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Mapping Blockchain Adoption in Accounting and Auditing Professions: a Review and Research Agenda

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Abstract

This study maps research on blockchain adoption in accounting and auditing to identify influential applications, emerging themes and gaps in evidence on professional practice. A bibliometric analysis of 231 journal articles and reviews from Web of Science and Scopus for the 2015-2024 study window combined VOSviewer keyword co-occurrence and publication-year mapping with citation analysis and a review of representative studies. The analysis identified six themes spanning professional adoption and education, governance and assurance, accounting systems and financial reporting, audit evidence and triple-entry accounting, supply chains and trust, and digital transformation. Shared transaction records, smart contracts and continuous assurance were prominent in the literature, while digital accounting and user acceptance emerged as relatively recent topics. Evidence on sustained use, audit quality and implementation costs remains limited. The study proposes longitudinal comparisons that track how source-data validation, access rights and responsibility for resolving exceptions shape outcomes for adopting organisations and their trading partners.

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1. Introduction

Accounting and auditing depend on transaction records that professionals can reconcile, trace to their source and substantiate. Blockchain changes how organisations can maintain these records by allowing participants to validate and share entries under agreed rules. In accounting, shared records can support reconciliation between counterparties, and smart contracts can automate defined steps such as matching invoices to purchase orders. In auditing, time-stamped transaction histories can support timely monitoring and testing. Dai and Vasarhelyi (2017) describe how shared validation could connect accounting records with frequent assurance. These applications bring the design of accounting information systems into closer contact with decisions about how auditors obtain and evaluate evidence.

The value of a shared ledger depends on the reliability of the data entered and the controls governing its use. As Coyne and McMickle (2017) explain, agreement on a recorded transaction leaves auditors with the task of verifying whether the underlying economic event occurred as described. Organisations must establish who can submit and verify transactions, access confidential records and correct errors. For accountants and auditors, implementation involves changes in responsibilities and skills as well as system design. Akter et al. (2024) identify limited knowledge of accounting applications, integration difficulties and expected costs as barriers to adoption.

Prior reviews have examined blockchain applications in auditing Lombardi et al. (2022) and mapped the development of blockchain accounting research (Liu et al., 2024). Questions remain about how research on technology acceptance and organisational readiness connects with work on reporting, internal control and assurance. Studies examine adoption at different stages. Surveys of professionals describe intentions, prototypes test the feasibility of processes, and studies of operational deployments examine changes in practice. Understanding how these strands relate can clarify where claims of improved accounting or auditing have empirical support and where they still need testing.

This study maps research on blockchain adoption in the accounting and auditing professions using 231 publications from Web of Science and Scopus for the 2015-2024 study window. It uses VOSviewer van Eck and Waltman (2010) to identify keyword co-occurrence clusters and compare the relative recency of topics through average publication years. Citation counts and a reading of representative studies help interpret the scholarly influence of practices and the evidence for their professional effects. The study addresses five research questions.

RQ1: What are the key topics and trends in blockchain adoption in accounting and auditing?

RQ2: How have studies examined blockchain adoption's role in improving accounting and auditing practices?

RQ3: Which blockchain adoption practices are most influential in the literature, based on citations and thematic linkages?

RQ4: Which areas of blockchain adoption in accounting and auditing remain underexplored?

RQ5: What directions should future research on blockchain adoption in accounting and auditing pursue?

Section 2 reviews the literature, and Section 3 describes the methodology. Section 4 presents and discusses the findings, identifies gaps and sets out directions for future research. Section 5 concludes with the study's theoretical and practical implications and limitations.

2. Literature Review

Blockchain adoption in accounting and auditing involves changes to how organisations record transactions, establish their provenance and distribute responsibility for validating evidence. A shared ledger may provide several parties with a common record of an agreed event. The resulting accounting and assurance benefits depend on the source of the data, the rules governing participation and the ability of professionals to investigate exceptions. The literature examines these conditions through adoption models, accounting system designs, studies of professional judgement and research on organisational implementation (Akter et al., 2024; Han et al., 2023; Schmitz & Leoni, 2019).

2.1 Blockchain and the changing architecture of accounting

Blockchain is a form of distributed ledger technology in which participants maintain a common record under agreed validation rules. Cryptographic links make alterations to prior entries detectable, and consensus mechanisms determine which transactions the network accepts. Early accounting scholarship examined how these features might support timely reporting and assurance across organisational boundaries. Dai and Vasarhelyi (2017) proposed an ecosystem in which validated transactions could feed accounting records and support more frequent assurance. Tan and Low (2019) located the principal change in the database layer of the accounting information system. In their account, digitised validation changes the preparation of records while accountants continue to exercise responsibility for accounting policy and financial reporting.

The architecture also determines whose version of an event enters the record. Coyne and McMickle (2017) emphasise that economic events such as deliveries or service performance originate outside the ledger. Participants may agree on the data submitted even when the underlying event has been inaccurately described. A second consideration is the distribution of authority among network

members. Liu et al. (2019) show how permissioned and permissionless designs differ in access and participation, with consequences for auditability. An accounting application therefore needs a way to establish the authority of data providers, verify off-chain events and correct errors transparently. Ledger architecture matters because it changes the controls through which the accounting record acquires evidential value.

2.2 Adoption intentions and organisational readiness

Individual-level research commonly uses the Technology Acceptance Model or the Unified Theory of Acceptance and Use of Technology (UTAUT) to explain professionals' intentions. In Italian Big Four firms, Ferri et al. (2021) identify performance expectancy and social influence as principal predictors, with effort expectancy also contributing. Abu Afifa et al. (2023) associate trust with intention and expectancy beliefs among 317 Vietnamese accountants. In Jordan, Alkhwaldi et al. (2024) find that performance expectancy and social influence predict intention among accounting and auditing professionals, alongside perceived blockchain transparency and efficiency. Effort expectancy is insignificant in their model. These differences suggest that the salience of ease of use depends on the tasks, users and organisational arrangements under study.

Readiness also depends on conditions beyond the individual. Among 369 Indian accountants, Jena (2024) reports significant roles for facilitating conditions, performance expectancy and initial trust, alongside a moderating role for the perceived regulatory framework. Majeed and Taha (2024) highlight auditor skills and social influence in Iraqi government banks. Using the technology-organisation-environment framework, Akter et al. (2024) identify limited knowledge of accounting applications, difficulties integrating existing systems and expected costs in interviews with 19 experts and accountants. The two levels of analysis address different decisions. Individuals can judge a system useful before their organisation secures compatible infrastructure, funding or agreement with counterparties. Evidence on intention and reported use therefore provides a starting point for studying adoption, with implementation records needed to establish when the technology becomes part of routine practice.

2.3 Smart contracts, shared entries and reporting automation

Smart contracts can execute predefined rules when specified data or events are submitted. In accounting, proposed applications include matching invoices against approved transactions, posting journal entries and routing exceptions for review. Nofel et al. (2024) propose a system in which Internet of Things devices supply data, smart contracts generate entries and XBRL produces standardised financial reports. Their interviews with industry experts highlight technical feasibility alongside data

validation, integration and scalability challenges. Dashkevich et al. (2024) use design science to build and evaluate a prototype that connects business transactions to financial statement preparation. Such studies clarify the steps a working system must perform and the dependencies that operational testing would need to address. An automated posting rule can reproduce an incorrect treatment across the entire transaction population. Testing therefore needs to establish how the system handles missing data, disputed deliveries, changes in accounting rules and transactions that require judgement.

Triple-entry accounting extends shared verification to the relationship between transacting parties. In Cai (2021) three cases, selected entries could be supported by a common ledger record accessible to counterparties. This arrangement may reduce discrepancies over whether an event was recorded and which terms were accepted. Accounting recognition, measurement and classification can still differ across entities because each applies its own reporting policies and relevant standards. Kuruppu et al. (2022) illustrate a further consequence in an NGO case. Shared records could improve traceability for donors, while the allocation of visibility and control might reinforce donor priorities at the expense of beneficiaries. The value of a shared entry thus depends on how participants resolve discrepancies, agree on data access and recognise legitimate differences in reporting obligations.

2.4 Auditing, continuous assurance and professional judgement

A time-stamped record can give auditors earlier access to transaction histories and support the monitoring of defined controls. Elommal and Manita (2022) identify possible shifts from transaction testing towards control evaluation, broader transaction coverage and continuous audit procedures in interviews with 17 auditors. Wang and Kogan (2018) demonstrate the technical feasibility of real-time transaction processing and monitoring in a confidentiality-preserving prototype. The underlying mechanisms differ. Continuous monitoring can flag exceptions within a system, while audit assurance requires the auditor to determine what the alerts and other evidence imply for management assertions. The significance of expanded coverage therefore depends on the population captured and the quality of corroboration.

Evidence from audit practice points to new risks. Interviews with 28 blockchain stakeholders, including audit partners, led Dyball and Seethamraju (2021) to identify heightened perceptions of inherent and control risk for blockchain clients. Sargent (2022) explains why validation of on-chain transactions leaves questions about completeness and correspondence with real-world activity. Campbell et al. (2023) find indications of overreliance on blockchain-enabled evidence among surveyed accounting professionals. A ledger could therefore increase confidence in a record even when the originating data or controls warrant further investigation. Audit procedures must address the reliability of data interfaces, access privileges and the treatment of manual exceptions. These questions

place professional scepticism and the evaluation of evidence at the centre of blockchain-enabled assurance.

2.5 Governance, professional standards and confidentiality

Shared records distribute control across organisations whose incentives and obligations may differ. Governance arrangements determine who operates validating nodes, approves changes to the protocol and investigates errors. For permissioned networks, Sheldon (2019) identifies information technology general controls as an important part of evaluating blockchain within internal control over financial reporting. Smith and Castonguay (2020) link implementation to audit committee oversight and counterparty risk assessment. An auditable arrangement requires responsibilities for controls and corrective action to be identifiable, especially when the entity preparing the financial statements relies on infrastructure operated by other participants.

Professional guidance and data governance shape these arrangements. Gauthier and Brender (2021) report that interviewed auditors wanted more specific guidance both for auditing blockchain environments and for using blockchain as an audit tool. Jayasuriya and Sims (2023) identify unresolved questions surrounding the accounting treatment, taxation and assurance of crypto-assets. Those questions concern what an entity holds or reports, whereas adopting a ledger changes how transaction evidence is generated and accessed. Akanfe et al. (2024) identify tensions between durable distributed records and privacy requirements governing data control. For accounting and auditing research, this points to questions about which information is recorded, who may read it and how correction and retention responsibilities are allocated across participants. Vincent et al. (2020) propose an architecture through which auditors could access evidence while clients retain safeguards over confidential data. Its value as a design lies in showing how access could be structured. Implementation research would need to examine whether those permissions remain effective when network membership, service providers or audit responsibilities change.

2.6 Implementation economics, capabilities and observed outcomes

The investment case depends on whether a shared ledger reduces coordination costs that existing systems cannot resolve economically. Fuller and Markelevich (2020) question whether gains in data reliability and auditability justify the costs of scaling and protecting accounting data. Akter et al. (2024) identify integration with legacy systems and expected costs as practical barriers. These costs can persist after installation through parallel recordkeeping, systems maintenance and the training of staff who manage exceptions. Kroon et al. (2021) place technological competence alongside analytical and professional skills in their review of accountants' changing roles. A credible evaluation therefore

considers total implementation costs and the distribution of benefits among organisations, including smaller participants that may have limited influence over system design. Rijanto (2024) supply-chain finance cases identify potential assurance and accountability benefits alongside technology, education and integration costs. This combination raises a distributional question for the business case. Participants that bear the cost of generating and validating transaction data may receive a different share of the gains from faster settlement or cheaper verification.

Archival studies illustrate why outcomes should be tied to the particular implementation. Liao et al. (2025), using the staggered rollout of blockchain-based e-invoicing in China, report improved accrual quality and fewer error-related restatements after adoption. They find limited evidence that the rollout deterred deliberate manipulation. Autore et al. (2024) report that suppliers increased earnings management after customers adopted blockchain, with evidence consistent with lower monitoring of those suppliers. The first study examines reporting within adopting firms, while the second examines effects on trading partners. Evaluations should accordingly specify the process changed, the organisation whose outcomes are measured and the controls in place before adoption. Comparisons of reconciliation time, reporting errors, audit effort and total cost across comparable implementations could provide a more direct basis for judging return on investment.

2.7 Critical synthesis and rationale for bibliometric analysis

The literature links blockchain adoption to professional expectations, organisational readiness and the reliability of records used in accounting and assurance. Its evidence varies with the questions asked. Surveys identify factors associated with intentions and reported behaviour. Interviews and case studies show how governance and professional roles may change. Prototypes establish technical feasibility under specified conditions, and archival designs examine particular outcomes in operational settings. Findings about expected efficiency or design feasibility need to be interpreted in light of those evidential differences. Georgiou et al. (2024) call for more empirical work on education, independence, governance and standards. Research on sustained use, comparative implementation costs and the effects on different counterparties remains particularly important.

Prior reviews have mapped important parts of the field. Lombardi et al. (2022) distinguish research on business information systems, smart-contract applications and crypto-assets in auditing, while Liu et al. (2024) map the development of blockchain accounting using CiteSpace. Building on these contributions, the present study examines how adoption, accounting systems, auditing and governance are connected within a single screened corpus. Keyword co-occurrence and publication-year overlays trace the relationships and relative timing of themes. Source-specific citation counts indicate scholarly attention, and a reading of representative studies establishes what those contributions

can support about professional practice. The combined approach provides a basis for identifying influential topics and specifying where research designs or outcomes remain underdeveloped.

3. Research Methodology

This study uses bibliometric science mapping to examine research on blockchain adoption in accounting and auditing. Keyword co-occurrence analysis identifies the conceptual structure of the field, and a contextual reading of selected studies links the resulting themes to professional practices and research gaps (Donthu et al., 2021). Figure 1 documents record selection using a flow adapted from PRISMA 2020 (Page et al., 2021).

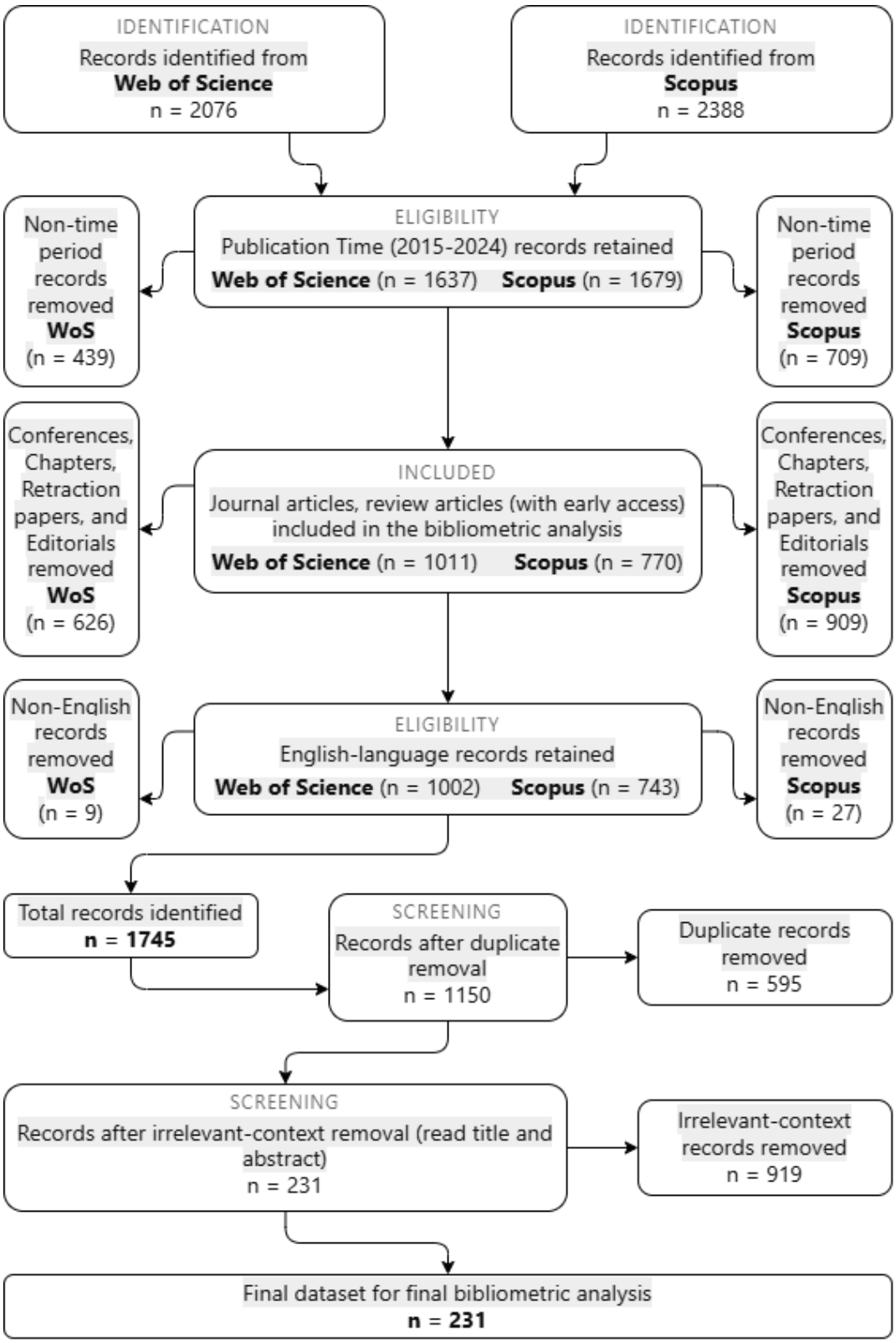
3.1 Data collection

Records were sourced from Web of Science (WoS) and Scopus in March 2025, with a nominal publication window of 2015-2024 and eligibility for early-access publications. The search focused on blockchain and distributed ledgers, technology adoption or implementation, and accounting and auditing applications.

The selection log reports 2,076 WoS and 2,388 Scopus records at identification. Date filtering retained 1,637 and 1,679 records, respectively. Document-type filtering retained 1,011 WoS and 770 Scopus journal articles and reviews, including early-access items. Applying the English-language criterion yielded 1,002 WoS and 743 Scopus records. Scopus BibTeX fields were aligned with the WoS structure before merging. Duplicate detection compared DOIs, titles, authors, years and journal names. WoS metadata were preferred where sources overlapped, with Scopus identifiers and counts retained separately when available. Removal of 595 duplicate records left 1,150 unique publications.

Title and abstract screening excluded 919 records without a substantive accounting or auditing application. Eligibility encompassed accounting information systems, financial and sustainability reporting, assurance, internal control and tax compliance. Technical uses of "audit" limited to software, networks or data integrity were excluded. The final corpus comprised 231 publications, including 211 articles and 20 reviews. Fourteen records with 2025-2026 issue years had documented online early-access dates in 2024. Their year was coded as 2024 for mapping, and original issue years were retained for publication trends and references. After screening, 122 publications were indexed in both databases, 46 in WoS alone and 63 in Scopus alone.

Figure 1. Identification, eligibility and screening of publications



Source: *Author's own work*

3.2 Bibliometric analysis method

The screened BibTeX records were converted to WoS tagged plain text for VOSviewer (van Eck & Waltman, 2010). Keywords were harmonised before import, for example by mapping “block chain” to “blockchain” and “DLT” to “distributed ledger technology”. Seven records with missing author keywords received terms derived from their titles and abstracts. The network pooled author and indexed keywords, counting each distinct term and each pair once per publication. Full counting and a minimum of five occurrences yielded 67 keywords and 971 links across six clusters. Total link strength is the sum of a keyword’s link weights. The overlay used average publication year (APY) to show the relative recency of keywords. Cluster APY was calculated as the unweighted mean of constituent keyword APYs. Table A1 reports the exported keyword statistics.

Cluster labels were assigned by interpreting prominent terms and their connections. Recorded citation counts were interpreted within their respective databases. Differences in database coverage and keyword indexing can affect the relative visibility of individual clusters. Terminological harmonisation can also reduce distinctions between variants. Co-occurrence and citation prominence indicate scholarly attention and thematic association.

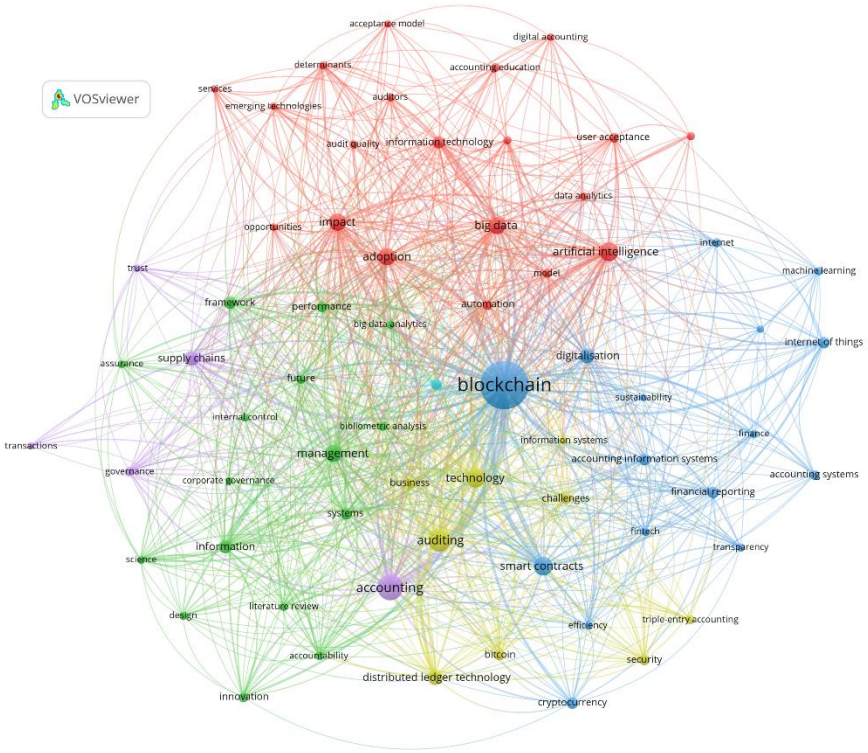
4. Findings and Discussion

The 231 publications, comprising 211 articles and 20 reviews, trace blockchain research from questions about ledger design and audit evidence to studies of professional adoption, financial reporting and interorganisational control. The VOSviewer exports contain 67 keywords, 971 links and six clusters. Blockchain is the central term, with 203 occurrences and a total link strength (TLS) of 711. Its strongest links are with accounting (54) and auditing (43), indicating that ledger research spans both professions. The thematic labels below interpret the composition of each cluster, while the studies illustrate the research designs and practical applications associated with those themes.

4.1 Conceptual structure of the field

Figure 2 identifies five multi-keyword clusters and a sixth containing one keyword. The clusters describe patterns of co-occurrence, and the accompanying studies provide substantive context for interpreting those patterns. Each cluster’s average publication year (APY) is the arithmetic mean of the keyword-level scores in the overlay export.

Figure 2. Keyword co-occurrence network for blockchain adoption in accounting and auditing



Source: *Author's elaboration using VOSviewer*

4.1.1 Professional adoption, analytics and education (red cluster)

The largest cluster contains 20 keywords (APY 2022.80). Artificial intelligence (33 occurrences) and big data (26) co-occur with adoption, user acceptance, audit quality and accounting education. These links situate blockchain within broader changes to professional work. Ferri et al. (2021) combined TAM3 and UTAUT in a survey of Italian Big Four staff and identified performance expectancy and social influence as leading predictors of intention to use blockchain. Among 317 Vietnamese accountants, Abu Afifa et al. (2023) found that trust contributed to adoption intention and that perceived accounting information quality strengthened performance expectancy. In Jordan, Alkhwaldi et al. (2024) linked reported use to knowledge acquisition and user satisfaction. Kaden et al. (2021) demonstrated the feasibility of teaching blockchain through coding exercises. Together, these studies identify factors that can support adoption, with engagement-level evidence still needed to establish effects on audit quality.

4.1.2 Governance, internal control and assurance (green cluster)

The green cluster comprises 16 terms (APY 2022.77), including management (26 occurrences), information (16), accountability, assurance and internal control. Its association with auditing is visible in the link between auditing and information (10). Smith and Castonguay (2020) explain why external auditors must assess blockchain implementation as a reporting risk and reconsider the extent of internal control testing. Brender et al. (2024) used design science to develop a prototype that applies a shared ledger to the three lines model, with implications for how management, risk functions and internal audit coordinate oversight. Bakarich et al. (2020) examined how verifiable records might support assurance of emissions and product provenance. Across these applications, the quality of assurance depends on who validates inputs, authorises changes and takes responsibility for exceptions.

4.1.3 Ledger-enabled accounting systems and financial reporting (blue cluster)

The blue cluster comprises 16 terms (APY 2022.39). Blockchain and smart contracts have a link strength of 29, while links with accounting information systems (11) and financial reporting (10) connect the technical architecture with accounting outputs. Tan and Low (2019) conceptualised blockchain as the database engine of an accounting information system that changes how transactions are validated. Nofel et al. (2024) proposed integrating sensor inputs, smart-contract journal entries and XBRL reporting, and interviewed 13 experts about feasibility and implementation barriers. Liao et al. (2025) used the staggered rollout of blockchain e-invoicing in China to examine realised outcomes. They found higher accrual quality and fewer error-related restatements following adoption. The evidence identifies invoice processing as a concrete use case and highlights the importance of validating data at entry.

4.1.4 Distributed ledgers, audit evidence and triple-entry accounting (yellow cluster)

The yellow cluster comprises nine terms (APY 2022.42), led by auditing (44 occurrences, TLS 243). Distributed ledger technology, security and triple-entry accounting connect audit practice to ledger design. Dai and Vasarhelyi (2017) outlined a real-time accounting and assurance ecosystem. Liu et al. (2019) compared permissioned and permissionless architectures and explained their implications for auditors. Cai (2021) used three cases to examine how a shared ledger entry could help counterparties reconcile records and improve transparency. Coyne and McMickle (2017) identified a boundary of ledger-based verification. A record of an economic event can be preserved on a blockchain, while the underlying event requires independent corroboration. This distinction informs how auditors evaluate transaction completeness, off-chain evidence and access rights under different governance arrangements.

4.1.5 Accounting, supply chains and interorganisational trust (purple cluster)

The purple cluster comprises five terms (APY 2022.13). Accounting (59 occurrences, TLS 258) connects with supply chains (19 occurrences, link strength 6), governance, transactions and trust. Natanelov et al. (2022) used process mapping and the resources-events-agents accounting model to identify how smart contracts might coordinate supply-chain finance. Kuruppu et al. (2022) drew on an NGO case study to examine how shared records could strengthen reporting to donors while potentially entrenching donors' influence over accountability. Autore et al. (2024) found that suppliers increased earnings management after customers adopted blockchain, with evidence consistent with reduced monitoring. These studies suggest that traceability can alter who controls information and who scrutinises it, with consequences for reporting across organisational boundaries.

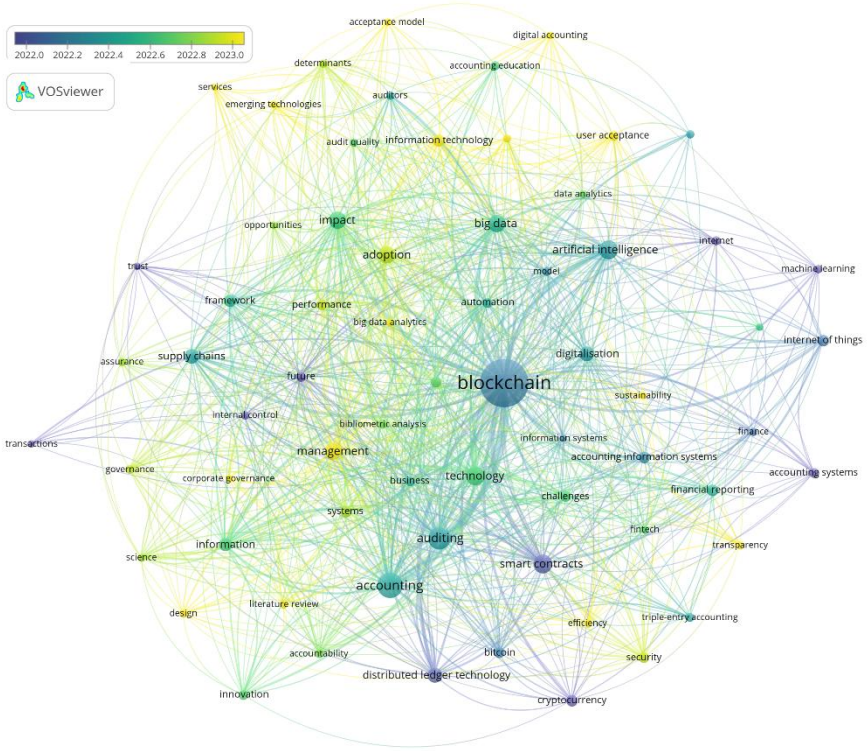
4.1.6 Digital transformation across professional settings (cyan cluster)

Digital transformation is the sole cyan keyword (10 occurrences, TLS 57, APY 2022.70). Its strongest links are with blockchain (9), adoption (5) and accounting (4), placing it across the technological and professional themes. Otia and Bracci (2022) used interviews and documents to show that many supreme audit institutions equated digital transformation with technology adoption or process automation and lacked the resources or strategy for wider change. In Jordanian banks, Al-Okaily et al. (2024) associated digital accounting and FinTech adoption with business performance. These studies contextualise the organisational changes surrounding blockchain adoption and suggest that implementation assessments should consider workforce capability, governance and how existing workflows are redesigned.

4.2 Emerging themes and evidence of influence

Using original publication years, output rose from four publications in 2017 to 46 in 2022 and 57 in 2024, the largest annual total in this corpus. The overlay (Figure 3) places digital accounting (APY 2023.60), sustainability (2023.40) and user acceptance (2023.22) later than smart contracts (2022.03) and distributed ledger technology (2022.05). The largest sum of cross-cluster link weights is between the red and blue clusters (311), reflecting connections between technology acceptance and accounting systems. The blue and yellow clusters also have strong ties (241), linking ledger implementation with auditing.

Figure 3. Overlay of keyword co-occurrence by average publication year



Source: *Author's elaboration using VOSviewer*

For RQ2, the literature examines improvement through acceptance surveys, conceptual frameworks, interviews and case studies, prototype testing and archival comparisons. Survey models identify conditions associated with uptake. Prototypes test whether a ledger can support workflows under specified conditions. Archival studies examine reporting outcomes after implementation. The e-invoicing and supply-chain studies illustrate why researchers should measure which transactions are covered, who performs verification and how existing monitoring changes before attributing improvements to blockchain adoption.

For RQ3, the strongest convergence of citations and keyword links concerns shared transaction records, smart-contract processing and continuous assurance. In the Web of Science counts recorded in the corpus, Dai and Vasarhelyi (2017) received 461 citations, Han et al. (2023) 246, and Kokina et al. (2017) 190. These conceptual and review contributions helped shape the research agenda. Wang and Kogan (2018), a Scopus-only record with 228 Scopus citations, evaluated a confidentiality-preserving prototype for real-time accounting and monitoring. Citations indicate scholarly influence, while prototypes and field studies offer different forms of evidence about practical outcomes. The e-invoicing rollout measures reporting outcomes within adopting firms, while the customer-adoption

study examines effects on suppliers. Distinguishing the unit of adoption from the unit of measurement is important when evaluating reporting quality across a supply chain (Autore et al., 2024; Liao et al., 2025).

4.3 Research gaps and future research directions

Table 1 addresses RQ4 and RQ5 by translating gaps across the six clusters into research questions. A priority is to follow adoption from initial acceptance to sustained use and compare objectively measured outcomes such as reconciliation time, restatements, the quality of audit evidence and the resolution of exceptions. Studies should distinguish a ledger's contribution from simultaneous changes in analytics, workflow design or staff training. Longitudinal field studies, matched comparisons and phased rollouts can help identify which governance and implementation conditions account for differences in outcomes. The range of settings also warrants greater attention to smaller firms, public audit institutions, and the reporting needs of stakeholders who lack control over a shared ledger.

Table 1. Research gaps and future research directions for blockchain adoption in accounting and auditing

Topic	Research gaps	Potential research questions
Professional adoption, analytics and education (red)	Survey evidence largely captures intentions or reported use. Evidence linking training and sustained use to audit quality is limited.	Which training and implementation supports sustain use in small and large firms? How does sustained use affect evidence quality, review time and exception resolution across multiple engagements?
Governance, internal control and assurance (green)	The allocation of responsibilities for data validation, access and exceptions remains insufficiently tested, particularly in sustainability assurance.	How should management, risk functions and auditors share responsibility for off-chain data and ledger changes? Which controls improve the reliability of emissions disclosures when source data come from suppliers?
Ledger-enabled accounting systems and financial reporting (blue)	Prototypes establish feasibility, while comparative evidence on integration, cost and reporting outcomes is concentrated in a few settings.	How do blockchain e-invoicing and conventional e-invoicing compare on reconciliation time and restatement rates? How do ERP and XBRL integration costs affect those results across firms with different legacy systems?

Distributed ledgers, audit evidence and triple-entry accounting (yellow)	Operational evidence on completeness, confidentiality and evidence sufficiency across ledger architectures remains limited.	When does a shared third entry improve counterparty reconciliation? How do permissioned and permissionless designs affect auditors' access to independently corroborated evidence when assets or events originate off-chain?
Accounting, supply chains and interorganisational trust (purple)	Research gives limited attention to shifts in monitoring, data ownership and reporting costs across counterparties.	How does customer adoption change supplier reporting and monitoring? Which governance rules protect the interests of smaller suppliers and beneficiaries when a dominant organisation controls participation?
Digital transformation across professional settings (cyan)	Longitudinal evidence on organisational change is limited, especially in public audit institutions and resource-constrained firms.	How do staffing, procurement and existing systems affect implementation? Which performance changes persist after adoption, and which are associated with wider digital reforms in comparable organisations?

Source: *Author's own work*

5. Conclusions

The analysis of 231 publications identifies six thematic clusters in research on blockchain adoption in accounting and auditing. The strongest keyword links in the screened corpus connect blockchain with accounting and auditing, while the publication-year overlay places digital accounting and user acceptance among the relatively recent topics (RQ1). Scholars have investigated adoption through practitioner surveys and interviews, examined workflows through prototypes and case studies, and used archival comparisons to study reporting outcomes (RQ2). Citation prominence and thematic linkages point to shared transaction records, smart-contract processing and continuous assurance as influential areas of scholarship (RQ3) (Dai & Vasarhelyi, 2017; Han et al., 2023). Evidence remains limited on sustained use, audit quality and costs across different organisational settings (RQ4). Future research should compare implementations over time and assess how data validation, access and oversight shape outcomes for both adopters and counterparties (RQ5). This distinction matters because the effects observed within adopting firms can differ from those observed among their trading partners (Autore et al., 2024; Liao et al., 2025).

5.1 Theoretical implications

The synthesis advances three propositions for studying blockchain adoption in accounting and auditing. First, professional acceptance and organisational implementation are distinct stages.

Expectations of improved performance can explain willingness to adopt, while integration capability, resource commitments and counterparty participation condition sustained use (Akter et al., 2024; Ferri et al., 2021). Second, assurance depends on how evidence is produced. Ledger validation establishes agreement about recorded data, while auditors still need evidence of the occurrence and completeness of underlying events (Coyne & McMickle, 2017; Sargent, 2022). Third, shared visibility changes the distribution of control across organisations. Its effects on accountability depend on who defines validation rules, who can challenge entries and whose interests guide the design (Kuruppu et al., 2022). Taken together, these propositions explain why similar ledger designs may yield different accounting and auditing outcomes across settings with different responsibilities for data quality, professional judgement and oversight.

5.2 Practical implications

Accounting teams can start with a process that has measurable reconciliation or verification costs, such as intercompany transactions or invoice matching. Before expanding a pilot, they should define who validates source data, approves changes and resolves exceptions. Audit teams should establish how ledger entries will be corroborated and which access and interface controls require testing (Sheldon, 2019; Smith & Castonguay, 2020). Baseline measures of processing time, reporting errors and audit effort for each workflow can help organisations evaluate the benefits alongside integration, training and ongoing maintenance costs.

5.3 Limitations and future research

The analysis covers English-language journal publications indexed in Web of Science and Scopus, so relevant professional and regional evidence may be underrepresented. Keyword harmonisation can obscure distinctions among applications, and citation counts indicate scholarly attention. The overlay assigned 14 records with later issue years to their 2024 early-access year, which affects the relative timing of terms. Future research should combine longitudinal field studies with phased rollouts or matched comparisons to estimate changes in reporting timeliness, audit evidence quality and total costs. Comparative studies should include smaller firms and public audit institutions and examine how governance arrangements allocate benefits, verification costs and accountability across participants. Tracking whether changes persist after implementation would also help distinguish the contribution of the ledger from concurrent investments in analytics, staff training and workflow redesign.

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Conflict of Interest

The author declare that there is no conflict of interest regarding the publication of this manuscript.

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Data availability

The datasets analysed during the current study are available from the corresponding author on reasonable request.

Appendix

Table A1. VOSviewer keyword statistics by cluster

Keyword	Occurrences	Links	Total link strength	Average publication year
Cluster 1. Red — Professional adoption, analytics and education				
acceptance model	5	18	24	2023
accounting education	8	16	25	2022.62
adoption	27	51	167	2022.89
analytics	7	25	44	2023.14
artificial intelligence	33	53	181	2022.33
audit quality	6	14	19	2022.67
auditors	7	23	35	2022.43
automation	9	37	67	2022.44
big data	26	48	137	2022.5
data analytics	7	18	29	2022.71
determinants	7	26	46	2022.86
digital accounting	5	18	26	2023.6
emerging technologies	5	21	32	2023
impact	28	51	165	2022.61
information technology	14	38	82	2023.14
model	8	30	46	2022.25
opportunities	5	23	33	2022.8
services	5	19	26	2023.4
technology acceptance model	6	13	19	2022.33

user acceptance	9	26	50	2023.22
Cluster 2. Green — Governance, internal control and assurance				
accountability	8	29	56	2022.75
assurance	6	24	32	2022.83
bibliometric analysis	8	30	55	2022.75
big data analytics	6	23	35	2023.17
corporate governance	5	20	28	2023
design	6	22	32	2023.5
framework	14	34	72	2022.5
future	9	34	61	2021.44
information	16	39	108	2022.62
innovation	9	23	42	2022.67
internal control	6	14	22	2022
literature review	6	23	36	2023.5
management	26	52	164	2023.04
performance	10	32	56	2022.9
science	6	27	48	2022.83
systems	12	44	83	2022.83
Cluster 3. Blue — Ledger-enabled accounting systems and financial reporting				
accounting information systems	12	33	50	2022.25
accounting systems	9	16	24	2022
blockchain	203	66	711	2022.19
cryptocurrency	13	22	42	2021.85
digitalisation	20	32	79	2022.35
digitisation	5	12	15	2022.6
efficiency	6	23	39	2023.17
finance	7	21	30	2022.14
financial reporting	12	25	48	2022.5
fintech	6	26	39	2022.67
internet	8	19	33	2021.62
internet of things	13	22	52	2022.15
machine learning	6	14	26	2021.33
smart contracts	31	37	117	2022.03
sustainability	5	17	24	2023.4
transparency	6	20	30	2024
Cluster 4. Yellow — Distributed ledgers, audit evidence and triple-entry accounting				
auditing	44	59	243	2022.34
bitcoin	10	29	59	2022.2
business	9	35	61	2022.44
challenges	11	37	64	2022.64
distributed ledger technology	21	34	93	2022.05
information systems	5	21	26	2022.2
security	10	29	55	2022.9
technology	33	52	177	2022.64
triple-entry accounting	8	18	28	2022.38
Cluster 5. Purple — Accounting, supply chains and interorganisational trust				
accounting	59	56	258	2022.41
governance	8	29	55	2022.88
supply chains	19	40	101	2022.37
transactions	5	10	16	2021.8

trust	5	22	27	2021.2
Cluster 6. Cyan — Digital transformation across professional settings				
digital transformation	10	28	57	2022.7

Source: *VOSviewer map and network exports. Average publication year is based on the years coded for the overlay and is shown to two decimal places.*

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