Blockchain in Accounting: How It Redefines AIS?

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This report is submitted to the School of Business and Economics, United International University, as a partial requirement for the fulfillment of the Bachelor of Business Administration

Blockchain in Accounting: How it Redefines AIS?

Submitted to:

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Registration Trimester: Summer 2025

School of Business and Economics

United International **University**

Date of Submission:21/07/2026

Letter of Transmittal

Date:21/07/2026

To
Dr. Mohammad Tariq Hasan
Professor
School of Business and Economics
United International **University**

Subject: **Submission of Report on "Blockchain in accounting: How it redefines AIS?"**

Dear Sir,

With due respect, I am presenting my final report entitled "Blockchain in accounting**:** how it redefines AIS?" to you, as it is a partial requirement for achieving a Bachelor of Business Administration from United International University. This report reflects academic dedication and sincerity. It showcases and examines the dual nature of cryptocurrencies within the global financial systems, and it highlights both the risks and transformative opportunities. This report also explores the impact of cryptocurrencies on the investors, regulatory authorities, and institutional structures. Finally, this report analyzes in depth the role of good governance in addressing emerging challenges.

Your valuable guidance, constructive feedback, and constant encouragement inspired the completion of this report. I am deeply grateful and respectful to you. I sincerely express my hope that the report will meet your desired standards, expectations, and requirements and make a meaningful contribution to the digital finance sector. Thank you for your kind consideration.

Respectfully submitted,

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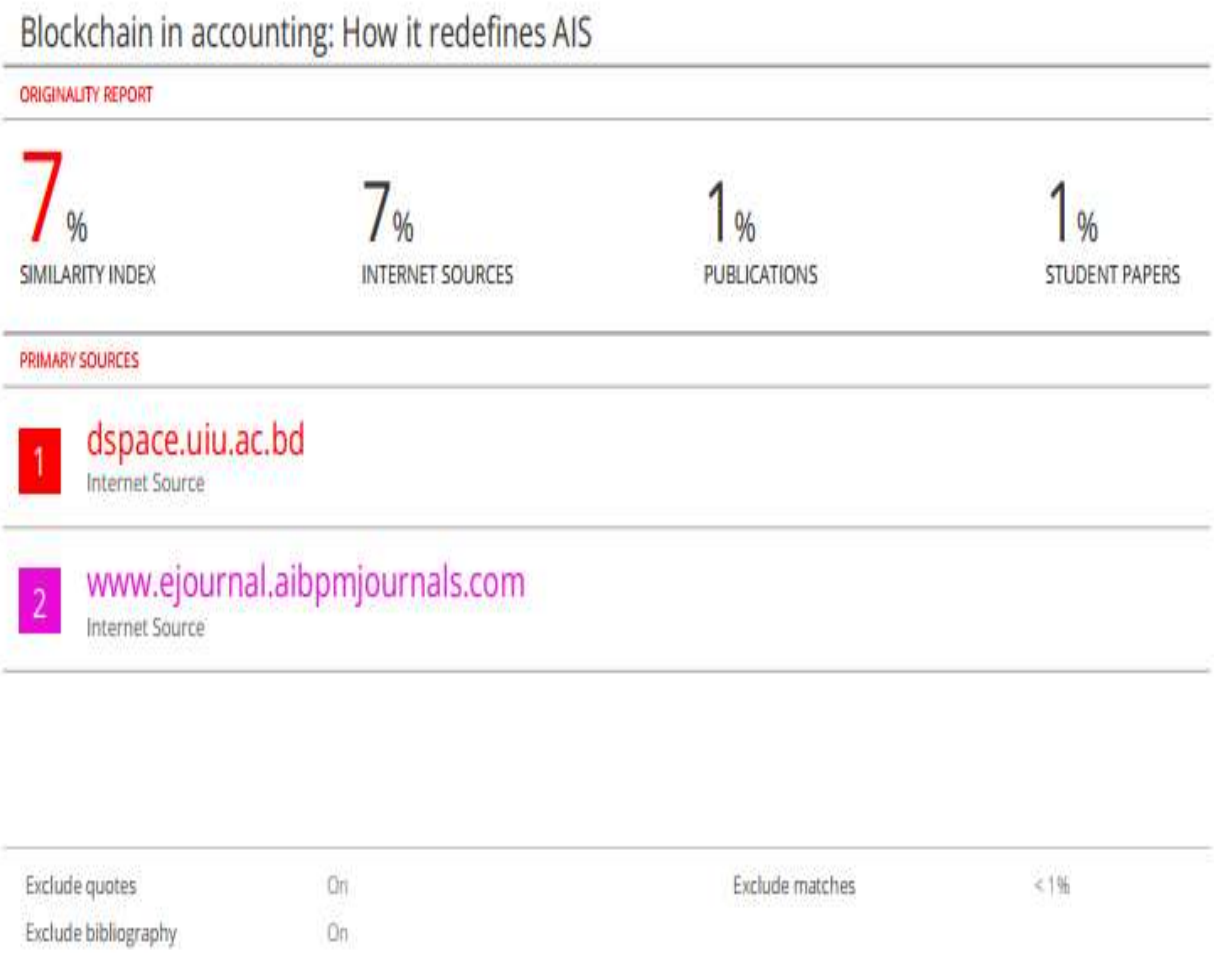

Blockchain in accounting: How it redefines AIS

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Declaration of the Student

I affirm that the report titled “Blockchain in accounting**:** how it redefines AIS?” submitted to the School of Business and Economics at United International University is completely a result of my consistent study and own efforts.

This report has not been submitted fully or partially for a degree, diploma, or certificate at any other institution or university. All sources and references that I have used in preparing this report have been duly identified and mentioned.

I confirm that the work presented here has been completed following the standards of academic honesty and originality of United International University.

Declared by:

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Acknowledgment

I began my report work by establishing my allegiance to my Creator. The last work has been accomplished by his grace.

I am very thankful to my research instructor and supervisor (Dr. Mohammad Tariq Hasan, Associate Professor-UIU SOBE). His direction and cooperation have played a special role in carrying out this research work. His discretion and constant observation added a new dimension to the field of this research.

I express my loyalty to my other teachers. Their cooperation has enriched my knowledge in various fields.

The inspiration of my family and friends gave me the drive to do this.

I am particularly grateful to all those researchers and institutions whose research papers were used in the report. The role of their research paper in strengthening the basis for my work was outstanding.

Abstract

The use of blockchain technology has become a game-changer in the accounting industry, posing a threat to the traditional centralized and periodically verified Accounting Information Systems (AIS). Developed around three key principles of decentralization, immutability and smart contracts, blockchain provides a shared, continuously verifiable alternative to traditional record keeping, with the potential to improve the transparency of financial data, real-time reporting, and to eliminate information asymmetry between financial data preparers and users. As a result, it opens up opportunities for continuous auditing, triple-entry accounting and improved financial reporting, but also brings with its complex challenges such as regulatory uncertainty, cost of implementation, technical limitations and scalability, and a lack of accounting professionals who are knowledgeable about blockchain. This research is based on two theoretical frameworks: Agency–Stakeholder Theory and the Technology Organization Environment (TOE) framework to explore the concept of AIS redefined by blockchain. This study employs a Systematic Literature Review (SLR) method and follows the PRISMA guidelines to investigate 20 peer-reviewed studies in the period 2018 to 2025 that focuses on how blockchain affects AIS architecture, the major applications of blockchain in accounting, the merits of blockchain in auditing and financial reporting, and the current challenges in blockchain adoption. Based on the findings, the redefinition of AIS by blockchain is definitely in a theoretical state, but has not yet been fully implemented in practice and is not evenly distributed among contexts. The study, with its policy recommendations for regulators and professional bodies aspiring to bridge the blockchain promise-realization gap, applies these findings to the unique situation of Bangladesh, where blockchain infrastructure is being actively promoted while cryptocurrency is still prohibited. The results are particularly relevant for accounting practice and regulation and for future research in developing economies where innovation and financial stability are important and competing issues.

Keywords: Blockchain Technology; Accounting Information Systems (AIS); Financial Reporting; Continuous Auditing; Triple-Entry Accounting; Systematic Literature Review (SLR); PRISMA

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List of Acronyms & Abbreviations

Acronym	Full form
AI	Artificial Intelligence
AIS	Accounting Information Systems
ERP	Enterprise Resource Planning
ESG	Environmental, Social, and Governance
IoT	Internet of Things
PRISMA	Preferred Reporting Items for Systematic Reviews and Meta-Analyses
SLR	Systematic Literature Review
TEA	Triple-Entry Accounting
TOE	Technology-Organization-Environment
XBRL	eXtensible Business Reporting Language

CHAPTER I: INTRODUCTION

1.1 Brief Review of Chapter

This chapter has provided the foundation for the rest of this study. It began by describing the transition of accounting from manual, paper-based to automated, always-on digital systems and why a transition of this magnitude has left the traditional AIS in a precarious position of complexity and weaknesses. The central issue that the chapter found is centralization; if it's in the hands of one authority, there's one point of failure, fraud and manipulation can be more easily introduced, and external parties don't know what they are looking at. The system is slower and more expensive, and easier to exploit, as auditors are forced to check paperwork after the fact. The chapter posed four guiding questions, such as: What exactly does blockchain change in AIS? Where is blockchain already being used? What does blockchain provide? What are some individual auditor and reporter concerns? What is still to be addressed? The subsequent goals further narrowed the focus, such as real-time and triple-entry accounting, how blockchain works with AI, IoT, and XBRL, and the reality of practical considerations regarding advantages and hurdles to adoption. Finally, the chapter explained why this is relevant, from a theoretical perspective from both agency–stakeholder and TOE perspectives, and from a practical perspective, for firms, auditors, regulators, and future researchers who seek to better understand the future of blockchain-based AIS. These sections picture the rest of the study as an attempt to investigate the extent to which that promise can be realized in the literature.

1.2 Background of the Study

Accounting systems changed from previous manual recording to automated, real-time digital AIS to meet demands for a new, rapidly changing world (Zaçe & Shuli, 2025). AIS created an interconnected network of hardware, software, people, transaction processes, reporting, and internal controls, and increasingly relies on cloud computing, AI, and analytics (Prasetianingrum & Sonjaya, 2024). Conventional AIS, grounded in double entry bookkeeping and centralized databases, struggles with fraud prevention,

information asymmetry, and trust between parties. Existing systems often require labor-focused audits and remain vulnerable to fraud, particularly due to reliance on central authorities (Dewayanto et al., 2025). The need for external auditors to verify centrally recorded transactions makes assurance expensive and time consuming, and delays between reporting and audit increase the risk of fraud and earnings manipulation (Dewayanto et al., 2025). Blockchain emerged with Bitcoin as a distributed, cryptographically secured ledger allowing peer-to-peer digital cash exchange without financial intermediaries (Dewayanto, 2026; Miraz, Jin, Hasan, Hossain, & Kazimul, 2024). It has evolved through successive "generations" from cryptocurrency (blockchain 1.0) to smart contracts and broader applications (2.0, 3.0). In accounting, blockchain is recognized as a new form of accounting database and platform for tamper-proof, traceable, and shareable information (Liu et al., 2024). Blockchain's decentralized, immutable characteristics directly address trust and fraud issues in current AIS by enabling shared, consensus-driven records and real-time auditable data (Nofel et al., 2024). In the context of Industry 4.0, AIs are becoming more efficient, automated, and digital, for instance, through the implementation of technologies like AI, big data, blockchain, cloud computing, and robotic process automation (Al-Khoury et al., 2025; Miraz, Hasan, Sumi, Sarkar, & Hossain, 2022). This digital transformation enables real-time accounting, mobile access, and in-depth analytics, and blockchain technology has the potential to transform record-keeping with its transparent and immutable ledgers (Al-Khoury et al., 2025). In the context of Industry 4.0, incorporating blockchain into AIS is supposed to shake up current accounting, auditing, and reporting processes, minimize manual efforts, and facilitate the efficient and secure use of information, which might alleviate the work of accountants and save substantial costs (Liu et al., 2024).

1.3 Problem Statement

Traditional accounting information systems have a major flaw called centralization, in which a central authority, such as the accounting department, determines what to record in the database. As the database is controlled centrally by the central authority, as a result, it creates a single point of failure (Han et al., 2023). Centralization creates differences in

information among the internal and external stakeholders and creates a problem regarding trust about the reported information (Monteiro & Cepêda, 2021). Under centralized AIS, fraud risks and data manipulation remain high. The current accounting system still depends on human-related skills, labor-centric, and a manual way, which gives scope for human error and intentional "cooking the books" to secure personal interest (Han et al., 2023). Under the centralized authority, the double-entry system is not adequate and cannot fully prevent fraud. As a result, the request for a more open system is growing to build confidence between the two parties (Nofel et al., 2024). Organizations have different practices in terms of managing the ledger in different formats. Practiced ERP systems don't have a multi-party validation system, and these things making accounting time-consuming for auditors (Liu & Han, 2025; Miraz, Jin, Salleh, Hossain, & Hasan, 2024). Due to the gap in information and agency problems, stakeholders are facing difficulties in terms of assessing the financial information and can't identify whether the information shared with them is actually true and fair (Monteiro & Cepêda, 2021). As a result, the audit process is becoming costly and, to some extent, it becoming inefficient. External auditors have to go through the paper-based system and signed documents for verification; these procedures are time-consuming and always open the door to human error and fraud (Han et al., 2023; Nofel et al., 2024). In summary, centralized AIS systems, manual procedures, complex processes, and high audit costs indicate the need to adopt alternative technologies, such as blockchain, to redefine AIS.

1.4 Research Question

This study analyzes how blockchain is redefining traditional AIS systems by focusing on four main questions:

- What is the impact of blockchain on the traditional AIS?
- What are the key applications of blockchain in Accounting?
- What advantages is blockchain offering for auditing and financial reporting?
- What are some of the obstacles to making blockchain a reality for accountants?

1.5 Research Objectives

This study aims to highlight the potential of blockchain to revolutionize the way Accounting Information Systems (AIS) record, secure, and report financial information, given that evidence and guidance are lacking and fragmented (Al-Khoury et al., 2025; Nofel, Marzouk, Elbardan, Saleh, & Mogahed, 2024).

Primary Objective:

To explore the concept of Blockchain Technology and how it serves to redefine Accounting Information Systems (AIS) by changing the way records are kept, controlled, and reported, and how it integrates with other digital technologies like Artificial Intelligence (AI), Internet of Things (IoT), and XBRL (Nofel et al., 2024).

Specific Objectives:

- To explain how blockchain technology impacts accounting concepts and processes outlined in this paragraph, such as 'event-based accounting', 'real-time accounting', 'triple entry accounting', 'continuous auditing,' and 'reducing information asymmetry and fraud (Han & Zhang, 2025).
- To discuss real, concrete, and suggested applications of blockchain in AIS, such as using blockchain as an accounting database, blockchain in ERP/e-procurement, and blockchain in combination with AI, IoT, and XBRL for real-time, verifiable, and standardized reporting (Mahdani et al., 2023; Nofel et al., 2024).
- To assess critical features like transparency, security, lower transaction fees, more accurate reporting, and to identify issues like scalability, interoperability, implementation cost, regulatory uncertainty, oracle dependence, and skill requirements (Ananta et al., 2024; Caldarelli, 2025; Mahdani et al., 2023; Olivia et al., 2025a)
- Existing reviews and bibliometric studies, such as calls for empirical implementation of blockchain-based AIS and TEA, regulatory and governance frameworks, integration architectures, education/skills development, were used to guide the development of a research agenda (Al-Khoury et al., 2025; Han et al., 2023; Nofel et al., 2024; Thies et al., 2023).

1.6 Significance of the Study

Blockchain presented in a way to redefine core AIS theory by altering how information is recorded, shared, and trusted. Blockchain and AI are theorized as a new system to reduce information asymmetry and agency problems by offering a common and trusted data source, and smart contracts would automate information controls (Liu et al., 2024). This agency–stakeholder perspective shows how blockchain is making manipulation so difficult and enables multi-stakeholder collaboration in AIS (Liu et al., 2024). A trust-centric model based on the TOE framework identifies technological, organizational, and environmental factors that affect trust in blockchain and promote the adoption of blockchain-based accounting systems (Seshadrinathan & Chandra, 2025). Agency–stakeholder theory is combined with TOE to present strong lenses for theorizing the way in which blockchain is changing the nature of AIS (which is distributed, real time, triple entry and continuously audited (Han et al., 2023)

Practical Significance

The study outlines the following ways in which blockchain-enabled AIS can be used in practice:

- Enhance efficiency and financial outcomes: empirical studies show that blockchain can be associated with AIS efficiency, which in turn is positively connected to business performance (Anh & Hue, 2023)
- Improve transparency, security, and ESG reporting in financial accounting and financial governance (Almadadha, 2024; Kunariyah & Dewayanto, 2025)
- Get cost savings and work automation: use of integration of blockchain and AIS to lower transaction costs, accelerate internal audits, and ensure that the reports are accurate (Ananta et al., 2024).

This offers a hands-on guide for firms, auditors and regulators preparing to transform AIS and build skills.

Significance for Future Researchers

Multiple reviews emphasize that research on blockchain–AIS and triple-entry accounting remains largely theoretical, with few real-world implementations (Thies et al., 2023). Many reviews highlight the theoretical nature of blockchain–AIS and the triple entry accounting research, with few practical cases implemented (Bellucci et al., 2022) . The integrated agenda of IoT, blockchain, and XBRL AIS identifies practical issues: integration

architecture, real-time reporting, and accounting quality issues (Nofel et al., 2024). This study's significance is not only descriptive future potential, but future within strong theories (agency-stakeholder, TOE). Provide researchers with a direction for conducting empirical AIS pilots, designing oracles, and reporting on ESG, governance, and education and skill gap analysis(Ariciu et al., 2026; Caldarelli, 2025)

CHAPTER II: LITERATURE REVIEW

2.1 Brief Review of Chapter

The literature review provided in this chapter summarizes the current state of the literature on blockchain and its implications for accounting. It began by introducing blockchain and its fundamental properties: decentralization, immutability, and smart contracts, and how they equate to transparency and lack of information asymmetry in AIS. It then examined specific accounting applications, in particular, triple-entry accounting, real-time recording, and automation, which have a good theoretical foundation but are not yet broadly applied in practice. The chapter also identified the primary advantages of blockchain for AIS (transparency, security, efficiency, traceability) and the key challenges holding back blockchain adoption (regulation, cost, technical, and organizational). It ended with a conceptual framework that connects these pieces: blockchain's characteristics have a significant impact on AIS capability, which should enhance auditing and reporting. The bottom line is that while the benefits of blockchain for accounting are clearly outlined on paper, there is limited real-world evidence to support this.

2.2 Introduction to Blockchain & Accounting Information Systems

The literature on blockchain and accounting focuses on three related questions: What is blockchain, how it transforms accounting information systems, and what benefits and barriers drive uptake. The most important and consistent findings across the attached papers are that the blockchain's most significant characteristics are decentralization, distributed ledger, immutability, and smart contract automation, and that, although many accounting applications are more conceptual than fully realized, the main concern is the lack of suitable implementations (Bellucci, Cesa Bianchi, & Manetti, 2022; Garanina, Ranta, & Dumay, 2022). Blockchain is typically defined as a decentralized, distributed ledger of validated transactions on a network, rather than under a single central authority (Bellucci et al., 2022; Hasan, Miraz, Sumi, & Sarkar, 2021; Miraz, Gazi, & Hasan, 2023; Miraz, Hasan, Sumi, Sarkar, Hossain, et al., 2022). Because once the network participants accept the transaction, the record is added in a chronological order and

cannot be changed, the integrity of the ledger is ensured and it has accounting relevance (Bellucci et al., 2022; Garanina et al., 2022). Transparency also comes from distribution, as changes to the ledger will be visible to all authorized members of the network, and this could help to eliminate the information asymmetry between transacting parties (Garanina et al., 2022). The second key aspect of this literature is smart contracts. They are appealing for accounting-related processes, including payroll, reconciling accounts, compliance, and supplier transactions, as they can automatically execute transactions when specific conditions are fulfilled based on rules (Accounting et al., n.d.; Bellucci et al., 2022; Manubhai & Llp, 2023). The fourth recurring theme is that of immutability: records are considered tamper-proof and append-only, thus increasing trust, auditability and traceability, but not absolute invulnerability (Bellucci et al., 2022; Han et al., 2023; Manubhai & Llp, 2023). In the wider literature attached, AIS is described as the system of organization for conducting business transactions, processing accounting information and generating financial and non-financial information for decision making and reporting (Zaçe & Shuli, 2025). Traditional AIS structures tend to be internal, centralized, on periodic processing, and involve a significant amount of manual recording, reconciling and after the fact verification(Han et al., 2023; Nofel et al., 2024). The use of these traditional arrangements becomes slower, more prone to errors and more susceptible to manipulation and fraud risks as the volumes of transactions and complexity of organizations increase (Nofel et al., 2024; Zaçe & Shuli, 2025). It is therefore suggested that blockchain will not replace AIS but provide an extra layer of infrastructure, which can be adapted to change selected AIS functions. The literature suggests that businesses will not throw away legacy systems entirely and will opt to adopt a hybrid approach instead as they incorporate blockchain into some parts of their operations (Han et al., 2023). This is relevant for chapter framing because blockchain based AIS are typically envisioned as a progression from centralized record keeping to multi-party validated, shared and more automated information systems (Han et al., 2023; Maulina & Nazaruddin, 2025).

2.3 Blockchain And Accounting

Triple-entry accounting is a big concept leap from blockchain to accounting. It is a system that attaches a common cryptographic entry to the blockchain to conventional debit-credit records to provide a mutually validated, non-reputable proof of transactions that are resistant to tampering (Bellucci et al., 2022; Hasan et al., 2021). There is strong consensus in the literature that TEA would be useful for reducing the manipulation and increase transparency, but that it has not yet been widely implemented in practice, and most existing studies are still theoretical in nature(Dewayanto et al., 2025; Thies et al., 2023). A second theme is real-time accounting. Blockchain timestamping and continuous recording can help capture transactions immediately, provide real-time ledgers, and log reports more timely than periodic batch-based systems (Accounting et al., n.d.; Nofel et al., 2024). A third theme is automation: smart contracts and streamlined shared data can minimize repetitive work, manual data entry, reconciliation and time to process compliance (Bellucci et al., 2022; Han et al., 2023; Nofel et al., 2024). A fourth theme is fraud reduction, since it is expected that while the data cannot be easily manipulated, forged, or altered, it will be difficult to earn extra money (Accounting et al., n.d.; Nofel et al., 2024; Yu et al., 2018).

2.4 Benefits of AIS

The most prominent benefit of blockchain in AIS is transparency. Shared ledgers, distributed bookkeeping, and transaction histories create greater trust and transparency, and enhance oversight within and beyond the company (Ashif, Mahmud, & Hasan, 2013; Han & Zhang, 2025; Mahadi Hasan Miraz, AK Mahbubul Hye, et al., 2020; Miraz, Sharif, Hassan, & Hasan, 2020). The other plus point is security, as cryptographic validation and immutable records can enhance Data Integrity, but in the literary works, it is treated as relative security instead of absolute protection (Ashif et al., 2013; Miraz, Hasan, Rekabder, & Akhter, 2022; Rana, Nor, Hossain, & Amiruzzaman, 2025). The third advantage is cost and efficiency improvement. There are several reviews that connect blockchain-based AIS with reduced reconciliation requirements, minimized manual errors, reduced repetitive work, and quick settlements and compliance (Bellucci et al.,

2022; Han et al., 2023). The fourth benefit is traceability, as transactions can be tracked from their origin and then later verified with timestamps and chained records, a benefit that can be useful in auditing, reporting, and supply-chain accountability(Accounting et al., n.d.; Han et al., 2023)

2.5 Adoption Challenges

From the literature, it is clear that blockchain adoption barriers are great. Regulatory uncertainty is one of the most recurring restrictions, particularly in the area of crypto asset reporting, taxation, audit requirements, and cross-jurisdictional uniformity (Abdullah, 2025; Garanina et al., 2022; Jayasuriya & Sims, 2023). Another common concern is high implementation cost, such as infrastructure, energy use, equipment requirements and organizational transition cost (Accounting et al., n.d.; Dewayanto et al., 2025). There is also a strong emphasis on the technical aspects, such as scalability, latency, confidentiality, privacy, cybersecurity, smart-contract vulnerabilities, and the integration of blockchain into existing systems (Garanina et al., 2022; Manubhai & Llp, 2023; Yu et al., 2018). Organizational readiness is another issue that needs to be taken care of. Literature indicates gaps in skills among accountants, opposition to institutional change, and the need to restructure the processes rather than simply automate the old processes (Abdullah, 2025; Ariciu et al., 2026; Garanina et al., 2022). That's why many reviews end up saying that blockchain use in accounting is still in its infancy and developmental stages, not fully developed or standardized (Garanina et al., 2022; Lalwani, 2023; M. H. Miraz, M. T. Hasan, F. R. Sumi, S. Sarkar, & M. Majumder, 2020).

2.6 Conceptual Framework

The following literature supports the framework: Blockchain Features → Transparency/Security/Smart Contracts → AIS Transformation → Improved Auditing and Reporting. The characteristics of blockchain are decentralization, distributed ledgers, immutability, and programmable smart contracts (Bellucci et al., 2022; Yu et al., 2018). All these features contribute to the creation of intermediate capabilities such as transparency,

traceability, enhanced security, automatic execution, joint validation, etc. (Han et al., 2023; Nofel et al., 2024). Those capabilities then turn AIS into a real-time system that allows for real-time recording, less need for reconciliation, and more effective reporting processes (Han et al., 2023; Maulina & Nazaruddin, 2025; Nofel et al., 2024). This is expected to be achieved by improving the quality of auditing and reporting, with timely, accurate, and verifiable accounting information (Dewayanto et al., 2025; Hossain & Rana, 2025; Yu et al., 2018). The primary problem is that this is a well-conceived framework, but evidence in practice is less plentiful than the theory would suggest (Accounting et al., n.d.; Al-Khoury et al., 2025; Thies et al., 2023). Overall, the chapter can contribute that, although the blockchain has a great theoretical promise to transform AIS and enhance auditing and reporting, it has limited empirical implementation and is limited by regulation, cost and technical restrictions.

CHAPTER III: RESEARCH METHODOLOGY

3.1 Brief Review of Chapter

This chapter details the methodology of the study, Systematic Literature Review (SLR) in line to the PRISMA framework, and the rationale for the selection of this methodology for a field of study such as blockchain-AIS research, which is still conceptual and thematically broad. It passed through the four phases of the PRISMA (identification, screening, eligibility, and inclusion) and the databases it was searched (Google Scholar, Scopus, ScienceDirect, Springer, Wiley), as well as the keyword combinations used to filter blockchain-specific accounting applications and not crypto-centric or purely technical research. The selection of articles was done by narrowing the search of the articles to English-language and peer-reviewed ones published between 2018 and 2025 and related to blockchain and accounting. After summarizing those studies, the chapter concluded by describing the thematic and content analysis techniques that were used to process them into the categories of recur, transparency, auditing, automation, integration and adoption barriers that organize the findings in Chapter IV.

3.2 Research Design

The study utilizes a Systematic Literature Review (SLR) design to find, screen, evaluate, and summarize published research on the new role of blockchain in Accounting Information Systems (AIS) by following the PRISMA framework(Ahmed, 2025; Nofel et al., 2024). Considering the appropriateness of PRISMA, the authors pre-test a module that involves transparency, rigor, and replicability in article selection and reporting by using the PRISMA to ensure the aforementioned prerequisites(Han et al., 2023; Nofel et al., 2024). The Systematic Literature Review (SLR) is relevant to the topic because blockchain in accounting is a relatively new area and has considerable literature and

concepts to cover, some empirical evidence, and a number of themes that could be explored using blockchain, such as transparency, continuous auditing, smart contracts, ERP integration, fraud prevention, and changes in the accountant's role(Ahmed, 2025; Han et al., 2023). Several studies also point out that the literature is still expanding, not sufficiently empirically tested and it is characterized by integration and regulatory uncertainties, so that systematic synthesis is more appropriate than a single case or purely empirical design at this stage(Sarwar et al., 2021; Universitas Sumatera Utara et al., 2025).

3.3 PRISMA Method

In this study, the PRISMA procedure involves identification, screening, eligibility, and inclusion. The identification stage involves searching selected academic databases using predetermined search strings related to blockchain, AIS, accounting, and financial reporting(Han et al., 2023; Nofel et al., 2024). In the past, similar reviews began with keyword searches using a structured approach and then added records to reference software to organize and remove duplicates (Han et al., 2023). The titles, abstracts, and keywords are considered in screening to identify duplicate and obvious irrelevant studies. In the eligibility stage, the eligibility criteria are applied to the full text of the remaining articles, particularly the relevance to the blockchain in accounting or AIS topic, publication type, language and time span. The final inclusion stage only includes studies that are directly relevant to the use of blockchain in accounting systems, financial reporting, auditing, ERP-AIS integration, or other considerations relating to transparency and compliance within financial reporting.

3.4 Data Sources

Google Scholar, Scopus, ScienceDirect, Springer and Wiley are the primary databases used in the review. These sources are appropriate, since the previous reviews on Blockchain in Accounting and AIS were conducted in Scopus and other large academic databases to have a wide peer-reviewed coverage in accounting, finance, management

and information systems(Han et al., 2023; Nofel et al., 2024). The width of indexing of peer-reviewed journals, along with the use of Scopus in blockchain-AIS review work, make it a particularly useful source. Multiple databases minimise the chances of missing relevant studies, which is particularly important in a rapidly developing field like blockchain and AIS because some of the reviews recognize that a single database might not be comprehensive. Google Scholar also can be useful in trying to get hold of interdisciplinary studies of accounting and technology, which might be spread out between various journals and publishers(Sarwar et al., 2021).

3.5 Search Keywords

The following keyword combinations are used in the search: “Blockchain” AND “Accounting Information Systems”; “Blockchain” AND “AIS”; “Blockchain” AND “Accounting”; and “Blockchain” AND “Financial Reporting.” These terms echo previous practices of reviewing, where combinations of keywords like “blockchain” and “accounting,” “auditing,” and AIS-related research words were used to find fundamental blockchains accounting studies and adjoining financial research. These are suitable because the literature considers the accounting impact of blockchain technology in multiple interconnected areas: the accounting implications of blockchain technology in terms of database architecture in AIS, transparency and trust, continuous auditing, smart contracts, ERP integration, and financial reporting quality. Adding “AIS” and “financial reporting” extends retrieval from narrow systems papers to encompass studies on auditability, compliance, and the process of transformation to financial reporting.

3.6 Inclusion and Exclusion Criteria

Inclusion criteria involve the following inclusion criteria: (1) articles must be published in English; (2) articles should be peer-reviewed journal articles; (3) the publication year should be between 2018 and 2025; (4) direct relevance to the application of blockchain in accounting, AIS, auditing, ERP integration or financial reporting. The 2018-2025 time period is justifiable because blockchain has been gaining sustained attention from

accounting researchers since the late 2010s, and the most pertinent literature focusing on accounting and information systems is found in the most recent years(Nofel et al., 2024). The following are excluded: (1) Non-English studies, (2) Duplicate records, (3) Non-peer reviewed publications, (4) Studies not directly relevant to the research objective (Ahmed, 2025). Irrelevant papers are those dealing exclusively with cryptocurrency, blockchain without accounting application, general technology papers with no reference to AIS accounting processes, auditing or reporting (Ahmed, 2025; Sarwar et al., 2021).

3.7 Prisma Flow Diagram

The number of records at each stage of the PRISMA flow diagram should be reported (identified, screened, eligible, and included). This architecture is based on the PRISMA logic that is already applied in blockchain-accounting reviews(Han et al., 2023). A good narrative format is: records retrieved by searching the database, records after the removal of duplicates, records screened based on their titles and abstracts, articles assessed for eligibility on the basis of their full text, and the final studies included in the review. The diagram, when the uploaded library is used as the final database, can have 20 studies included, as the present review corpus consists of 20 papers, which were selected after relevance ranking and consolidation from the larger search process. This larger process involved the extraction of numerous records and then the screening and de-duplication of those records based on relevance, as seen in previous reviews of the literature conducted under PRISMA.

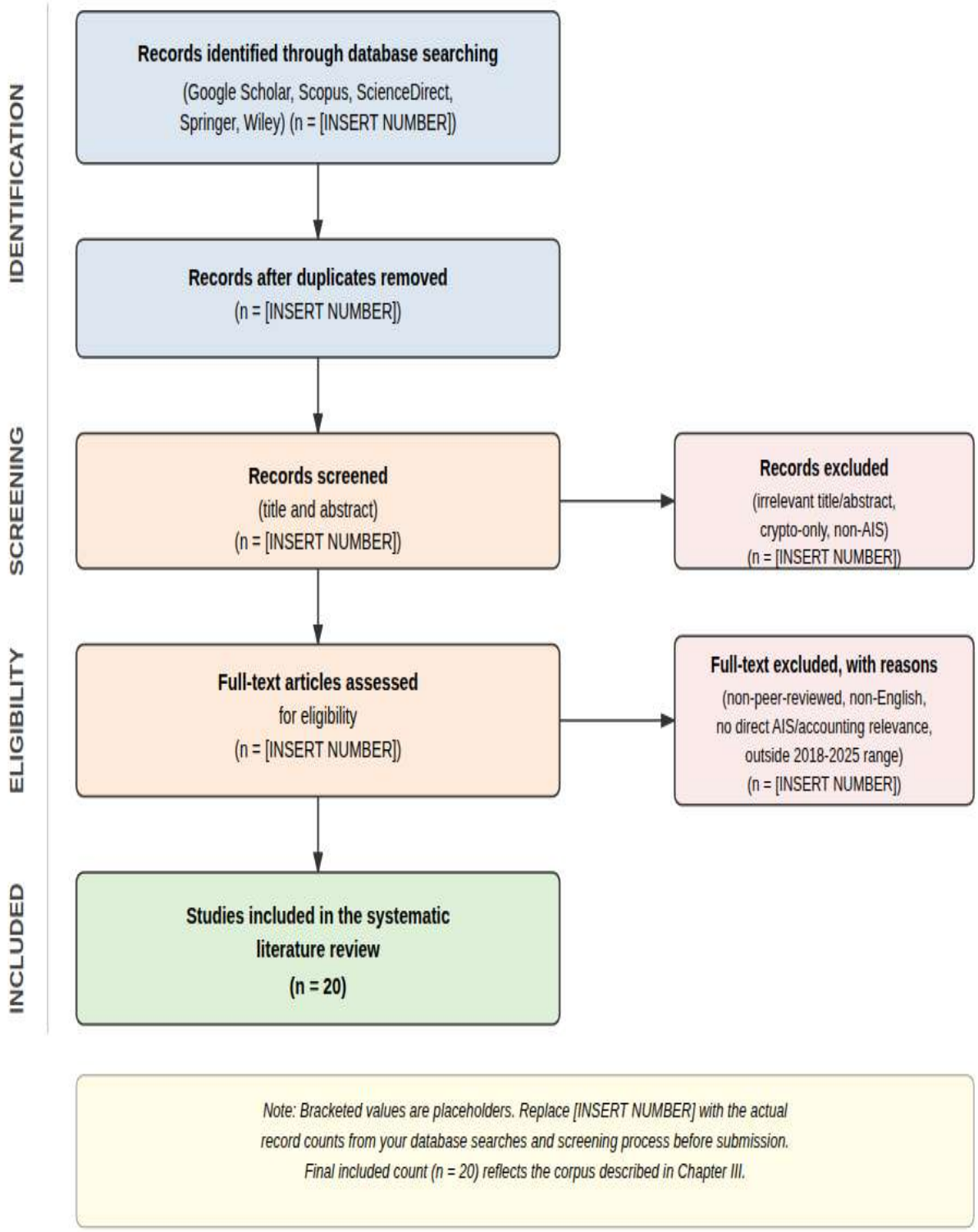

Figure 3. 1 PRISMA Flow Diagram of Study Selection

3.8 Data Analysis Method

Thematic analysis and content analysis are used to analyze the included studies. Because it was suitable for the nature of the studies, thematic analysis was used. Prior blockchain accounting reviews identified studies as themes of transparency and trust, continued audit, smart contracts, governance, the accountant's role, fraud prevention, and system integration. Content analysis can facilitate systematic abstraction of publication year, research questions, method, primary results and reported advantages/disadvantages. Findings from this study can be categorized into various themes including: AIS architecture change, transparency and immutability, real-time reporting, auditing transformation, ERP integration, smart automation, and barriers to adoption. Barriers should be reported separately, particularly regulatory uncertainty, scalability, legacy-system integration, implementation cost, privacy and skill shortages, which are found more than once in the literature.

CHAPTER IV: FINDINGS & ANALYSIS

4.1 Brief Review of Chapter

The Findings reveal that blockchain is a paradigm shift from the traditional accounting information systems, which are based on a centralized record-keeping system to a distributed, secure, and increasingly real-time system for validating transactions, auditing, and reporting (Han et al., 2023; Liu et al., 2024; Nofel et al., 2024). Overall, the most prominent themes in the literature related to blockchain and AIS include how blockchain influences AIS architecture, auditing, financial reporting quality, barriers to adoption, and the significant disconnect between the promise of blockchain and its actual implementation(Bellucci et al., 2022; Han et al., 2023; Thies et al., 2023).In this chapter, blockchain's impact on AIS, auditing, and financial reporting is discussed.

4.2 Blockchain’s Impact on AIS

Blockchain fundamentally alters the fundamental logic of AIS, which is a system managed by a single organization, to one where multiple parties share, verify, and agree on the data associated with transactions (Han et al., 2023; Liu et al., 2024; Nofel et al., 2024). This is important because the traditional AIS and double-entry accounting systems are routinely characterized as open to manipulation, expensive to verify, and reliant on retroactive assurance, particularly when transaction validation is based on centralized control and checking in the future (Nofel et al., 2024). The research clearly correlates blockchain-led AIS with enhanced data integrity, traceability, and transparency (Ananta et al., 2024; Liu et al., 2024; Prasetianingrum & Sonjaya, 2024). The most repeated mechanism for this is immutability, when transactions are validated and recorded on the ledger, changing the information is much more complicated than it is in traditional systems (Hossain & Rana, 2025; Liu et al., 2024; Olivia et al., 2025b). Based on this, several reviews suggest that blockchain-based AIS can enhance the transparency and trust in accounting reports and alleviate information asymmetry between firms and users of financial information (Han et al., 2023; Liu et al., 2024; Manubhai & Llp, 2023), Another

key discovery here is that blockchain is driving AIS towards real-time accounting. The importance of rapid, accurate and real-time financial and nonfinancial information has been highlighted in prior AIS literature (Zaçe & Shuli, 2025). To address these needs, blockchain research is developing systems to record transactions continuously, with real-time monitoring capabilities, and by reducing the time lag between economic events and accounting recognition (Han et al., 2023; Nofel et al., 2024; Olivia et al., 2025b). In this context, blockchain is not just replacing current accounting processes, but also affecting the when, where and how of accounting data in the AIS (Liu et al., 2024; Manubhai & Llp, 2023).The AIS literature also indicates that the value of blockchain goes beyond technical, to organizational. Dynamic AIS requires flexible systems, complementary intelligence tools and IT-savvy accountants (Monteiro & Cepêda, 2021). This is consistent with findings in blockchain research that the gains that AIS can provide are greatest when blockchain is combined with smart contracts, analytics, and with the larger concept of digital transformation, and not only as an alternative to current databases (Hossain & Rana, 2025; Nofel et al., 2024). Conceptual writing is still stronger, although there is less empirical evidence than there is conceptual, but the few quantitative studies that do exist agree. Results of the survey of 139 Vietnam e-commerce enterprises showed that there was a positive correlation between the dimensions of blockchain and efficiency of AIS, and the effectiveness of AIS had a positive relationship with the business performance of the enterprises (Anh & Hue, 2023). The findings of another literature review also show that, overall, blockchain technology adoption with AIS can lower transaction cost and speed up the internal audit process, and enhance the accuracy of reporting, but the benefits are dependent on organizational readiness and managerial support (Ananta et al., 2024).

4.3 Blockchain and Auditing

Literature shows that blockchain's effect is clearest in auditing, since the information on blockchain is traceable, time stamped and provided to all participants (Han et al., 2023; Kunariyah & Dewayanto, 2025; Liu et al., 2024). In the traditional system, an auditors have to give chunk amount of time to validate the recorded transaction are genuine,

complete, and unaltered (Nofel et al., 2024). Blockchain solves this by incorporating verification into the very infrastructure of a transaction, and, as a result, less work must be done to reconcile or confirm a transaction (Manubhai & Llp, 2023; Nofel et al., 2024). One of the major themes is the shift to continuous auditing. In the various reviews of blockchain accounting, continuous auditing has been cited as one of the four major themes of the blockchain accounting (Han et al., 2023; Manubhai & Llp, 2023), This will help overcome the conventional lag between the transaction's execution, accounting and assurance work (Manubhai & Llp, 2023; Nofel et al., 2024). It's also found that blockchain auditing is closely related to automation. Immutable storage will provide an audit trail; smart contracts can be used to automate control activities and selected audit relevant procedures (Kunariyah & Dewayanto, 2025; Liu et al., 2024; Nofel et al., 2024). Some papers go so far as to say that blockchain data become even more valuable when combined with AI tools as they offer enhanced inputs to anomaly detection, risk analysis, and assurance work (Han et al., 2023; Hossain & Rana, 2025; Manubhai & Llp, 2023). However, the results are not in favor of the one-size-fits-all assertion that blockchain sucks in auditors. The literature more frequently reports that the blockchain can eliminate some of the traditional audit procedures and transform audit practices rather than totally eliminate professional judgment (Ariciu et al., 2026; Liu et al., 2024; Nofel et al., 2024). This is crucial since much of the audit assertion relies on the validity of certain on-chain data but also on the reliability of off-chain data, inputs, and the governance process(Caldarelli, 2025).

4.4 Blockchain effects on financial reporting

It is important to note that blockchain seems to enhance the quality of financial reports primarily by increasing transparency and timeliness and by providing robust evidential support for transaction movements(Kunariyah & Dewayanto, 2025; Liu et al., 2024). Financial reporting quality reviews allege that blockchain can facilitate easier auditing of records, lower the possibility of record manipulation, and enhance the accuracy and reliability(Kunariyah & Dewayanto, 2025). It's very important when users are skeptical of management judgement and/or are concerned about earnings management(Liu et al.,

2024; Thies et al., 2023). One related stream is on triple entry accounting as an innovation in reporting. From this perspective, blockchain introduces a third party entry, represented by the blockchain, that is cryptographically coupled with the transactions that are performed by the transaction counterparties, which can increase representational faithfulness and limit opportunities for unilateral manipulation (Dewayanto et al., 2025; Monteiro & Cepêda, 2021; Thies et al., 2023). Reviews of TEA end up finding that blockchain-based triple-entry systems provide real-time, encrypted, and immutable records, and smart contracts can minimize reporting mistakes and accelerate reporting timelines(Dewayanto et al., 2025; Nofel et al., 2024). There is some evidence, although not much and of a theory-oriented nature. A systematic review article on blockchain-based triple entry accounting concludes that the existing research is mostly conceptual and that there is a lack of practical trials and assessments (Thies et al., 2023). This restriction is shared by other general blockchain-accounting studies that explicitly urge increased empirical research, greater case coverage, and industry and jurisdiction specific applications(Almadadha, 2024). Blockchain reporting is also expanding beyond the financial statement into ESG reporting and digitally verifiable reporting. In the recent review, the focus is on the rise of blockchain interest in accounting and auditing, and ESG reporting, particularly in the context of permissioned blockchains and attestation processes to solve verification issues (Caldarelli, 2025). This extends the scope of AIS redefinition, as future AIS will have to handle more than just monetary data flow, but also verified nonfinancial and sustainability data flow (Nofel et al., 2024)

4.5 Comparative themes

Table 4.1 Summary of Key Themes and Findings from the Systematic Literature Review

Theme	Main Finding	Discussion Implication	Key Support
AIS architecture	Blockchain shifts AIS to shared, immutable ledgers	AIS becomes more transparent and less centralized	Distributed, tamper-proof records(Nofel et al., 2024)
Auditing	Verification becomes more continuous and automated	Auditors move from manual checking to exception analysis	Continuous auditing, automation(Kunariyah & Dewayanto, 2025)
Financial reporting	Timeliness and reliability tend to improve	Reporting quality may rise where data inputs are trustworthy	Real-time, accurate, auditable records(Kunariyah & Dewayanto, 2025)
Triple-entry accounting	Shared cryptographic entries can reduce manipulation	Reporting faithfulness may improve, but implementation is immature	TEA remains largely theoretical (Thies et al., 2023)
Broader AIS evolution	Integration with AI, IoT, and XBRL is a future direction	AIS redesign is systemic, not just ledger replacement	Integrated digital ecosystems (Nofel et al., 2024)

4.6 Challenge of Blockchain Adoption

The research is consistent with the literature indicating that adoption obstacles are significant even when the anticipated advantages are significant (Han et al., 2023; Liu et al., 2024; Olivia et al., 2025b). Scalability, interoperability, latency, privacy, security and system integration with legacy accounting systems are the most frequently mentioned technical challenges (Almadadha, 2024; Manubhai & Llp, 2023). These limits are significant as AIS needs to handle big batch of transactions reliably, often across diverse enterprise systems (Zaçe & Shuli, 2025).Regulation is one of the biggest challenges. Other papers indicate that difficulty with regulatory uncertainty, accounting treatment and lack of harmonized standards delay adoption, both in the context of financial reporting and in the case of accounting for crypto (Ahmad & Abdullah, 2025; Almadadha, 2024; Miraz, Hasan, Masum, Alam, & Sarkar, 2020; M. H. Miraz, M. T. Hasan, F. R. Sumi, S. Sarkar, & M. I. Majumder, 2020). Other financial reporting quality reviews also cite high implementation costs and the absence of regulation as the primary challenges to blockchain adoption(Kunariyah & Dewayanto, 2025). This clearly show and explain why literature is more focused on conceptual level rather than in documented enterprise deployment (Abdullah, 2025; Thies et al., 2023). Another hurdle is the absence of blockchain's input reliability solution. Weak external data governance can negatively impact the decentralization and transparency advantages of accounting events that enter the chain from oracles or other external sources (Caldarelli, 2025). This is a very important point to discuss for AIS research, as capturing the original economic event correctly, not only in immutable storage, but also in degree of faithfulness to representation (Monteiro & Cepêda, 2021).Another limitation is readiness of the humans and human systems. Skills gaps, technological literacy issues and a need for education and upskilling of accounting professionals are repeatedly cited in reviews(Abdullah, 2025; Ariciu et al., 2026; Olivia et al., 2025b). Further research on the implementation of AIS in developing countries also points to AIS literacy, automation capability and environmental factors as being important prerequisites to the successful adoption of AIS (Sultana et al., 2025). In practice, blockchain redefines AIS only as institutions, people and governance structures change in step with the technology (Ananta et al., 2024; Hossain & Rana, 2025).

4.7 Future Research Opportunities

The most obvious research gap is a greater number of empirical studies. Major reviews explicitly agree that the research focus in the field of blockchain accounting is still firmly grounded in conceptual and review work, with few field implementations, case assessments or longitudinal evidence (Almadadha, 2024; Han et al., 2023; Thies et al., 2023). Further research and experimentation in actual organizational environments are, therefore, advised, as are comparisons of industry and jurisdiction, and assessment of blockchain impacts on cost, error rates, audit time, and reporting quality rather than assumptions (Almadadha, 2024; Thies et al., 2023). The second opportunity is related to governance and standards. What is the role of businesses in governing blockchain-based AIS, which accounting transactions should be represented in the blockchain, and how to regulate to support innovation without compromising accountability are questions that have been raised in the literature (Han et al., 2023). Studies cited are for digital accounting standards, triple entry accounting (TEA) auditing standards, and regulation harmonization between different jurisdiction (Dewayanto et al., 2025).

CHAPTER V: RECOMMENDATION & CONCLUSION

5.1 Brief Review of Chapter

The whole study was brought together in this last chapter, which answered the four research questions put forward in Chapter I. It determined that blockchain is moving AIS from a single-authority to multi-party, jointly validated record-keeping, and identified specific applications in the areas of triple-entry accounting, real-time recording, smart contracts automation, and integration with AI, IoT, and XBRL. The chapter stressed the need for a move away from periodic verification to continuous auditing in the context of auditing and reporting, and that the role of professional judgment does not disappear, it only changes to focus on exceptions and data governance. However, regulatory uncertainty, cost, technical limitations, and a lack of blockchain-expert accountants are still stumbling blocks to adoption. The chapter then drew parallels to the agency–stakeholder theory and TOE presented in Chapter I, discussed its implications in the specific market and policy environment in Bangladesh, and concluded with a discussion of the study's limitations, recommendations for future research, and a final reflection: blockchain has great potential for AIS, but it remains far from reality, globally, and especially in Bangladesh.

5.2 Summary of Key Findings

5.2.1 Blockchain's Impact on Traditional AIS

The review shows that blockchain technology is moving AIS from a one-party model and a single authority that creates what should be recorded, to a multi-party model, where multiple parties jointly validate and share the transaction data(Han et al., 2023; Nofel et al., 2024). It is based on blockchain's main attributes: decentralization, distributed ledger, immutability, and programmable smart contracts, which have helped to enhance transparency and mitigate the information asymmetry that has long plagued financial data in the centralized system(Bellucci et al., 2022; Garanina et al., 2022; Yu et al., 2018). The literature continually associates blockchain based AIS with higher data integrity and traceability when compared to conventional double-entry systems(Ananta et al., 2024;

Hossain & Rana, 2025; Prasetianingrum & Sonjaya, 2024). By replacing the ledger, blockchain is not just replacing a digital copy, it's changing who has access to it and how that access is validated, bringing accounting closer to the continuous, distributed proof than the periodic, centrally declared proof.

5.2.2 Key Applications in Accounting

The studies reviewed have four themes when it comes to application. Triple-entry accounting (TEA) applies an additional third entry to the traditional debit-credit accounting system, thereby enabling the parties to validate each other's transactions instead of relying on the individual party's own transactional record, which makes it much more difficult to obscure manipulation of the data (Dewayanto et al., 2025; Thies et al., 2023) . Real-time accounting consists of ongoing recording with timestamps that make it easier to reduce the lag between an economic event happening and being recognized in accounting, as opposed to legacy AIS that works through batch processing cycles (Han et al., 2023; Olivia et al., 2025b) . Smart-contract automation allows for automatic execution of the accounting rules, decreasing the manual reconciliation and repetitive compliance work when the conditions of the contract are met (Bellucci et al., 2022; Manubhai & Llp, 2023) . Lastly, integration with complementary technologies, such as Artificial Intelligence, Internet of Things, and XBRL, further amplifies the impact of blockchain beyond the ledger, enabling standardized and independently verifiable reporting, which further enhances its reporting value (Al-Khoury et al., 2025; Mahdani et al., 2023). These applications indicate that blockchain is poised to change the way transactions are initiated, verified, and reported throughout the accounting cycle, and isn't limited to bookkeeping.

5.2.3 Advantages for Auditing and Financial Reporting

The most straightforward way blockchain improves data auditing is by allowing for continuous auditing, as opposed to the periodic, retrospective approach that was previously used. Continuous auditing means that data is checked continuously throughout

the process, as opposed to only at the end. This can help to reduce the workload for auditors and improve efficiency. Despite that, the review concluded that the auditor is not eliminated from the process by blockchain, but rather the auditor's work is shifted away from the manual verification and towards the exception review, off-chain data quality, and governance of information that is added to the blockchain (Ariciu et al., 2026; Caldarelli, 2025; Liu et al., 2024). The important lesson is that, while blockchain helps to instill confidence in the processes taking place on the ledger, it does not replace the need for professional judgment in determining the accuracy of the data recorded on the ledger and its processes. Regarding financial reporting, the studies reviewed link blockchain with an increase in timeliness, reliability, and evidential support for movement of transactions especially if users are skeptical of the management's judgment or are worried about earnings manipulation (Kunariyah & Dewayanto, 2025; Liu et al., 2024; Thies et al., 2023). Finally, the reporting is not only in financial statements, but also in ESG and Sustainability Reports, which makes the range of the expected certification of “accounting information” much broader (Caldarelli, 2025; Nofel et al., 2024).

5.2.3 Obstacles to Adoptions

On the positive side, there are four consistent barriers to adoption. The greatest hurdle cited is the regulatory uncertainty, particularly concerning crypto-asset accounting, taxation, and harmonized cross-jurisdictional standards (Abdullah, 2025; Garanina et al., 2022; Jayasuriya & Sims, 2023). A second hurdle is high implementation costs, which are related to infrastructure, energy consumption, and organizational change, especially for smaller organizations that lack an IT budget (Dewayanto et al., 2025; Kunariyah & Dewayanto, 2025). The third barrier is related to the technical constraints of scalability, latency, and integration with legacy systems, as many of the existing AIS were not designed for use with distributed ledgers (Almadadha, 2024; Manubhai & Llp, 2023; Yu et al., 2018). Last but not least, a lack of accounting professionals who understand blockchain, coupled with a reluctance to change the status quo, remains a major hurdle to adoption even when the technology is in place (Abdullah, 2025; Ariciu et al., 2026; Olivia et al., 2025b; Sultana et al., 2025). The results of these studies confirm the findings of Chapter IV, where we studied the persistent dichotomy between the conceptual promise of the technology and its practical implementation

(Almadadha, 2024; Han et al., 2023; Thies et al., 2023) that the technology is ready, but the regulatory, financial, technical and human infrastructure is not.

5.3 Theoretical Contribution

The results support the agency–stakeholder and Technology-Organization-Environment (TOE) viewpoints presented in Chapter I (Liu et al., 2024; Seshadrinathan & Chandra, 2025). Verification is spread across various parties rather than a single internal party, a feature which reduces the information gap created between preparers and users of financial information, directly addressing the agency problem that has been long recognized as a key concern in AIS theory (Liu et al., 2024; Monteiro & Cepêda, 2021). Blockchain approach to information asymmetry is different from the traditional approach of agency theory which views asymmetry as a structurally hard problem to solve or eliminate, by transforming it into a technical design problem: information asymmetry is reduced not by changing incentives, but by making the underlying record jointly verifiable. This theoretical advantage, however, also helps to explain how this has not been equally realized: technological readiness, organizational capacity, and environmental factors including regulation must all be in place before blockchain-based AIS can be adopted in practice instead of pilot studies (Seshadrinathan & Chandra, 2025). Together, agency–stakeholder theory and TOE provide a coherent explanation for why blockchain is likely to transform the AIS into a distributed, real-time and continuously audited system and why this transformation is incomplete(Han et al., 2023) : theory is strong, but theory is not enough to explain the adoption.

5.4 Practical Implications

This review is meant to provide accounting firms, auditors and regulators with a glimpse of how the profession is moving, not a blueprint for how to implement it. However, empirical evidence is still limited, suggesting that the use of blockchain technology to enhance the efficiency of AIS is positively correlated with business performance (Anh & Hue, 2023), and that blockchain technology can reduce transaction costs, speed up internal audits, and increase reporting accuracy when organizational readiness and managerial support are provided (Ananta et al., 2024). The auditor is expected to move

to system design, oracle reliability and exception cases in place of the transaction-by-transaction checking (Ariciu et al., 2026; Caldarelli, 2025). This is an important evolution in the audit skill set that's needed: knowledge of cryptographic verification, smart-contract logic and consensus mechanisms will be held in addition to the traditional financial-statement skills. For firms looking into blockchain-based AIS, it is essential to view it as a long-term organizational shift that demands investment in employees' training and processes, rather than just an upgrade to software (Abdullah, 2025; Ariciu et al., 2026) . Regulators, on the other hand, have an evident opportunity to address one of the biggest hurdles in adoption by simply clarifying the tax accounting and reporting of blockchain-based transactions and crypto-assets (Abdullah, 2025; Jayasuriya & Sims, 2023), since much of the reported hesitation in adoption in this review is not due to the uncertainty about blockchain technology itself, but the uncertainty about how to account and report blockchain technology.

5.5 Impact on the Market

The 20 studies cited in this paper come from international literature, but the application of blockchain to Bangladesh's financial market and accounting profession can already be seen in practice, as well as theory. It was a Bangladesh Bank's own initiative, in the form of a trade-finance circular, which had asked the authorized dealers to move the communication of Letter of Credit to electronic medium of communication, leading to the first Inland LC on a locally developed blockchain based digital trade platform executed by Prime Bank PLC, wherein Dhaka Bank PLC was the bank of issue. This one case is important for AIS research because it shows in an institutional environment in Bangladesh, the sort of movement towards distributed and verifiable transaction recording the reviewed international literature speaks of in the abstract (Han et al., 2023; Liu et al., 2024). Concurrently, the potential of blockchain in Bangladesh is influenced by a remarkable paradox: cryptocurrency is banned, but blockchain infrastructure is being actively promoted. Bangladesh's National Blockchain Strategy outlines the various application areas of the blockchain, which have been anticipated to be realised by 2030, has focused mainly on short and medium-term objectives, and positions blockchain as

pivotal in the establishment of public trust and accountability in government and public-sector processes. While the legal status of blockchain-based accounting for crypto-assets is still uncertain, blockchain-based record-keeping, land registries, identity systems, e-governance and now trade documentation are becoming a reality in the near future. It has clear implications for anyone involved in accounting in the Bangladeshi market, as it is a dual reality. A vital part of the economy, remittances, are increasingly being remitted using instruments for blockchain: unofficial estimates indicate that several million people in Bangladesh have crypto wallets, mainly for the purpose of hedging against currency risk and to transmit remittance income more quickly and at lower transaction cost than conventional banking channels. However, the formal accounting and auditing practice must function in a regulatory context in which digital assets do not have a finalized tax treatment or a recognition rule. This results in the two-speed market that accounting firms and auditors are experiencing, with blockchain integration rapidly gaining momentum in sectors such as trade finance, banking infrastructure, and government systems, while the accounting standards for crypto-asset transactions specific to Bangladesh are still evolving and uncertain (Abdullah, 2025; Garanina et al., 2022). Businesses that invest in blockchain-literacy today, regardless of the lack of official local guidance, will be able to accelerate when stakeholders catch up to the market's movement.

5.6 Policy Recommendation

Based on the results of this international review and the upcoming context in Bangladesh, some policy suggestions were presented to bridge the conceptual gap between blockchain and its local accounting and financial reporting. First, regulators should continue the trend towards extending the momentum already gained in trade finance to accounting standards overall. Rather than a blanket policy, a phased approach for accounting and audit standards could allow institutions like ICAB and the National Board of Revenue to develop rules around what they see, rather than what they imagine to be the case. The Bangladesh Bank circular giving instructions to the electronic LC communication suggests doing so for blockchain does not require a complete legislative overhaul. Second, the current Bangladesh National Blockchain Policy lumped all

blockchain infrastructure and cryptocurrencies under the same risk category, which was a disincentive to developing accounting standards for genuine blockchain-based instruments like remittance services using stablecoins or trade documentation. The clarity that Chapter IV pointed out as a major adoption concern would be addressed by a clearer separation, which would continue to limit speculative crypto trading and establish a clear accounting and audit treatment for permissioned, government regulated blockchain use cases (Abdullah, 2025; Jayasuriya & Sims, 2023).Third, since remittances make up a significant portion of Bangladesh's GDP, and transfer costs are still significantly higher than global benchmarks, policymakers have an immediate incentive to test regulated, accounting-compliant settlement corridors for remittance activity, as other regional regulators are beginning to explore (as has been done in a 'sandbox'). Lastly, professional accounting organizations should emphasize blockchain and digital asset accounting knowledge in their continuing education, as the lack of local guidance for practitioners to learn from, as described in the international literature(Ariciu et al., 2026; Sultana et al., 2025) , only exacerbates the gap. If this capacity is developed now, in anticipation of the regulation, Bangladesh accountants and auditors would be better equipped to react quickly and competently in response to regulation, when it takes effect, rather than adopt it after the market has caught up.

5.7 Limitations of the Study

Like all systematic reviews, this review will have its limitations in scope of literature surveyed. The 20 studies included in the corpus were identified, screened, and eligible in accordance with the identification, screening, eligibility, and inclusion stages of the PRISMA process (Ahmed, 2025; Han et al., 2023), but still largely conceptual as the results of these studies are largely expected and not consistently observed (Bellucci et al., 2022; Thies et al., 2023). The review also uses secondary sources without empirical data, and the database used, i.e., Google Scholar, Scopus, ScienceDirect, Springer and Wiley was selected due to its coverage of peer-reviewed literature in accounting, finance and information systems, but may not have captured relevant grey literature or non-English literature that was excluded according to inclusion criteria (Han et al., 2023;

Sarwar et al., 2021). Further, market and policy discussion in the Bangladesh specific context (Sections 5.5 and 5.6) is based on sources from government and industry, not on the corpus itself, and is presented in the context of the review findings, not as a product of the systematic search.

5.8 Recommendations for Future Research

Based on the gaps identified in Chapter IV, there are several directions that can be used for further research. First, there is a need for additional empirical, field-based studies, real-world organizational pilots, industry and jurisdiction comparisons, and quantifiable measures of cost, error rates, audit time, and the quality of reporting (Almadadha, 2024; Thies et al., 2023). Second, research should directly tackle governance and standard-setting issues, such as which transactions should be on-chain, how the input of oracles will be governed, and how jurisdictions may adapt the treatment of blockchain-based records and triple-entry accounting(Dewayanto et al., 2025; Han et al., 2023) . Third, there is a need for more focus on the human aspect of the adoption: how accounting education and professional training should adapt to meet the identified skills deficits in the various reviews, and the role AIS literacy and automation capability have in adoption outcomes in developing country settings in particular(Ariciu et al., 2026; Olivia et al., 2025b; Sultana et al., 2025). Lastly, according to the results shown in Section 5.5, future research in this subject would be of immense value to conduct country-specific empirical studies on how accounting practice adapts in a regulatory environment, where blockchain infrastructure is promoted despite the restrictions in related digital assets, as this gap is likely to repeat in other developing economies where blockchain is supported under similar regulatory conditions.

5.8 Overview of the Study & Final Remarks

In the past, Accounting Information Systems (AIS) relied on centralized databases, periodic reconciliation, and audits conducted after the transactions are completed, resulting in significant audit costs and an open opportunity for fraud and information

asymmetry (Dewayanto et al., 2025; Han et al., 2023) . This study aimed to explore the impact of blockchain technology on the definition of AIS through Systematic Literature Review (SLR) based on the PRISMA framework. To address the four research questions, a total of 20 peer-reviewed studies were identified, screened, and analyzed from 2018 to 2025, which address its impact on AIS, the most prominent applications in accounting, its benefits to auditing and reporting, and challenges that remain to hinder its uptake (Ahmed, 2025; Nofel et al., 2024). The results of the following sections are presented across the four questions and placed within the theoretical frameworks that were introduced in Chapter I, alongside a description of what is yet to be done for blockchain's future to be a reality for AIS. The potential of blockchain in accounting and its impact on accounting systems has been widely discussed, as it offers a decentralized and trustworthy record-keeping solution that could significantly transform the future of both AIS and financial reporting(Al-Khoury et al., 2025; Liu et al., 2024). What's left is the gap between that promise and practice both at the global and national level, including in Bangladesh where blockchain use in trade finance and governmental infrastructures is lagging behind the accounting standards that are needed to support it.

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