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# The Potential of Blockchain to Increase the Effectiveness of Management Accounting: A Systematic Literature Review

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### Abstract

This comprehensive literature review examines how blockchain technology may enhance management accounting procedures. The investigation indicates that blockchain technology might change financial data administration and transmission, improving precision, effectiveness, and dependability. However, scalability, interoperability, and data protection must be addressed. The review also underlines the need for greater research to fully understand how blockchain technology affects management accounting in ever-changing organizational contexts. Empirical studies examine blockchain technology's actual applications, whereas conceptual studies examine theoretical frameworks and models. Integrating blockchain technology with Artificial intelligence (AI) and eXtensible Business Reporting Language (XBRL) enhances its use in accounting systems. The study shows that blockchain technology might alter management accounting operations, improving financial data quality and dependability for decision-making. Electronic procurement, when integrated with Enterprise Resource Planning (ERP) and Accounting Information Systems (AIS), can improve transparency, efficiency, and operational automation. This report suggests additional research, adoption strategies, training methodologies, data privacy concerns, and ongoing monitoring.



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## 1. Introduction

The domain of business and finance in recent times has witnessed significant changes due to rapid technological progress. Among these advancements, blockchain technology has emerged as a disruptive force with the potential to transform various sectors, including management accounting [1, 2]. Management accounting holds paramount importance as it fulfills a critical role in providing essential financial data that facilitates decision-making within diverse organizational contexts [3]. Proficiently applying management accounting concepts can enhance operational efficiency, strategic planning, and overall organizational performance [4].

The primary objective of this study is to explore the convergence of blockchain technology and management accounting, with a special emphasis on the potential enhancements that blockchain can offer to management accounting practices. By systematically examining scholarly literature, this investigation aims to provide a comprehensive summary of existing research and identify gaps in current knowledge while highlighting potential innovations in this dynamic field.

Historically, the field of management accounting has conventionally depended upon centralized systems for the purpose of collecting, processing and presenting financial data [5]. Nevertheless, academics and

practitioners have been compelled to investigate alternate techniques due to the constraints associated with these systems, including concerns over the veracity of data, security, and transparency. Blockchain technology, which was first established as the foundational framework for cryptocurrencies, has attracted significant interest because of its intrinsic features that effectively tackle these constraints [6–8]. The remarkable characteristics of blockchain technology, such as decentralization, immutability, cryptographic security, and transparency, have the capacity to fundamentally transform the management and sharing of financial information inside organizational contexts [9, 10].

The current body of research has extensively analyzed the larger implications of blockchain technology in many industries. However, there is a noticeable deficiency in the comprehensive investigation of its precise applications in the field of management accounting [11, 12]. The objective of this study is to address this knowledge gap by conducting an extensive literature review on the convergence of blockchain technology and management accounting. This study aims to explore how blockchain technology can enhance the accuracy, efficiency, and trustworthiness of management accounting operations by synthesizing existing research in the field.

This paper is structured to provide a coherent flow of ideas and insights. We commence with the "Introduction," which furnishes an overarching understanding of the research topic's significance and delineates our study's objectives. Subsequently, we engage in an expansive "Literature Review," which surveys existing research on blockchain technology's applications in management accounting, accentuating key findings, methodologies, and critical gaps. Section 3 discusses this study's systematic review technique. It describes the rigorous search method, inclusion and exclusion criteria, and data extraction procedure utilized to find relevant peer-reviewed publications, conference papers, and reports. This section emphasizes the need of a strong process for data dependability and validity.

Next, section 4 synthesizes the chosen papers and categorizes them by blockchain technology uses in management accounting. This section clarifies blockchain's varied management accounting uses and possible advantages by organizing the study findings topically. Section 5 analyses the consequences of the study findings, providing vital insights into the prospects and problems of incorporating blockchain technology into management accounting practices. It discusses the pros and cons, including transparency, efficiency,

scalability, and data privacy. This section attempts to balance blockchain's influence on management accounting.

Finally, section 6 concludes with the systematic literature review's main findings. It emphasizes this study's contributions to blockchain technology in management accounting and shows gaps and opportunities for additional investigation. This part also sheds light on future research in this dynamic topic. This paper outline will help readers grasp blockchain technology in management accounting study. This methodical methodology guarantees that the ideas offered are organized, well-supported, and lead to a greater understanding of blockchain's potential to revolutionize management accounting practices.

## 2. Literature Review

Blockchain technology may fundamentally disrupt processes and structures, making it a major driver of change in various industries. Blockchain technology may improve financial transparency, security, and efficiency, making it a promising use in management accounting [8, 13]. This literature study consolidates and analyzes current studies to fully examine how blockchain technology affects management accounting practices and strategies.

Blockchain's decentralized and irreversible properties might transform management accounting. This system optimizes transaction recording and verification, reducing errors and fraud [14]. The irreversible nature of blockchain data ensures a reliable audit trail, reducing the need for complex reconciliation procedures [15]. Blockchain technology has the potential to improve financial reporting, aligning with management accounting's core aims.

Management accounting uses blockchain technology for cost management and planning. Smart contracts are blockchain-based scripts that automate contract compliance and payment [16]. Automation can increase cost management by enabling real-time tracking and reducing administrative overheads [17]. Thus, management accountants may focus more on strategic analysis and decision-making than transactional tasks.

Although blockchain technology has many benefits, it also has drawbacks. Technology adoption depends on overcoming scalability and interoperability issues [18]. Blockchain technology requires companies to reassess their internal control systems and address data protection and legal compliance [19]. The above issues demonstrate the need to analyze technological,

organizational, and regulatory impacts before using blockchain technologies in management accounting.

Based on the explanation above, blockchain technology might change management accounting. The decentralization, immutability, and automation of blockchain technology match management accounting's accuracy, transparency, and efficiency goals. However, successful adoption requires overcoming technology challenges, organizational change, and legal compliance. Given blockchain technology's continual progress, additional research is needed to understand its long-term impact on management accounting in dynamic corporate environments.

### 3. Materials and Method

This research offers a comprehensive examination of how blockchain technology can enhance the efficiency of accounting management through its diverse range of applications. We followed the primary goals of systematic review as set out by PRISMA [20]. Our search timeline included the years 2018-2023. The review follows a rigorous methodology that ensures the inclusion of relevant studies and the minimization of bias. This section will discuss the methods used in the review, including the search strategy and selection criteria for studies, the data extraction and analysis process, the assessment of study quality and bias, and the limitations and sources of heterogeneity.

#### 3.1. Define the Research questions

A systematic review process is led by research questions that define the subject, object and scope of the research [21]. Accordingly, we identified the following research questions:

RQ1. What are the main applications of blockchain technology in management accounting, and how do these applications improve the accuracy, timeliness, and reliability of financial data for decision-making purposes?

Explores how blockchain technology is used in management accounting to improve financial data quality, timeliness, and reliability for decision-making. This paper analyses literature and case studies to show how blockchain's distributed and immutable ledger system streamlines accounting operations, reduces manual errors, and protects financial data. Understanding the potential benefits of blockchain in management accounting can help organizations improve their financial reporting and make educated decisions based on reliable and current data.

RQ2. How does blockchain facilitate real-time data sharing and collaboration among different departments

within an organization, and what impact does this have on the efficiency and effectiveness of management accounting processes?

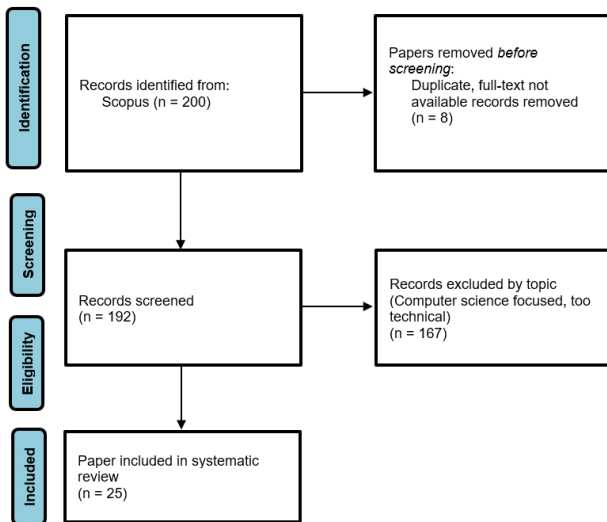
Addresses how blockchain technology enables real-time data sharing and cooperation across departments, with a focus on management accounting efficiency and effectiveness. Decentralized and immutable blockchain offers secure and transparent financial data sharing, facilitating departmental data flow. Blockchain reduces data discrepancies and delays in traditional accounting systems by offering a single source of truth that all authorized parties can view and update in real-time. Enhanced data accessibility and accuracy can speed up decision-making, improve financial reporting, and streamline budgeting and forecasting. The research will examine real-world case studies and best practices to show how organizations have used blockchain to optimize management accounting and make better data-driven managerial decisions.

#### 3.2. Search for the Literature

The search strategy and selection criteria for studies involved a comprehensive search, we selected Scopus as our primary source of information to assure both scientific robustness and inclusivity. The search terms used were "blockchain," "accounting," "distributed ledger," and "management accounting". In addition to the databases, the review included a search of gray literature, including conference proceedings. We extracted data from the database on August 15, 2023, and 200 documents were retrieved. Of them, 3 were duplicate items and 5 were not available in full-text, so the final number of retrieved documents was 192.

#### 3.3. Apply Exclusion and Inclusion Criteria

The inclusion criteria for studies were that they must be published in English and must discuss the effectiveness of blockchain technology in management accounting. The exclusion criteria are based on the following reasons: (1) articles without full availability, (2) articles not available in English, and (3) articles that focused on other topics or discussed blockchain from a technical, engineering, or computing science perspective. The data extraction and analysis process involved the use of a standardized data extraction form that included the following information: author(s), year of publication, study design, sample size, data collection and analysis. The data extraction and analysis process involved the use of a standardized data extraction form that included the following information: author(s), year of publication, study design, sample size, data collection and analysis.



**Figure 1.** Identification and inclusion process of the systematic review.

methods, and key findings. The review addressed potential limitations and sources of heterogeneity by providing a clear description of the inclusion and exclusion criteria for studies, as well as the search strategy and data extraction and analysis process. The review also acknowledged the potential limitations of the included studies, such as their sample size, the specific contexts in which they were conducted, and the potential biases of the authors.

### 3.4. PRISMA diagram

Figure 1 represents our steps using a PRISMA diagram [22], which we adjusted to enhance its fit for a qualitative systematic review. The PRISMA flow diagram depicts the flow of information through the different phases of a systematic review. It maps the number of records identified, included and excluded and the reasons for exclusions.

## 4. Results and Discussion

### 4.1. Initial Analysis

#### 4.1.1. Publication Year

Figure 2 shows the number of published papers from 2018 to 2023 revealing interesting trends in the field of management accounting. The utilization of blockchain technology within the realm of management accounting has garnered significant attention due to its potential to revolutionize various aspects of financial management. To comprehend this potential, it's crucial to examine the trend of published papers concerning blockchain's integration in management accounting practices from 2018 to 2023.

In the year 2018, there were three papers published on

the subject [23–25]. This initial engagement with the topic showcases a budding interest among researchers in exploring the marriage of blockchain and management accounting. The subsequent year, 2019, witnessed a notable increase to five published papers, signifying a growing inclination to delve deeper into the potential benefits and challenges associated with this integration.

The year 2020 maintained the momentum with another five papers, suggesting a sustained interest despite potential disruptions caused by global events. However, it was in 2021 that the most significant surge occurred, as the number of published papers doubled to eight. This surge could be attributed to various factors, such as increasing awareness of blockchain's capabilities, successful use cases emerging from the industry, and growing curiosity surrounding its application in management accounting. Despite this surge, 2022 saw an unexpected and considerable decline with only one paper published [26]. This abrupt drop raises questions about potential hindrances encountered by researchers and practitioners during that period. It could be speculated that external factors, funding fluctuations, or technical challenges might have contributed to this decline.

Fortunately, the trend rebounded in 2023, with three papers published. Although this number remains lower than the peak in 2021, the recovery could indicate renewed interest and efforts to overcome the challenges faced in the preceding year. This fluctuating pattern of published papers underscores the dynamic nature of both blockchain technology and management accounting. The fluctuation could be attributed to the evolving nature of the blockchain itself, as well as its integration challenges in the complex landscape of financial management systems. Researchers, practitioners, and stakeholders must interpret these trends thoughtfully, considering factors like technological advancements, regulatory developments, and the practical feasibility of implementing blockchain solutions.

The analysis of the trend in published papers from 2018 to 2023 elucidates the evolving landscape of blockchain's potential to enhance management accounting effectiveness. While the field experienced fluctuations, the overall trajectory indicates a persistent interest in exploring how blockchain can streamline financial processes, enhance transparency, and contribute to more efficient management accounting practices.

#### 4.1.2. Classification of the Relevant Papers

As seen in Figure 3, to clarify our classification process, empirical papers focus on observable or measurable

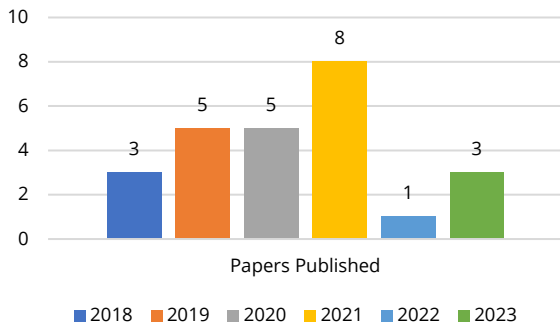


Figure 2. Publication year of the selected papers.

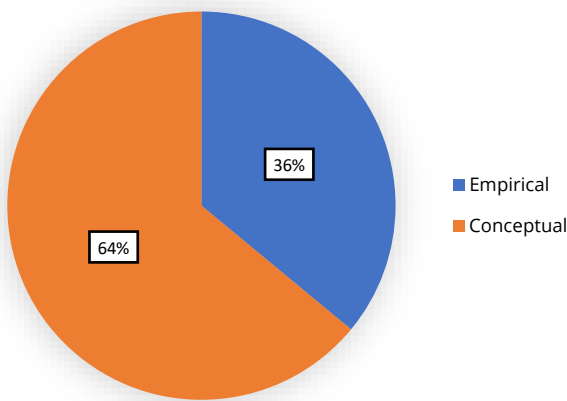


Figure 3. Conceptual vs. empirical studies.

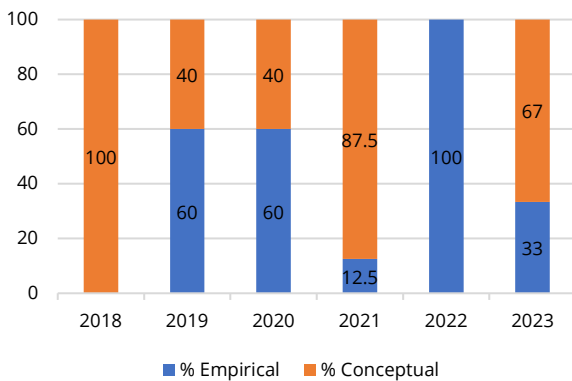


Figure 4. Conceptual vs. empirical studies over time.

blockchain activities and processes through a variety of qualitative and quantitative approaches. Conceptual papers discuss ideas, applications, theories, benefits and challenges of blockchain, but do not collect primary data or analyze secondary data [27]. In the pursuit of understanding the potential of blockchain to enhance the efficiency of management accounting, an analysis of the distribution of research papers across empirical and conceptual study types from a total of 25 papers provides insightful insights.

Figure 4 shows the ratio of conceptual vs. empirical papers over the period. Empirical studies, which involve

the collection and analysis of real-world data, constitute 36% of the research papers in this domain. This empirical approach reflects a commitment to uncovering practical evidence of blockchain's impact on management accounting processes. Researchers adopting this method contribute to bridging the gap between theoretical potential and tangible outcomes, offering valuable insights into the actual integration challenges, benefits, and limitations that organizations might encounter in adopting blockchain for management accounting. On the other hand, conceptual studies, accounting for 64% of the papers, signify a significant interest in theoretical exploration. These studies focus on discussing the conceptual frameworks, models, and theories that underpin the potential role of blockchain in management accounting.

These studies serve as guideposts for organizations seeking to harness blockchain's potential, offering a roadmap for the strategic adoption of this transformative technology in management accounting processes. They also lay the groundwork for future empirical research by outlining the areas that warrant closer investigation. As the field of management accounting continues to evolve in the context of technological advancements, this blend of empirical and conceptual research forms the cornerstone of an inclusive dialogue that not only explores the 'what' and 'how' of blockchain integration but also delves into the fundamental 'why,' fostering a holistic comprehension of the technology's potential in the realm of financial management.

#### 4.2. Discussion

4.2.1. RQ1: What are the main applications of blockchain technology in management accounting, and how do these applications improve the accuracy, timeliness, and reliability of financial data for decision-making purposes?

Twelve articles from 2018 to 2023 on the key uses of blockchain technology in management accounting and how they enhance financial data correctness, timeliness, and dependability for decision-making were determined through bibliometric analysis, literature reviews, and a number of other research. In response to these publications, blockchain technology might revolutionize management accounting. Blockchain's capacity to improve accuracy, deliver real-time updates, and boost financial information credibility allows for better-informed decision-making.

The study conducted by Grover et al. [23] aims to fill the existing vacuum in the literature by examining the potential benefits of blockchain technology for various stakeholders, including consumers (B2C), companies

(B2B), and governments (B2G). This is achieved through a comprehensive evaluation of relevant scholarly articles on blockchain. This article presents a comprehensive compilation of prospective uses of blockchain technology within the field of management accounting. The aforementioned elements encompass accounting systems that provide real-time, verifiable, and transparent information, optimization techniques for container load management in the context of international trade, as well as legal and procedural norms about customer identification and reporting obligations for questionable transactions.

Furthermore, the study proposes that the utilization of blockchain technology has the potential to facilitate the storage of records, hence enhancing data accessibility throughout the entirety of the organization. The report further emphasizes the potential of blockchain technology in enhancing the efficiency of supply chain operations, enabling the management, monitoring, and traceability of assets, and automating supply chain processes to enhance responsiveness and cost-effectiveness.

The applications of blockchain technology in management accounting can improve the accuracy, timeliness, and reliability of financial data for decision-making purposes in several ways. First, real-time, verifiable, and transparent accounting systems can give decision-makers accurate, up-to-date financial data. This can enhance financial predictions and projections and eliminate financial reporting mistakes. Second, container load optimization for international trade reduces shipping and logistics time and expense. This can enhance financial data timeliness by giving more accurate and up-to-date shipment and delivery information. Thirdly, legal and procedural criteria for understanding your customer and suspicious transaction reporting can reduce fraud and financial crime and increase financial data dependability. This can assist in ensuring accurate and dependable financial data for decision-making. The exploration of blockchain's potential within management accounting underscores its capacity to address existing challenges and revolutionize financial data management and decision-making practices in various domains.

The exploration of optimizing accounting systems into the integration of Artificial Intelligence (AI), Blockchain, and eXtensible Business Reporting Language (XBRL), seeks to uncover the potential for heightened efficiency and effectiveness within the accounting cycle [28, 29]. Blockchain technology offers the possibility of finally adopting the so-called triple entry bookkeeping conceived by Ijiri [30], as it provides a shared ledger in

which all the operations shared between two or more subjects must be recorded, as well as in their respective accounts also in a common ledger, the so-called shared ledger. This allows for the creation of a more secure and transparent accounting system that can help prevent errors, fraud, corrupt behavior, or abuse [31].

Additionally, the use of e-invoices can be recorded in the shared ledger with a single input made by the issuer and then consolidated into a block only if the receiver approves it. The application of blockchain technology enables the incorporation of a decentralized ledger, hence augmenting the security and transparency of the accounting system. Consequently, this function acts as a preventive measure against probable instances of errors, deception, or misuse. There exists the possibility for enhanced accuracy in the recording and reporting of financial data as a result of this. The use of electronic bills can be recorded in a shared ledger with a single input started by the issuer, which is then consolidated into a block only upon the receiver's consent. This can enhance the expeditiousness of the invoicing procedure, leading to the timely documentation and dissemination of financial information. The application of XBRL taxonomy finally enables the generation of standardized financial statements, hence boosting the reliability of financial information for decision-making purposes. The utilization of reliable financial information has the potential to boost decision-making processes.

The empirical investigation done by Al-Zaqeba et al. [26] aims to investigate the impact of management accounting and the characteristics of Blockchain technology on the operational effectiveness of supply chains within Jordanian Manufacturing Companies (JMC). Furthermore, the study adopted a descriptive technique, in which a survey was applied to collect data. The survey had a sample size of 258 individuals, drawn from the JMC community. Taking advantage of blockchain technology in the accounting domain encompasses a multitude of applications, namely pertaining to the secure, dependable, and transparent processing and transmission of financial data. Additionally, the exchange of data among stakeholders has the potential to establish a transparent and efficient supply chain. Furthermore, it has been argued that the incorporation of blockchain technology into the field of management accounting has the potential to yield cost reductions over an extended period of time. This is primarily attributed to its ability to mitigate human mistakes, prevent manipulation and fraud, and ensure the instant control and enhanced integrity of information.

The studies reviewed collectively demonstrate that blockchain technology has the transformative potential

to reshape the landscape of management accounting. The research findings underscore the capacity of blockchain to revolutionize traditional practices by offering real-time, verifiable, and transparent accounting systems. These systems enable decision-makers to access accurate and up-to-date financial information, resulting in improved financial predictions, more reliable projections, and a reduction in financial reporting errors. Moreover, the incorporation of blockchain technology into areas such as container load optimization for international trade and adherence to legal and procedural norms further emphasizes the potential to enhance financial data timeliness and dependability. By ensuring transparency, security, and traceability, blockchain contributes to the prevention of fraud and financial crime, ultimately bolstering the reliability of financial data.

Additionally, the integration of AI, Blockchain, and XBRL, as discussed in Faccia, Al Naqbi, and Lootah's study, offers a promising avenue for enhancing the efficiency and effectiveness of accounting systems. The shared ledger provided by blockchain technology holds the potential to create more secure and transparent accounting processes, reducing errors, fraud, and abuse. The potential benefits of streamlined electronic invoicing and standardized financial statements further solidify the role of blockchain in improving financial data accuracy and dependability.

The empirical investigation conducted by Al-Zaqeba et al. [26] reinforces the findings of the systematic review, highlighting the practical applications of blockchain technology in improving supply chain operations within Jordanian Manufacturing Companies. This collective body of research unequivocally illustrates the transformative potential of blockchain technology in management accounting, affirming its capacity to provide accurate, timely, and reliable financial data for informed decision-making. As organizations continue to adopt and integrate blockchain technology into their financial processes, these advancements have the potential to revolutionize traditional management accounting practices and significantly elevate the quality of financial data used for strategic planning and decision-making. To provide a comprehensive overview of the selected studies and their respective impact, we present Table 1. The table displays relevant information such as the total citation count and CPY for each study. It serves as a valuable reference for understanding the influence and significance of the research conducted in this field.

*4.2.2. RQ2: How does blockchain facilitate real-time data sharing and collaboration among different departments within an organization, and what impact does this have on*

*the efficiency and effectiveness of management accounting processes?*

In the current context of organizational management, the incorporation of blockchain technology has emerged as a potent catalyst, facilitating the smooth exchange of real-time data and fostering collaborative efforts across many departments. The objective of this study is to examine the complex mechanisms through which blockchain technology enables interdepartmental collaboration and to investigate the resulting effects on the efficiency and effectiveness of management accounting operations.

A study by Jangir et al. [32] presents a comprehensive framework for managing the supply chain in the pharmaceutical industry. This framework utilizes blockchain technology and smart contracts to enhance efficiency and transparency in the supply chain processes. The framework seeks to tackle several challenges, including but not limited to, insufficient openness, inadequate user privacy, untimely updates upon request, ineffective information tracing, subpar quality control, repudiation of deals, and fostering trust among users. Blockchain provides a decentralized and dispersed peer-to-peer network for real-time data exchange and cooperation among departments. This network exchanges transaction records without middlemen, assuring data openness and immutability.

A blockchain network participant signs and broadcasts a transaction using their private key. All network peer nodes receive and validate these transactions, producing a block by solving a math puzzle. After adding the block to the chain, it's virtually hard to change and protect shared data. Blockchain allows automatic and traceable department collaboration by using smart contracts, which digitally validate transactions. These smart contracts can monitor quality and quantity across the supply chain, assuring data correctness and dependability. Blockchain stores all financial transactions and supplies data transparently and immutably. This information is accessed by network participants for product analysis and real-time tracking. Since blockchain stores data in a distributed ledger without third parties, it eliminates a single point of failure.

Blockchain technology has a significant impact on management accounting processes by enabling real-time data sharing and collaboration among departments, improving the accuracy and reliability of financial data, streamlining auditing processes through transparent and tamper-proof transaction records, and enhancing cost management and control by providing real-time visibility into supply chain processes and transactions. This technology reduces manual efforts, minimizes errors and

**Table 1.** Blockchain applications for financial data accuracy and timeliness in management accounting.

Author	Title	Year	Cited by	Cite per Year	Research Findings
Yu, Lin, & Tang	Blockchain: The Introduction and Its Application in Financial Accounting	2018	62	12.40	Blockchain technology might increase market trust, external reporting, and investor information asymmetry.
Prybila, Schulte, Hochreiner, & Weber	Runtime verification for business processes utilizing the Bitcoin blockchain	2020	62	20.67	Runtime verification of business processes using the Bitcoin blockchain allows smooth execution monitoring and verification while maintaining anonymity and independence.
Tiron-Tudor, Deliu, Farcane, & Dontu	Managing change with and through blockchain in accountancy organizations: a systematic literature review	2021	26	13.00	The assessment found that BT implementation required new methods. All accounting and auditing firms must promote blockchain's benefits from individual behavior to organizational structure.
Stafford & Treiblmaier	Characteristics of a Blockchain Ecosystem for Secure and Sharable Electronic Medical Records	2020	40	14.33	Blockchain technology can govern, authenticate, and authorize sensitive health data while recording data changes immutably.

fraud, and facilitates better decision-making for optimizing costs. A study by Coita et al. [33] delves into a comprehensive examination of the potential impacts of blockchain technology, focusing on its transformative implications for both human resources and marketing domains. The authors engage in a comprehensive analysis of the potential impact of blockchain technology on organizational structures, identity management, operational efficiency, and staff incentivization. Blockchain's decentralized and transparent data storage and access allow departments to collaborate and share data in real-time. Blockchain allows various departments to safely communicate and update data in real-time without middlemen or central authority. Each department may have its own blockchain, guaranteeing that everyone has the same truth. Smart contracts, blockchain-based agreements that automate and enforce corporate regulations, enable seamless cooperation and reduce manual involvement. Blockchain's decentralization and transparency boost department trust and accountability, improving collaboration.

A research paper published by Faccia & Petratos [34] conducted an in-depth investigation of the synergies provided by the integration of blockchain technology with enterprise resource planning (ERP) systems and accounting information systems (AIS), specifically in the field of electronic procurement. Blockchain technology allows several departments to share and collaborate on data in real-time. A decentralized and unalterable ledger lets people freely access and edit information. This

eliminates middlemen and allows peer-to-peer connectivity.

Blockchain technology uses a standard protocol to ensure consistency across nodes' distributed copies of the ledger, enabling rapid updates and data harmonization across organizational units. Blockchain technology's smart contract features automate corporate operations and execute specified actions based on predetermined parameters. Intelligent contracts can automatically start activities or make modifications depending on events or inputs, making departmental interaction easier. Since all transactions and alterations are recorded on the blockchain and validated by all participants, blockchain technology may improve data sharing and collaboration transparency, efficiency, and confidence. This method increases accountability and reduces data tampering and fraud.

Blockchain technology integrated with ERP and AIS systems can improve management accounting efficiency and effectiveness. First, blockchain allows departments to share and collaborate on data in real-time. This speeds up and improves data transmission, minimizing human data entry and reconciliation. Management accountants may access current financial and operational data to make better decisions and give timely insights for strategic planning and performance management. Second, blockchain makes financial transactions and procedures more transparent. Blockchain's decentralization and immutability record all transactions. This reduces financial data fraud and mistakes by improving dependability and integrity. Management

**Table 2.** Impact of blockchain on real-time data sharing and management accounting efficiency.

Author	Title	Year	Cited by	Cite per Year	Research Findings
Gupta, R., Shukla, V. K., Rao, S. S., Anwar, S., Sharma, P., & Bathla, R.	Enhancing Privacy through "Smart Contract" using Blockchain-based Dynamic Access Control	2020	22	7.33	Privacy of smart contracts can help reduce corporate fraud, enhance internal audit control, and enable cryptocurrency transactions with less reliance on paper money, ensuring digital traces of transactions.
Kshetri	Blockchain and sustainable supply chain management in developing countries	2021	81	40.50	Blockchain can help address the challenge of limited infrastructure in developing countries by providing a system that can be deployed even in places with limited infrastructure support.
Abad-Segura, Infante-Moro, González-Zamar, & López-Meneses	Blockchain technology for secure accounting management: Research trends analysis	2021	25	12.50	This area of study has been derived from seven primary areas of research identified as "Blockchain," "Network security," "Information management," "Digital storage," "Edge Computing," "Commerce," and "Internet of Things."
Dai & Vasarhelyi	Management accounting 4.0: The future of management accounting	2023	0	0.00	Outline a comprehensive roadmap for transitioning to a new paradigm, taking into consideration various aspects such as vision, strategic approach, needs, and priority areas.

accountants can trust financial data more, improving decision-making and reporting.

Blockchain's smart contracts simplify corporate operations and remove intermediaries. This simplifies planning, cost allocation, and financial analysis in management accounting. Smart contracts reduce manual involvement and improve process efficiency by automatically executing predetermined actions depending on conditions. Blockchain integration with ERP and AIS systems in management accounting can boost productivity through real-time data exchange, transparency, and automation. This lets management accountants focus on value-added tasks and strategic analysis, improving decision-making and performance management.

This synthesis shows that blockchain technology has transformed management accounting, notably in enabling real-time data exchange and cooperation across departments. Studies by Jangir et al., Coita et al., and Faccia & Petratos [32–34] show that blockchain may transform traditional processes and improve efficiency and effectiveness. Blockchain's decentralized and transparent design allows departments to interact and share data securely and efficiently in real-time. Smart contracts automate procedures based on established parameters, streamlining interactions. This lowers manual labor and assures data interchange correctness and dependability. Blockchain's unalterable ledger

maintains data integrity and stakeholder confidence, increasing responsibility.

The research regularly shows how blockchain technology improves management accounting by providing real-time financial data, transaction transparency, and automation. Effective resource allocation, cost management, and decision-making result from these advances. As organizations adopt and adapt blockchain technology, departmental collaboration and data-driven decision-making in management accounting can improve, boosting organizational performance. We provide Table 2 to give a thorough summary of the chosen research and their relative impacts. The table shows pertinent data for each study, including the total number of citations and the CPY. It is a useful resource for comprehending the relevance and effect of the research done in this area.

#### 4. Conclusions, Implications and Limitations

This systematic literature review has comprehensively explored the uses and effects of blockchain technology within the field of management accounting. The amalgamation of several research investigations has conclusively shown that blockchain technology has the capacity to bring about significant changes in conventional processes and improve the precision, promptness, and dependability of financial data for the purpose of making well-informed decisions. The examples under examination collectively highlight the potential of technology to improve transparency, remove

middlemen, and provide safe, real-time data exchange and collaboration procedures across various departments inside organizations.

The thorough examination of the chosen papers in this study has shed light on the various ways in which blockchain technology might enhance management accounting operations. The technological capabilities of providing instantaneous access to financial information, ensuring the precision of data, optimizing auditing procedures, and automating tasks through intelligent contracts represent a significant divergence from traditional approaches. Moreover, the incorporation of blockchain technology with other emerging technologies, such as AI and XBRL, holds the promise of enhancing favorable outcomes, resulting in improved efficiency and effectiveness in accounting procedures.

Based on the insights garnered from the systematic literature review, several recommendations emerge for both researchers and practitioners in the field of management accounting:

1. Further Research: Researchers should examine the nuances of blockchain technology in management accounting, including industrial uses, regulatory ramifications, and implementation issues.
2. Adoption Strategies: Organizations in the accounting domain should consider adopting blockchain technology strategically, focusing on aligning its implementation with specific business goals and operational needs. Pilot projects and gradual integration can help ensure a smooth transition.
3. Training and Skill Development: Accounting professionals need training and skill development programs as blockchain use increases. Organizations should spend in training their staff to use blockchain efficiently.
4. Integration: Careful preparation is needed to integrate blockchain technology with current ERP and AIS systems. Companies should consider how to integrate blockchain effortlessly while improving technology stack compatibility.
5. Data Privacy and Security: Blockchain's decentralized, tamper-proof design improves data security, but sensitive information must still be protected. Data privacy methods must be robust to comply with legislation.
6. Collaborate: Foster collaboration among academics, industry, and technology development to foster idea sharing and insights. This partnership can help create industry-specific solutions.
7. Continuous Monitoring and Evaluation: Organizations using blockchain technology should build procedures for reviewing its influence on management

accounting operations. Regular assessments will help identify improvement areas and change strategy.

Finally, the research shows that blockchain technology is changing management accounting. Its ability to provide real-time data exchange, openness, and process simplification is a major achievement. As this technology evolves, its adoption and integration might alter how businesses store, distribute, and use financial data.

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