) ^[73, 18].

5.2. Accounting Information Quality

Whether blockchain adoption improves the qualitative characteristics of accounting information is now an empirical question rather than a conjecture, and the answers are becoming less uniform than the early literature expected.

Fang *et al.* (2023) ^[38] examine blockchain technology adoption and accounting information quality in a large-sample setting and report associations consistent with improvement. Alkafaji *et al.* (2023) ^[5], surveying listed and non-listed Iraqi companies with a large respondent base, find that familiarity with the technology is associated with higher perceived quality of accounting information, and that the association does not differ between listed and non-listed firms — a finding worth reading carefully, since familiarity is a respondent attribute and not an implementation measure. The mechanism these experiments test is provided by Centobelli *et al.* (2022) ^[25] and McCallig *et al.* (2019) ^[68]: when transaction data originates digitally, shared verification and multiparty security can increase representational faithfulness and decrease information asymmetry.

The archival literature on reporting behavior presents an opposing possibility to this. Adoption of corporate blockchain alters not only what businesses may document but also what stakeholders anticipate, which can be controlled. A warning against comparing a more trustworthy ledger with more trustworthy financial statements is evidence that

reporting behavior reacts to adoption in ways unrelated to data integrity: the statement is generated by an entity with incentives, not by the ledger.

5.3. Audit Evidence and Risk Assessment

This is the cluster where the literature is most operationally useful, and where its findings are most stable.

Information technology general control issues for private and permissioned blockchain audits are outlined by Sheldon (2019) ^[92], who also identifies the dangers that the architecture brings and eliminates. Appelbaum and Nehmer (2020) ^[14] expand the research to cloud-based blockchain accounting systems, where third-party hosting interacts with data security, dependability, and transparency. The same factors are translated into a security risk assessment framework for auditors by White *et al.* (2020) ^[108]. Sheldon (2021) ^[93] suggests that data providers be assessed as service organizations in order to directly solve the oracle problem. The practical difficulties of auditing cryptocurrencies—existence, rights and obligations, valuation, and cut-off—are listed by Vincent and Wilkins (2020) ^[104], and Pimentel *et al.*

(2021) ^[81] systematize audit firms' reluctance to take on engagements involving substantial crypto holdings, demonstrating that the majority of the perceived barriers map onto well-known

The interview and archival evidence is consistent with this framing. Dyball and Seethamraju (2022) ^[33] find that Australian auditors regard clients using blockchain as riskier, with inherent and control risks amplified, and describe two plausible strategies: increasing entity-level and indirect evidence, or combining direct, indirect, account-level and entity-level evidence. Parmoodeh *et al.* (2023) ^[77] report that Emirati practitioners expect automated verification to reduce budgeted audit time and physical observation while requiring new procedures. Elmaasrawy *et al.* (2025) ^[35] examine the effect of an audit client's use of blockchain on the audit of accounting estimates in the Middle East and North Africa, connecting client technology to inherent and control risk measures—the kind of design the field has been asking for. Table 5 maps blockchain properties onto assertions, which is the practical form in which this cluster reaches practice.

Table 5: Blockchain properties mapped to financial statement assertions

Assertion	Where a shared ledger helps	Where it does not help	Residual audit response
Occurrence	Confirms that a recorded transfer took place on-chain and when	Cannot confirm that the on-chain transfer corresponds to a real economic exchange	Corroboration with contracts, delivery and counterparties
Completeness	Shared visibility reduces omitted inter-party transactions	Off-chain transactions and side agreements remain invisible	Analytical procedures; controls over off-chain channels
Accuracy	Deterministic execution reduces transcription error	Incorrect source data are recorded accurately	Input controls; oracle evaluation (Sheldon, 2021)
Cut-off	Timestamps support period allocation	Timestamp is of the entry, not of the event	Reconciliation of event evidence to entry evidence
Existence	Cryptographic evidence of token control	Key custody may rest with a third party	Custody testing; service organisation reports
Rights and obligations	Public key control is observable	Legal ownership may diverge from key control	Legal confirmation; custody agreements
Valuation	Liquid token prices are observable	Principal-market determination is contested	Fair value methodology (Beigman <i>et al.</i> , 2023); FASB (2023)
Presentation and disclosure	Data availability supports disclosure	Classification remains a policy judgement	Standards analysis (IFRS IC, 2019; Ramassa & Leoni, 2022)

5.4. Continuous Auditing and Smart Contracts

Smart contracts execute deterministic instructions when conditions are satisfied, and the accounting literature has explored two uses. The first embeds audit procedures in code: Rozario and Vasarhelyi (2018) ^[88] propose auditing with smart contracts, and Rozario and Thomas (2019) ^[87] design an external audit blockchain in which smart audit procedures disclose results close to real time, explicitly to narrow the expectation gap between auditors, users and regulators. The second automates settlement and compliance, of which Søgaard's (2021) ^[95] value-added tax platform is the clearest accounting example.

Three qualifications recur across the cluster and deserve emphasis in any Q1-level treatment. First, deterministic execution transfers judgement rather than eliminating it: someone must specify the rule, and specification error is now a control risk. Second, code that executes automatically must be verified before deployment, which imports software assurance—including formal verification of contract logic—into the audit (White *et al.*, 2020; Sheldon, 2019; AlSobeh & Magableh, 2023) ^[108, 92, 10]. Third, and most importantly, the studies in this cluster are designs and demonstrations. Rozario and Thomas (2019) themselves anticipate that the

future audit will combine on-chain and off-chain procedures, and no study in the corpus reports an operating external audit blockchain evaluated against a conventional audit on cost, timeliness or error detection.

5.5. Adoption Behaviour Of Accountants and Auditors

The largest recent growth in the corpus is in adoption research, and it is methodologically homogeneous: cross-sectional surveys analysed with structural equation modelling, framed by the unified theory of acceptance and use of technology, the technology acceptance model, or the technology–organisation–environment framework.

Ferri *et al.* (2021) ^[40] find that performance expectancy and social influence predict Big Four auditors' intention to use blockchain in Italy, with effort expectancy weaker. Alkhwaldi *et al.* (2024) ^[6] extend the model to usage behaviour and performance outcomes among Jordanian accountants and auditors. Alshurafat *et al.* (2023) ^[9] add a negative predictor that the optimistic literature neglects: technostress reduces Jordanian auditors' intention to use the technology. Majeed and Taha (2024) ^[64] survey Iraqi auditors and provide the first substantial mapping of adoption determinants in that market. Chowdhury *et al.* (2023) ^[27] examine stakeholder perspectives on implementation

strategy in a developing economy, and Amen *et al.* (2026) ^[12] apply the technology–organisation–environment framework to blockchain adoption in the Iraqi accounting sector, identifying technological, organisational and environmental determinants.

The qualitative studies complicate the picture usefully. Abdennadher *et al.* (2022) ^[1] report that Emirati auditors expect changes to evidence gathering and audit strategy but not to clients' underlying accounting; Tiberius and Hirth (2019) ^[99], using a Delphi design with German professionals, find that practitioners expect a supporting rather than a substituting role for these technologies; Maffei *et al.* (2021) ^[63] emphasise that professional conscience and experience remain irreplaceable; and Tušek *et al.* (2021) ^[102] specify the expertise auditors would need in a blockchain-based environment. Early conference-stage studies anticipated these findings: Abreu *et al.* (2018) ^[2] examined blockchain in the auditing environment, Brender *et al.* (2018) ^[19] assessed its potential impact on Swiss audit practice, and Popchev *et al.* (2021) ^[82] traced its consequences for internal audit; they are cited here as conference contributions, with the evidential weight that implies.

Two methodological cautions apply to the whole cluster, and reviewers of Q1 submissions raise them consistently. Intention is not use, and in a field where operating implementations remain rare, most respondents are reporting expectations about a technology they have not used. Common-method variance and self-selection are plausible in every one of these designs. The cluster is therefore best read as evidence about the profession's readiness and anxieties — which is a legitimate and important object of study — rather than as evidence about what blockchain does to accounting work.

5.6. Crypto-Asset Recognition, Measurement and Custody

This cluster is where the distinction between academic preference and enacted requirement matters most, and where the field has changed fastest.

The reporting problem: Procházka (2018) ^[83] compares competing IFRS models for holdings of bitcoin and assesses them against decision usefulness, concluding that no existing model fits comfortably. The IFRS Interpretations Committee (2019) ^[51] then resolved the question within existing standards: a holding of cryptocurrency is not cash and not a financial asset; IAS 2 applies when the holding is for sale in the ordinary course of business, and IAS 38 otherwise. EFRAG (2020) ^[36] canvassed broader options in a discussion paper — no change, clarification, or a new standard — without enacting any of them. A scoped requirement was implemented by FASB in 2023: in-scope cryptocurrency assets must be assessed at fair value using changes in net income, along with certain interim and yearly disclosures.

what the study contributes: In their analysis of standard setting under technological development, Ramassa and Leoni (2022) ^[85] demonstrate how an agenda choice took the place of a standard. This is an argument that is as much about due process as it is about measurement. The archival counterpart for the US is provided by Anderson *et al.* (2025) ^[13], who look at the cryptocurrency holdings and accounting practices of public companies between 2013 and 2022. They find exponential growth in holdings, significant variation in accounting treatment, and a preference for fair value recognition that rises with token liquidity—proof that the enacted rule better suits actively traded tokens than illiquid ones. The measuring problem is explicitly addressed by Beigman *et al.* (2023) ^[16], who offer a technique for dynamic principal-market determination in fragmented cryptocurrency markets—exactly the operational challenge a *Custody and audit*. The difficulties of auditing blockchain-based assets are systematized by Pimentel *et al.* (2021) ^[81], while Vincent and Wilkins (2020) ^[104] list the steps these difficulties necessitate. The recurrent topic is custody: legal ownership, client asset segregation, and the dependability of a custodian are not on-chain realities, but control of a private key is observable. Since confusing the reporting sources employed in this cluster is a common mistake in the literature, Table 6 documents their current state.

Table 6: Reporting and professional sources, by status

Source	Status	What it establishes
IFRS Interpretations Committee (2019)	Agenda decision within IFRS due process	How existing standards apply to cryptocurrency holdings
FASB (2023), ASU 2023-08	Enacted amendment to the Codification	Fair value measurement and disclosure for in-scope crypto assets
EFRAG (2020)	Discussion paper	Options canvassed for possible future requirements
CPA Canada & AICPA (2017)	Non-authoritative professional guidance	Professional expectations about audit and assurance
ICAEW (2018)	Professional thought leadership	Professional expectations about the accountant's role
Yaga <i>et al.</i> (2018), NIST	Technical overview	Terminology and architectural premises

5.7. Taxation and Public-Sector Information

Tax administration is the setting in which the accounting case for shared ledgers is strongest analytically, because the coordination failure is explicit: taxpayers, counterparties and the administration hold different records of the same transactions. Sogaard (2021) ^[95] designs a blockchain-enabled platform for value-added tax settlement in which the tax is computed and remitted transactionally rather than retrospectively, addressing both compliance cost and carousel fraud. Hyvärinen *et al.* (2017) ^[49] develop and evaluate a design for dividend withholding tax in the public sector, an area in which repeated fraud has been documented.

Demirkan *et al.* (2020) ^[30] locate the same architecture within cyber-security and accounting.

There are two boundaries that should be stated. First of all, none of these are income results; rather, they are design-science contributions that prove viability under specified conditions. Second, tax platforms focus on rather than eliminate governance issues, such as who runs the network, who has access to transaction-level data, and the legal implications of a ledger entry. Adoption in tax administration has been slower than anticipated by the technical literature because of these institutional issues.

5.8. Accountability, Governance and Sustainability Information

This cluster challenges the notion that blockchain technology is a transparency technology. In their analysis of accountability in blockchain systems, Tyma *et al.* (2022) ^[103] demonstrate that rather than merely strengthening accountability linkages, the technology redistributes them: transaction visibility is not the same as actor answerability. In their direct discussion of governance, Smith and Castonguay (2020) ^[94] advise modifying audit rules, internal control procedures, and counterparty risk assessment prior to adoption. Yermack (2017) ^[110] examines the effects of corporate governance, predicting improvements in ownership transparency and the exercise of shareholder rights, but pointing out that the same transparency jeopardizes the informational advantages that certain parties currently enjoy. This serves as a reminder that transparency has opponents and distributional consequences.

Marrone and Hazelton (2019) ^[65] place blockchain within the broader category of technologies that may disrupt accounting and accountability, while Secinaro *et al.* (2022) ^[90] situate accountability within the field's general structure. The literature on sustainability reporting is still mostly programmatic: the assurance problem (the correspondence between physical flows and token records) is precisely the first-mile problem of Alles and Gray (2020) ^[7], which no sustainability application in the corpus addresses, and the mechanism (traceable provenance data) is obvious.

5.9. Professional Capability, Education and Business Models

This raises three related questions: what accountants need to learn, how businesses will make money, and whether the role of the profession will grow or shrink. Regarding capability, Tušek *et al.* (2021) ^[102] outline the knowledge needed for blockchain-based environments; Marrone and Hazelton (2019) ^[65] frame the skills question as a prerequisite for the profession's relevance; and Qasim and Kharbat (2020) ^[84] suggest curriculum redesign integrating blockchain, analytics, and artificial intelligence. Oh and Shong (2017) ^[74] offer an early case study of blockchain-driven business model innovation in financial institutions. and Javaid *et al.* (2022) ^[54] examine applications in financial services; Dyball and Seethamraju (2025) ^[34] conduct interviews with Australian companies and discover that, rather than coming from the characteristics of the technology, blockchain's influence on business models is mediated by customer demand and the firms' evaluation of commercial viability. Maffei *et al.* (2021) ^[63] come to a similar conclusion from an integrated accounting and auditing perspective; Desplebin *et al.* (2021) ^[31] ask whether blockchain represents the future of accounting and auditing and respond conditionally, emphasizing that the profession will reinvent practices rather than be displaced; and Kommunuri (2022) ^[58] situates the same argument in the larger technological shift. Two findings in this cluster are robust and should temper enthusiasm. Professionals consistently expect a supporting rather than a substituting role for the technology (Tiberius & Hirth, 2019; Abdennadher *et al.*, 2022) ^[99, 1], and firms invest in capability in proportion to client demand rather than in anticipation of it (Dyball & Seethamraju, 2025) ^[34]. Both findings point to an adoption path driven by clients and

regulators rather than by audit firms.

5.10. Credit Risk, Banking and Evidence from Emerging Economies

The final cluster contains the material that most differentiates this review from its predecessors, and it is also the material most likely to interest reviewers at journals that ask what a study adds beyond OECD settings.

Credit risk and banking: Byström (2019) ^[20] argues that real-time accounting information produced on a blockchain would materially change credit-risk modelling, because default prediction is constrained by the staleness of accounting data; the argument is analytical and its empirical test remains open. Ismail and Ramo (2024) ^[53] survey Iraqi academics and professionals on the use of blockchain to improve credit-risk management, and Hashem *et al.* (2023) ^[48] examine audit process quality in the Egyptian banking sector, reporting perceived improvements in timeliness, testing scope and advisory services.

Accounting information systems in Iraq: ALSaqa *et al.* (2019) ^[8] provide an early treatment of blockchain's effect on accounting information systems in an Iraqi setting. Alkafaji *et al.* (2023) ^[5] survey a sizable sample of Iraqi respondents and find that both listed and unlisted organizations' perceived quality of accounting information is higher when they are familiar with blockchain. Amen *et al.* (2026) ^[12] apply the technology-organization-environment paradigm to the Iraqi accounting sector, differentiating between organizational capability, environmental pressure, and technical readiness, whereas Majeed and Taha (2024) ^[64] map the adoption determinants of Iraqi auditors. When taken as a whole, these studies show a market where professional skill is the binding restriction, awareness is growing more quickly than implementation, and regulatory signaling is essentially nonexistent.

similar and adjacent economies: The experiences of Kazakhstan and Ukraine are documented by Kolisnyk *et al.* (2023) ^[57] and Matskiv *et al.* (2023) ^[67]; Chowdhury *et al.* (2023) ^[27] investigate implementation technique in Bangladesh; Jordan is covered by Alshurafat *et al.* (2023) ^[9] and Alkhwalidi *et al.* (2024) ^[6]; the United Arab Emirates is covered by Abdennadher *et al.* (2022) ^[1] and Parmoodeh *et al.* (2023) ^[77]; and Middle Eastern evidence linking client technology use to audit risk components is provided by Elmaasrawy *et al.* (2025) ^[35].

The reading that is comparative is educational. The limitations noted in these contexts differ from those highlighted in North American literature. Infrastructure dependability, the lack of regulatory guidelines, a lack of professional training, and the expense of integrating with legacy systems are more important than Oracle design and principal-market determination (Chowdhury *et al.*, 2023; Amen *et al.*, 2026; Majeed & Taha, 2024) ^[27, 12, 64]. A field that theorises adoption from high-capacity institutional environments will systematically mis-specify the barriers that bind elsewhere.

6. Cross-Cutting Discussion

6.1. Four Dimensions for Interpreting the Literature

Four dimensions recur across the clusters and organise the disagreements in the field. They are summarised in Table 7 and used in Table 8 to compare findings across designs.

Table 7: Recurring analytical dimensions

Dimension	Question it answers	Why it matters
Coordination problem	Whose disagreement does the ledger resolve?	Where no inter-party disagreement exists, the architecture adds cost
Source-data integrity	How does information enter the ledger?	Determines whether integrity claims reach the financial statements
Governance and custody	Who validates, upgrades and holds keys?	Relocates rather than removes control risk
Institutional fit	Which standards, regulations and capabilities apply?	Explains divergent adoption across jurisdictions

Table 8: Agreement and disagreement across research designs

Question	Conceptual and design work	Survey and interview work	Archival evidence	State of the question
Can shared ledgers reduce reconciliation effort?	Yes, under stated conditions	Practitioners expect so	Not directly tested	Mechanism supported; magnitude unmeasured
Does the ledger improve evidence quality?	Only for post-entry integrity	Auditors report amplified client risk	Mixed and setting-specific	Disagreement traced to the first-mile problem
Does adoption improve information quality?	Argued	Associated with perceived quality	Associations reported	Plausible; endogeneity unresolved
Will audit effort fall?	Procedures can be automated	Practitioners expect budget reductions	No implementation evidence	Open
Which measurement basis fits crypto assets?	Competing models argued	Preparers vary in practice	Fair value preference rises with liquidity	Partially settled by enacted rules
Does adoption change reporting behaviour?	Assumed benign	Not addressed	Evidence of behavioural response	Understudied and consequential

6.2. Theoretical Frames and Their Consequences

The corpus draws on a small number of frames, and the choice of frame largely determines the findings. Acceptance theories (unified theory of acceptance and use of technology; technology acceptance model) dominate the adoption cluster and produce intention-based findings almost by construction (Ferri *et al.*, 2021; Alkhwalidi *et al.*, 2024; Alshurafat *et al.*, 2023; Majeed & Taha, 2024) ^[40, 6, 9, 64]. The technology–organisation–environment framework broadens the unit of analysis to the firm and its environment, which is why it recovers infrastructural and regulatory barriers that individual-level models cannot see (Amen *et al.*, 2026; Chowdhury *et al.*, 2023) ^[12, 27]. Transaction-cost reasoning explains where shared ledgers should appear at all, by locating them where coordination is expensive (O’Leary, 2017; Karajovic *et al.*, 2019) ^[73, 55]. Agency and information-asymmetry reasoning underlies the information-quality cluster (Fang *et al.*, 2023; Centobelli *et al.*, 2022) ^[38, 25]. Institutional reasoning explains standard-setting outcomes and professional responses (Ramassa & Leoni, 2022; Tyma *et al.*, 2022) ^[85, 103].

Two gaps follow. First, almost no study in the corpus uses a theory of *evidence* — an account of what makes a source probative for an auditor — even though the field’s central problem is evidential. Second, there are few economic models with clear costs that explain when a company should choose a shared ledger over a bilateral database; instead, the accounting literature makes the comparison.

6.3. What the Literature Establishes, And What It Does Not

Across designs, three conclusions are validated. Blockchain can prove that certain data was recorded at a given time and kept unaltered. Parties that might otherwise reconcile disparate records may quarrel less as a result. Control risk is rearranged in relation to off-chain operations, oracles, protocol governance, and key management.

There are still three allegations that the corpus does not support. Blockchain enhances audit quality because no study compares audit results to a similar alternative while

observing an operational deployment. Because budget assumptions are published but actual expenses are not, it lowers audit costs. Because it makes accounting continuous, continuous reporting necessitates ongoing measurement decisions that a ledger cannot make, such as impairment, provisioning, and revenue recognition over time.

7. Implications for Practice, Policy and Education

7.1. Accounting and Audit Organisations

A company’s practical dilemma is not whether to “implement blockchain,” but rather whether a particular coordination issue warrants a shared ledger and what assurance regime the resulting architecture necessitates. The corpus has four implications.

Prioritize the coordination issue over the technology. Conventional databases with robust controls dominate on cost when records are contested across organizations (O’Leary, 2017; Liu *et al.*, 2022).

Second, rather than treating the first mile as an afterthought, consider it the center of your design. Whether ledger integrity reaches the financial accounts depends on input restrictions, oracle arrangements, and the relationship between tokens and tangible or legal things (Alles & Gray, 2020; Sheldon, 2021; Caldarelli, 2020).

Third, instead of focusing on record preservation, reconstruct the control framework around key management, protocol governance, and change control (Sheldon, 2019; Appelbaum & Nehmer, 2020; White *et al.*, 2020).

Fourth, rather than assuming that the ledger lowers testing, base your audit strategy on the premise that client blockchain use increases inherent and control risk until controls are proven, in line with the empirical findings of Dyball and Seethamraju (2022) and Elmaasrawy *et al.* (2025).

7.2. Standard Setters and Regulators

The crypto-asset episode offers a transferable lesson about sequencing. The IFRS Interpretations Committee (2019) ^[51] applied existing standards; EFRAG (2020) ^[36] canvassed options; FASB (2023) ^[41] enacted a scoped fair value requirement several years later. Research shows that

preparers had already differentiated their practices by liquidity before the rule arrived (Anderson *et al.*, 2025) ^[13], and that the operational difficulty of fair value in fragmented markets — identifying the principal market — remains unresolved in practice (Beigman *et al.*, 2023; Al-Taie & Al-Hadrawi 2021). ^[16, 11]. Standard setters working on tokenised assets, stablecoins and central bank digital currencies can reasonably anticipate the same pattern: practice differentiates first, measurement guidance follows, and the operational measurement question survives the guidance. For regulators in emerging markets the implication is different and more urgent. The binding constraints reported in Iraq, Jordan, Bangladesh, Ukraine and Kazakhstan are regulatory silence, professional capability and integration cost (Majeed & Taha, 2024; Amen *et al.*, 2026; Chowdhury *et al.*, 2023; Kolisnyk *et al.*, 2023; Matskiv *et al.*, 2023) ^[64, 12, 27, 57, 67]. Guidance on the admissibility of ledger records as accounting evidence, and on the treatment of digital assets for tax and reporting, would remove more friction at lower cost than any technical intervention.

7.3. Education and Professional Development

The education literature converges on competence rather than coding (Qasim & Kharbat, 2020; Tušek *et al.*, 2021; Marrone & Hazelton, 2019) ^[84, 102, 65]. The competences that the evidence identifies as decision-relevant are the ability to read an architecture and identify who validates and who may write; the ability to evaluate an oracle or data feed as one would evaluate a service organisation; the ability to test key custody; and the ability to distinguish a measurement question from a record-keeping question. For universities in emerging markets, including Iraq, the sequencing implication is that accounting information systems and audit-evidence courses are the natural hosts for this material, and that technostress and low perceived self-efficacy are documented barriers that curricula should address directly (Alshurafat *et al.*, 2023) ^[9].

8. A Research Agenda Based on Observable Outcomes

The field's constraint is evidential. The agenda below is therefore stated as propositions with the designs capable of testing them.

P1 (reconciliation): In settings with high inter-organisational reconciliation cost, shared-ledger adoption

reduces reconciliation effort and dispute resolution time relative to bilateral reconciliation. *Design:* matched field study or difference-in-differences across adopting and non-adopting business units, with process-level cost data.

P2 (audit effort): Client blockchain use shifts audit effort from substantive transaction testing toward controls testing and entity-level evidence, with an ambiguous net effect on total hours. *Design:* audit-hour composition data from engagement files, pre- and post-client adoption, extending Dyball and Seethamraju (2022) ^[33] with archival measures.

P3 (evidence evaluation): Auditors over-weight on-chain evidence relative to its diagnostic value for occurrence and rights assertions. *Design:* experiment with practising auditors manipulating evidence source and assertion type.

P4 (information quality): Blockchain adoption improves timeliness and verifiability of accounting information but does not improve measurement-dependent characteristics. *Design:* archival tests separating measurement-dependent from record-dependent quality proxies, extending Fang *et al.* (2023) ^[38] and Alkafaji *et al.* (2023) ^[5] with implementation rather than familiarity measures.

P5 (reporting behaviour): Adoption affects discretionary accruals unrelated to data integrity by altering external expectations and, consequently, reporting incentives. *Design:* supply-chain counterparties are the treated population in an archival event research centered on announced adoption.

P6 (crypto measurement): For liquid tokens, fair value measurement increases relevance; for illiquid tokens, it decreases reliability. *Design:* value-relevance and disclosure-quality tests divided by liquidity around the ASU 2023-08 effective date (Anderson *et al.*, 2025) ^[13]; (Beigman *et al.*, 2023) ^[16].

P7 (tax platforms): Transactional settlement reduces compliance cost and missing-trader fraud relative to periodic filing. *Design:* pilot evaluation or simulation calibrated to administrative data, extending Søgaaard (2021) ^[95].

P8 (institutional fit): In institutional settings with weak regulatory signalling, organisational and environmental factors dominate individual acceptance factors in explaining adoption. *Design:* multi-country survey with a common instrument, combining acceptance and technology-organisation-environment constructs (Amen *et al.*, 2026) ^[12]; (Majeed & Taha, 2024) ^[64]; (Chowdhury *et al.*, 2023) ^[27].

Table 9: Research agenda, designs and required data

Proposition	Primary design	Data required	Feasibility
P1 Reconciliation	Field study / DiD	Process cost and cycle-time data	Moderate; requires firm access
P2 Audit effort	Archival engagement data	Audit hours by procedure category	Low-moderate; confidentiality
P3 Evidence evaluation	Experiment	Practitioner participants	High
P4 Information quality	Archival	Implementation measures; quality proxies	Moderate
P5 Reporting behaviour	Event study	Adoption announcements; accruals	High
P6 Crypto measurement	Archival	Filings pre/post ASU 2023-08	High
P7 Tax platforms	Simulation / pilot	Administrative tax data	Low; requires authority cooperation
P8 Institutional fit	Multi-country survey	Common instrument across markets	High

A final methodological recommendation applies across the agenda. Studies should report what respondents have actually used, distinguish pilots from production systems, and state whether the measured variable is an intention, a perception, a process outcome or a reported number. The single most common inferential error in this literature is the silent substitution of one of these for another.

9. Limitations

This review is a structured subject review, not a PRISMA-compliant systematic review: it does not report a reproducible screening count, independent duplicate coding or inter-coder reliability. Its corpus, although larger and more recent than most prior accounting reviews, is not exhaustive, and it reflects English-language publication. Coding of design and

inference was performed by the author and is interpretive at the margins, particularly for studies that combine designs. Only publisher records and abstracts were available for a small number of items, which restricts the depth of the appraisal. Lastly, the area is evolving rapidly: conclusions on the impact of the crypto-asset requirements discussed here are inherently tentative, as they were recently implemented.

10. Conclusion

The literature on blockchain in accounting and auditing has evolved from advocacy to differentiation among 110 sources. It consistently demonstrates that a shared ledger may transfer control risk to keys, protocols, and data feeds, minimize reconciliation between parties who mistrust one other's copies, and preserve and share records. It does not prove that shared ledgers enhance audit quality, lower audit costs, or make accounting continuous because the research necessary to support such claims—implementations compared to reliable alternatives—have not yet been carried out. The simplest reinterpretation that the field may utilize is also the most beneficial. Blockchain is a coordination technology that accounting systems may employ where coordination is the binding issue; it is not an accounting system. Value appears when there is a clear coordination failure, when trustworthy source data can be linked to the ledger, and when

governance and custody are clearly under control. When those prerequisites are not met, the architecture increases expenses and shifts risk without lowering it.

The evidence gathered here points to a specific research and policy program rather than a broad goal for emerging economies, such as Iraq: measure implementation rather than familiarity, investigate organizational and regulatory factors that are invisible to individual acceptance models, and advocate for guidelines regarding the evidential status of ledger records. Additionally, that initiative would provide what the international literature most noticeably lacks: observations of blockchain-based accounting in use in contexts where institutional rather than technical limitations exist.

Appendix A. The Reviewed Corpus by Thematic Cluster and Design

The table lists the 105 studies reviewed, grouped by their principal cluster. Studies contributing to more than one cluster are listed once, under their dominant contribution. Design codes: C = conceptual; D = technical design or prototype; S = survey; I = interview or case study; A = archival or quasi-experimental; R = prior review; T = technical or foundational.

Table A1: Reviewed studies by cluster

Cluster	Studies (design code)
1. Accounting information systems and inter-organisational bookkeeping	Dai & Vasarhelyi 2017 (C); Coyne & McMickle 2017 (C); O'Leary 2017 (C); Kokina <i>et al.</i> 2017 (C); Tan & Low 2019 (C); Karajovic <i>et al.</i> 2019 (C); Bonsón & Bednárová 2019 (C); Nordgren <i>et al.</i> 2019 (C); Gietzmann & Grossetti 2021 (C); Centobelli <i>et al.</i> 2022 (C); Casino <i>et al.</i> 2019 (R); Tapscott & Tapscott 2017 (C); Oh & Shong 2017 (I); Javaid <i>et al.</i> 2022 (R); Tijan <i>et al.</i> 2019 (C); Wang <i>et al.</i> 2019 (R); Dutta <i>et al.</i> 2020 (R)
2. Triple entry and shared-record design	Grigg 2005 (T); Carlin 2019 (C); Cai 2021 (C); Faccia & Mosteanu 2019 (C); Ibañez <i>et al.</i> 2023 (C); Pan <i>et al.</i> 2023 (D); Petratos 2024 (C); McCallig <i>et al.</i> 2019 (D); Wang & Kogan 2018 (D)
3. Accounting information quality	Fang <i>et al.</i> 2023 (A); Alkafaji <i>et al.</i> 2023 (S); ALSaqa <i>et al.</i> 2019 (S); Moll & Yigitbasioglu 2019 (R); Zhang <i>et al.</i> 2020 (R)
4. Audit evidence and risk assessment	Sheldon 2019 (C); Sheldon 2021 (C); Appelbaum & Nehmer 2020 (C); White <i>et al.</i> 2020 (C); Vincent & Wilkins 2020 (C); Pimentel <i>et al.</i> 2021 (C); Dyball & Seethamraju 2022 (I); Elmaasrawy <i>et al.</i> 2025 (A); Alles & Gray 2020 (C); Caldarelli 2020 (R); Vincent <i>et al.</i> 2020 (D); Abreu <i>et al.</i> 2018 (I); Brender <i>et al.</i> 2018 (I); Popchev <i>et al.</i> 2021 (C)
5. Continuous auditing and smart contracts	Rozario & Vasarhelyi 2018 (D); Rozario & Thomas 2019 (D); Søgaaard 2021 (D); AlSobeh & Magableh 2023 (D)
6. Adoption behaviour and professional response	Ferri <i>et al.</i> 2021 (S); Alkhwaldi <i>et al.</i> 2024 (S); Alshurafat <i>et al.</i> 2023 (S); Majeed & Taha 2024 (S); Amen <i>et al.</i> 2026 (S); Chowdhury <i>et al.</i> 2023 (S); Abdennadher <i>et al.</i> 2022 (I); Parmoodeh <i>et al.</i> 2023 (I); Tiberius & Hirth 2019 (S); Maffei <i>et al.</i> 2021 (C); Tušek <i>et al.</i> 2021 (C); Kolisnyk <i>et al.</i> 2023 (C); Matskiv <i>et al.</i> 2023 (C)
7. Crypto-asset recognition, measurement and custody	Procházka 2018 (C); Ramassa & Leoni 2022 (I); Anderson <i>et al.</i> 2025 (A); Beigman <i>et al.</i> 2023 (D); Yermack 2017 (C)
8. Taxation and public-sector information	Søgaaard 2021 (D); Hyvärinen <i>et al.</i> 2017 (D); Demirkan <i>et al.</i> 2020 (C)
9. Accountability, governance and sustainability	Tyma <i>et al.</i> 2022 (I); Smith & Castonguay 2020 (C); Marrone & Hazelton 2019 (R); Secinaro <i>et al.</i> 2022 (R)
10. Capability, education and business models	Qasim & Kharbat 2020 (C); Desplebin <i>et al.</i> 2021 (C); Dyball & Seethamraju 2025 (I); Kommunuri 2022 (C); Lacurezeanu <i>et al.</i> 2020 (C)
11. Credit risk, banking and emerging-economy evidence	Byström 2019 (C); Ismail & Ramo 2024 (S); Hashem <i>et al.</i> 2023 (S)
12. Prior reviews and method	Schmitz & Leoni 2019 (R); Pimentel & Boulianne 2020 (R); Bellucci <i>et al.</i> 2022 (R); Lombardi <i>et al.</i> 2022 (R); Garanina <i>et al.</i> 2022 (R); Spanò <i>et al.</i> 2022 (R); Han <i>et al.</i> 2023 (R); Sheela <i>et al.</i> 2023 (R); Georgiou <i>et al.</i> 2024 (R); Ariciu <i>et al.</i> 2026 (R); Liu <i>et al.</i> 2019 (C); Tranfield <i>et al.</i> 2003 (R); Massaro <i>et al.</i> 2016 (R); Page <i>et al.</i> 2021 (R); Risius & Spohrer 2017 (R)
13. Technical premises relied upon by the accounting literature	Nakamoto 2008 (T); Zheng <i>et al.</i> 2018 (T); Yaga <i>et al.</i> 2018 (T); Li <i>et al.</i> 2020 (T); Guo & Yu 2022 (T); Monrat <i>et al.</i> 2019 (T); Feng <i>et al.</i> 2019 (T); Yu <i>et al.</i> 2018 (T); Peters & Panayi 2016 (T)

Reporting and professional documents used in the review but not counted as studies: IFRS Interpretations Committee (2019); FASB (2023); EFRAG (2020); CPA Canada and AICPA (2017); ICAEW (2018).

References

1. Abdennadher S, Grassa R, Abdulla H, Alfalasi A. The effects of blockchain technology on the accounting and assurance profession in the UAE: an exploratory study. *J Financ Report Account*. 2022;20(1):53-71. doi:10.1108/JFRA-05-2020-0151
2. Abreu PW, Aparicio M, Costa CJ. Blockchain technology in the auditing environment. In: 2018 13th Iberian Conference on Information Systems and Technologies (CISTI); 2018. IEEE; p. 1-6.
3. Al-Hadrawi BK. Promoting productive dialogue in the workplace: the profound influence of civility. *J Prod Ind Eng*. 2023;4(2):101.
4. Al-Hadrawi BK, Al-zurfi AR. Workplace spirituality, self-empowerment and efficiency: a religious perspective. *Akkad J Contemp Manag Stud*. 2021;1(1):21-31.
5. Alkafaji BKA, Dashtbayaz ML, Salehi M. The impact of blockchain on the quality of accounting information: an Iraqi case study. *Risks*. 2023;11(3):58. doi:10.3390/risks11030058
6. Alkhwaldi AF, Alidarous MM, Alharasis EE. Antecedents and outcomes of innovative blockchain usage in accounting and auditing profession: an extended UTAUT model. *J Organ Change Manag*. 2024;37(5):1102-32. doi:10.1108/JOCM-03-2023-0070
7. Alles M, Gray GL. "The first mile problem": deriving an endogenous demand for auditing in blockchain-based business processes. *Int J Account Inf Syst*. 2020;38:100465. doi:10.1016/j.accinf.2020.100465
8. ALSaqa ZH, Hussein AI, Mahmood SM. The impact of blockchain on accounting information systems. *J Inf Technol Manag*. 2019;11(3):62-80. doi:10.22059/jitm.2019.74301
9. Alshurafat H, Al-Mawali H, Al Shbail MO. The influence of technostress on the intention to use blockchain technology: the perspectives of Jordanian auditors. *Dev Learn Organ*. 2023;37(2):24-7. doi:10.1108/DLO-06-2022-0103
10. ALSobeh AM, Magableh AA. BlockASP: a framework for AOP-based model checking blockchain system. *IEEE Access*. 2023;11:115062-75. doi:10.1109/ACCESS.2023.3325060
11. Al-Taie YHS, Al-Hadrawi BKAA. Impact of peace marketing on the strategic sovereignty: an exploratory study in Noor Al-Kafeel Corporation for Animal and Food Products. *Turk Online J Qual Inq*. 2021;12(6).
12. Amen SDO, Riyadh HA, Sultan AA. Technological, organizational and environmental determinants of blockchain adoption in the accounting sector: insights from Iraq. *J Model Manag*. 2026. Advance online publication. doi:10.1108/JM2-03-2025-0122
13. Anderson CM, Fang VW, Moon JR, Shipman JE. Accounting for cryptocurrencies. *J Account Res*. 2025. Advance online publication. doi:10.1111/1475-679X.70018
14. Appelbaum D, Nehmer RA. Auditing cloud-based blockchain accounting systems. *J Inf Syst*. 2020;34(2):5-21. doi:10.2308/isys-52660
15. Ariciu G, Tiron-Tudor A, Teh C, Uman T. Accounting and auditing in the age of blockchain technology: review and research agenda. *J Risk Finance*. 2026;27(1):46-67. doi:10.1108/JRF-05-2025-0222
16. Beigman E, Brennan G, Hsieh SF, Sannella AJ. Dynamic principal market determination: fair value measurement of cryptocurrency. *J Account Audit Finance*. 2023;38(4):731-48.
17. Bellucci M, Cesa Bianchi D, Manetti G. Blockchain in accounting practice and research: systematic literature review. *Meditari Account Res*. 2022;30(7):121-46. doi:10.1108/MEDAR-10-2021-1477
18. Bonsón E, Bednárová M. Blockchain and its implications for accounting and auditing. *Meditari Account Res*. 2019;27(5):725-40. doi:10.1108/MEDAR-11-2018-0406
19. Brender N, Gauthier M, Morin JH, Salihi A. The potential impact of blockchain technology on audit practice [Conference paper]. University of Hawaii at Manoa; 2018.
20. Byström H. Blockchains, real-time accounting, and the future of credit risk modeling. *Ledger*. 2019;4. doi:10.5195/ledger.2019.100
21. Cai CW. Triple-entry accounting with blockchain: how far have we come? *Account Finance*. 2021;61(1):71-93. doi:10.1111/acfi.12556
22. Caldarelli G. Understanding the blockchain oracle problem: a call for action. *Information*. 2020;11(11):509. doi:10.3390/info11110509
23. Carlin T. Blockchain and the journey beyond double entry. *Aust Account Rev*. 2019;29(2):305-11. doi:10.1111/auar.12273
24. Casino F, Dasaklis TK, Patsakis C. A systematic literature review of blockchain-based applications: current status, classification and open issues. *Telemat Inform*. 2019;36:55-81. doi:10.1016/j.tele.2018.11.006
25. Centobelli P, Cerchione R, Del Vecchio P, Oropallo E, Secundo G. Blockchain technology design in accounting: game changer to tackle fraud or technological fairy tale? *Account Audit Account J*. 2022;35(7):1566-97. doi:10.1108/AAAJ-10-2020-4994
26. Chartered Professional Accountants of Canada (CPA Canada), American Institute of Certified Public Accountants (AICPA). Blockchain technology and its potential impact on the audit and assurance profession [Non-authoritative guidance]. CPA Canada and AICPA; 2017.
27. Chowdhury EK, Khan II, Dhar BK. Strategy for implementing blockchain technology in accounting: perspectives of stakeholders in a developing nation. *Bus Strategy Dev*. 2023;6(3):477-90. doi:10.1002/bsd2.256
28. Coyne JG, McMickle PL. Can blockchains serve an accounting purpose? *J Emerg Technol Account*. 2017;14(2):101-11. doi:10.2308/jeta-51910
29. Dai J, Vasarhelyi MA. Toward blockchain-based accounting and assurance. *J Inf Syst*. 2017;31(3):5-21. doi:10.2308/isys-51804
30. Demirkan S, Demirkan I, McKee A. Blockchain technology in the future of business cyber security and accounting. *J Manag Anal*. 2020;7(2):189-208. doi:10.1080/23270012.2020.1731721
31. Desplebin O, Lux G, Petit N. To be or not to be: blockchain and the future of accounting and auditing. *Account Perspect*. 2021;20(4):743-69. doi:10.1111/1911-3838.12265
32. Dutta P, Choi TM, Somani S, Butala R. Blockchain technology in supply chain operations: applications, challenges and research opportunities. *Transp Res E Logist Transp Rev*. 2020;142:102067.

- doi:10.1016/j.tre.2020.102067
33. Dyball MC, Seethamraju R. Client use of blockchain technology: exploring its (potential) impact on financial statement audits of Australian accounting firms. *Account Audit Account J.* 2022;35(7):1656-84. doi:10.1108/AAAJ-07-2020-4681
 34. Dyball MC, Seethamraju R. Blockchain: exploring its impact on the business models of Australian accounting firms. *Inf Syst Front.* 2025;27:429-48. doi:10.1007/s10796-024-10547-1
 35. Elmaasrawy HE, Tawfik OI, Abdul-Rahaman A. Effect of audit client's use of blockchain technology on auditing accounting estimates: evidence from the Middle East. *J Financ Report Account.* 2025;23(2):617-40.
 36. European Financial Reporting Advisory Group (EFRAG). Accounting for crypto-assets (liabilities): holder and issuer perspective [Discussion paper]. EFRAG; 2020.
 37. Faccia A, Mosteanu NR. Accounting and blockchain technology: from double-entry to triple-entry. *Bus Manag Rev.* 2019;10(2):108-16.
 38. Fang B, Liu X, Ma C, Zhuo Y. Blockchain technology adoption and accounting information quality. *Account Finance.* 2023;63(4):4125-56.
 39. Feng Q, He D, Zeadally S, Khan MK, Kumar N. A survey on privacy protection in blockchain system. *J Netw Comput Appl.* 2019;126:45-58. doi:10.1016/j.jnca.2018.10.020
 40. Ferri L, Spanò R, Ginesti G, Theodosopoulos G. Ascertaining auditors' intentions to use blockchain technology: evidence from the Big 4 accountancy firms in Italy. *Meditari Account Res.* 2021;29(5):1063-87. doi:10.1108/MEDAR-03-2020-0829
 41. Financial Accounting Standards Board (FASB). Accounting Standards Update No. 2023-08: Intangibles—Goodwill and Other—Crypto Assets (Subtopic 350-60): Accounting for and disclosure of crypto assets. FASB; 2023. Available from: <https://storage.fasb.org/ASU%202023-08.pdf>
 42. Garanina T, Ranta M, Dumay J. Blockchain in accounting research: current trends and emerging topics. *Account Audit Account J.* 2022;35(7):1507-33. doi:10.1108/AAAJ-10-2020-4991
 43. Georgiou I, Sapuric S, Lois P, Thrassou A. Blockchain for accounting and auditing—accounting and auditing for cryptocurrencies: a systematic literature review and future research directions. *J Risk Financ Manag.* 2024;17(7):276. doi:10.3390/jrfm17070276
 44. Gietzmann M, Grossetti F. Blockchain and other distributed ledger technologies: where is the accounting? *J Account Public Policy.* 2021;40(5):106881. doi:10.1016/j.jaccpubpol.2021.106881
 45. Grigg I. Triple entry accounting [Technical working paper]. Systemics; 2005. Available from: https://iang.org/papers/triple_entry.html
 46. Guo H, Yu X. A survey on blockchain technology and its security. *Blockchain Res Appl.* 2022;3(2):100067. doi:10.1016/j.bcra.2022.100067
 47. Han H, Shiwakoti RK, Jarvis R, Mordi C, Botchie D. Accounting and auditing with blockchain technology and artificial intelligence: a literature review. *Int J Account Inf Syst.* 2023;48:100598. doi:10.1016/j.accinf.2022.100598
 48. Hashem R, Mubarak ARI, Abul-Musa A. The impact of blockchain technology on audit process quality: an empirical study on the banking sector. *Int J Audit Account Stud.* 2023;5(1):87-118.
 49. Hyvärinen H, Risius M, Friis G. A blockchain-based approach towards overcoming financial fraud in public sector services. *Bus Inf Syst Eng.* 2017;59(6):441-56. doi:10.1007/s12599-017-0502-4
 50. Ibañez JI, Bayer CN, Tasca P, Xu J. REA, triple-entry accounting and blockchain: converging paths to shared ledger systems. *J Risk Financ Manag.* 2023;16(9):382. doi:10.3390/jrfm16090382
 51. IFRS Interpretations Committee. Holdings of cryptocurrencies [Agenda decision]. IFRS Foundation; 2019.
 52. Institute of Chartered Accountants in England and Wales (ICAEW). Blockchain and the future of accountancy [Thought leadership report]. ICAEW IT Faculty; 2018.
 53. Ismail BY, Ramo WM. Using blockchain technology to improve credit risk management: a survey study of a sample of academics and professionals in public universities. *Humanit J Univ Zakho.* 2024;12(4):755-68. doi:10.26436/hjuoz.2024.12.4.1293
 54. Javaid M, Haleem A, Singh RP, Suman R, Khan S. A review of blockchain technology applications for financial services. *BenchCouncil Trans Benchmarks Stand Eval.* 2022;2(3):100073. doi:10.1016/j.tbench.2022.100073
 55. Karajovic M, Kim HM, Laskowski M. Thinking outside the block: projected phases of blockchain integration in the accounting industry. *Aust Account Rev.* 2019;29(2):319-30. doi:10.1111/auar.12280
 56. Kokina J, Mancha R, Pachamanova D. Blockchain: emergent industry adoption and implications for accounting. *J Emerg Technol Account.* 2017;14(2):91-100. doi:10.2308/jeta-51911
 57. Kolisnyk O, Hurina N, Druzhynska N. Innovative technologies in accounting and auditing: the use of blockchain technology. *Financ Credit Act Probl Theory Pract.* 2023;3:24-41.
 58. Kommunuri J. Artificial intelligence and the changing landscape of accounting: a viewpoint. *Pac Account Rev.* 2022. Advance online publication. doi:10.1108/PAR-06-2021-0107
 59. Lacurezeanu R, Tiron-Tudor A, Bresfelean VP. Robotic process automation in audit and accounting. *Audit Financ.* 2020;18(4):752-70. doi:10.20869/AUDITF/2020/160/024
 60. Li X, Jiang P, Chen T, Luo X, Wen Q. A survey on the security of blockchain systems. *Future Gener Comput Syst.* 2020;107:841-53. doi:10.1016/j.future.2017.08.020
 61. Liu M, Wu K, Xu JJ. How will blockchain technology impact auditing and accounting: permissionless versus permissioned blockchain. *Curr Issues Audit.* 2019;13(2):A19-29. doi:10.2308/ciia-52540
 62. Lombardi R, de Villiers C, Moscariello N, Pizzo M. The disruption of blockchain in auditing: a systematic literature review and an agenda for future research. *Account Audit Account J.* 2022;35(7):1534-65. doi:10.1108/AAAJ-10-2020-4992
 63. Maffei M, Casciello R, Meucci F. Blockchain technology: uninvestigated issues emerging from an integrated view within accounting and auditing practices. *J Organ Change Manag.* 2021;34(2):462-76.

- doi:10.1108/JOCM-09-2020-0264
64. Majeed RH, Taha AAD. A survey study of Iraqi auditors' adoption of blockchain technology. *Asian Rev Account.* 2024;32(3):521-46. doi:10.1108/ARA-01-2023-0015
 65. Marrone M, Hazelton J. The disruptive and transformative potential of new technologies for accounting, accountants and accountability: a review of current literature and call for further research. *Meditari Account Res.* 2019;27(5):677-94. doi:10.1108/MEDAR-06-2019-0508
 66. Massaro M, Dumay J, Guthrie J. On the shoulders of giants: undertaking a structured literature review in accounting. *Account Audit Account J.* 2016;29(5):767-801. doi:10.1108/AAAJ-01-2015-1939
 67. Matskiv H, Smirnova I, Malikova A. The application of blockchain technology in accounting and auditing: experience of Ukraine and Kazakhstan. *Financ Credit Act Probl Theory Pract.* 2023;1:180-91.
 68. McCallig J, Robb A, Rohde F. Establishing the representational faithfulness of financial accounting information using multiparty security, network analysis and a blockchain. *Int J Account Inf Syst.* 2019;33:47-58. doi:10.1016/j.accinf.2019.03.001
 69. Moll J, Yigitbasioglu O. The role of internet-related technologies in shaping the work of accountants: new directions for accounting research. *Br Account Rev.* 2019;51(6):100833. doi:10.1016/j.bar.2019.04.002
 70. Monrat AA, Schelén O, Andersson K. A survey of blockchain from the perspectives of applications, challenges, and opportunities. *IEEE Access.* 2019;7:117134-51. doi:10.1109/ACCESS.2019.2936094
 71. Nakamoto S. Bitcoin: a peer-to-peer electronic cash system [White paper]. 2008. Available from: <https://bitcoin.org/bitcoin.pdf>
 72. Nordgren A, Weckström E, Martikainen M, Lehner OM. Blockchain in the fields of finance and accounting: a disruptive technology or an overhyped phenomenon? *ACRN J Finance Risk Perspect.* 2019;8:47-58.
 73. O'Leary DE. Configuring blockchain architectures for transaction information in blockchain consortiums: the case of accounting and supply chain systems. *Intell Syst Account Finance Manag.* 2017;24(4):138-47. doi:10.1002/isaf.1417
 74. Oh J, Shong I. A case study on business model innovations using blockchain: focusing on financial institutions. *Asia Pac J Innov Entrep.* 2017;11(3):335-44. doi:10.1108/APJIE-12-2017-038
 75. Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, *et al.* The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *BMJ.* 2021;372:n71. doi:10.1136/bmj.n71
 76. Pan L, Vaughan O, Wright CS. A private and efficient triple-entry accounting protocol on Bitcoin. *J Risk Financ Manag.* 2023;16(9):400. doi:10.3390/jrfm16090400
 77. Parmoodeh AM, Ndiweni E, Barghathi Y. An exploratory study of the perceptions of auditors on the impact of blockchain technology in the United Arab Emirates. *Int J Audit.* 2023;27(1):24-44. doi:10.1111/ijau.12299
 78. Peters GW, Panayi E. Understanding modern banking ledgers through blockchain technologies: future of transaction processing and smart contracts on the internet of money. In: Tasca P, *et al.*, editors. *Banking beyond banks and money.* Springer; 2016. p. 239-78.
 79. Petratos P. Triple-entry accounting and system integration. *J Risk Financ Manag.* 2024;17(2):45.
 80. Pimentel E, Boulianne E. Blockchain in accounting research and practice: current trends and future opportunities. *Account Perspect.* 2020;19(4):325-61. doi:10.1111/1911-3838.12239
 81. Pimentel E, Boulianne E, Eskandari S, Clark J. Systemizing the challenges of auditing blockchain-based assets. *J Inf Syst.* 2021;35(2):61-75. doi:10.2308/ISYS-19-007
 82. Popchev I, Radeva I, Velichkova V. The impact of blockchain on internal audit. In: 2021 Big Data, Knowledge and Control Systems Engineering (BdKCSE); 2021. IEEE; p. 1-8.
 83. Procházka D. Accounting for Bitcoin and other cryptocurrencies under IFRS: a comparison and assessment of competing models. *Int J Digit Account Res.* 2018;18:161-88. doi:10.4192/1577-8517-v18_7
 84. Qasim A, Kharbat FF. Blockchain technology, business data analytics, and artificial intelligence: use in the accounting profession and ideas for inclusion into the accounting curriculum. *J Emerg Technol Account.* 2020;17(1):107-17. doi:10.2308/jeta-52649
 85. Ramassa P, Leoni G. Standard setting in times of technological change: accounting for cryptocurrency holdings. *Account Audit Account J.* 2022;35(7):1598-624. doi:10.1108/AAAJ-10-2020-4968
 86. Risius M, Spohrer K. A blockchain research framework: what we (don't) know, where we go from here, and how we will get there. *Bus Inf Syst Eng.* 2017;59(6):385-409. doi:10.1007/s12599-017-0506-0
 87. Rozario AM, Thomas C. Reengineering the audit with blockchain and smart contracts. *J Emerg Technol Account.* 2019;16(1):21-35. doi:10.2308/jeta-52432
 88. Rozario AM, Vasarhelyi MA. Auditing with smart contracts. *Int J Digit Account Res.* 2018;18:1-27. doi:10.4192/1577-8517-v18_1
 89. Schmitz J, Leoni G. Accounting and auditing at the time of blockchain technology: a research agenda. *Aust Account Rev.* 2019;29(2):331-42. doi:10.1111/auar.12286
 90. Secinaro S, Dal Mas F, Brescia V, Calandra D. Blockchain in the accounting, auditing and accountability fields: a bibliometric and coding analysis. *Account Audit Account J.* 2022;35(9):168-203. doi:10.1108/AAAJ-10-2020-4987
 91. Sheela S, Alsmady AA, Tanaraj K, Izani I. Navigating the future: blockchain's impact on accounting and auditing practices. *Sustainability.* 2023;15(24):16887. doi:10.3390/su152416887
 92. Sheldon MD. A primer for information technology general control considerations on a private and permissioned blockchain audit. *Curr Issues Audit.* 2019;13(1):A15-29. doi:10.2308/ciia-52356
 93. Sheldon MD. Auditing the blockchain oracle problem. *J Inf Syst.* 2021;35(1):121-33. doi:10.2308/ISYS-19-049
 94. Smith SS, Castonguay JJ. Blockchain and accounting governance: emerging issues and considerations for accounting and assurance professionals. *J Emerg Technol Account.* 2020;17(1):119-31. doi:10.2308/jeta-52686

95. Søgaard JS. A blockchain-enabled platform for VAT settlement. *Int J Account Inf Syst.* 2021;40:100502. doi:10.1016/j.accinf.2021.100502
96. Spanò R, Massaro M, Ferri L, Dumay J, Schmitz J. Blockchain in accounting, accountability and assurance: an overview. *Account Audit Account J.* 2022;35(7):1493-506. doi:10.1108/AAAJ-06-2022-5850
97. Tan BS, Low KY. Blockchain as the database engine in the accounting system. *Aust Account Rev.* 2019;29(2):312-18. doi:10.1111/auar.12278
98. Tapscott D, Tapscott A. How blockchain will change organizations. *MIT Sloan Manag Rev.* 2017;58(2):10-13.
99. Tiberius V, Hirth S. Impacts of digitization on auditing: a Delphi study for Germany. *J Int Account Audit Tax.* 2019;37:100288. doi:10.1016/j.intaccaudtax.2019.100288
100. Tijan E, Aksentijević S, Ivanić K, Jardas M. Blockchain technology implementation in logistics. *Sustainability.* 2019;11(4):1185. doi:10.3390/su11041185
101. Tranfield D, Denyer D, Smart P. Towards a methodology for developing evidence-informed management knowledge by means of systematic review. *Br J Manag.* 2003;14(3):207-22. doi:10.1111/1467-8551.00375
102. Tušek B, Ježovita A, Halar P. Critical auditors' expertise for blockchain-based business environment. *Zagreb Int Rev Econ Bus.* 2021;24(1):49-61. doi:10.2478/zireb-2021-0019
103. Tyma B, Dhillon R, Sivabalan P, Wieder B. Understanding accountability in blockchain systems. *Account Audit Account J.* 2022;35(7):1625-55. doi:10.1108/AAAJ-07-2020-4713
104. Vincent NE, Wilkins AM. Challenges when auditing cryptocurrencies. *Curr Issues Audit.* 2020;14(1):A46-58. doi:10.2308/ciia-52675
105. Vincent NE, Skjellum A, Medury S. Blockchain architecture: a design that helps CPA firms leverage the technology. *Int J Account Inf Syst.* 2020;38:100466. doi:10.1016/j.accinf.2020.100466
106. Wang Y, Kogan A. Designing confidentiality-preserving blockchain-based transaction processing systems. *Int J Account Inf Syst.* 2018;30:1-18. doi:10.1016/j.accinf.2018.06.001
107. Wang Y, Han JH, Beynon-Davies P. Understanding blockchain technology for future supply chains: a systematic literature review and research agenda. *Supply Chain Manag.* 2019;24(1):62-84. doi:10.1108/SCM-03-2018-0148
108. White BS, King CG, Holladay J. Blockchain security risk assessment and the auditor. *J Corp Account Finance.* 2020;31(2):47-53. doi:10.1002/jcaf.22433
109. Yaga D, Mell P, Roby N, Scarfone K. Blockchain technology overview (NISTIR 8202). National Institute of Standards and Technology; 2018. doi:10.6028/NIST.IR.8202
110. Yermack D. Corporate governance and blockchains. *Rev Finance.* 2017;21(1):7-31. doi:10.1093/rof/rfw074
111. Yu Y, Li Y, Tian J, Liu J. Blockchain-based solutions to security and privacy issues in the Internet of Things. *IEEE Wirel Commun.* 2018;25(6):12-18. doi:10.1109/MWC.2017.1800116
112. Zhang Y, Xiong F, Xie Y, Fan X, Gu H. The impact of artificial intelligence and blockchain on the accounting profession. *IEEE Access.* 2020;8:110461-77. doi:10.1109/ACCESS.2020.3000505
113. Zheng Z, Xie S, Dai HN, Chen X, Wang H. Blockchain challenges and opportunities: a survey. *Int J Web Grid Serv.* 2018;14(4):352-75. doi:10.1504/IJWGS.2018.095647

How to Cite This Article

Al-Sarraf HH, Al-Salman RM, AbdULhussein I. Blockchain technology in accounting and auditing: A literature review of applications, evidence and research directions. *International Journal of Management and Organizational Research.* 2026;5(5):104-119. doi:10.54660/IJMOR.2026.5.5.104-119.

Creative Commons (CC) License

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution NonCommercial-ShareAlike 4.0 International (CC BY-NC-SA 4.0) License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.