

Digital Supply Chain Transformation: Implementing Management Accounting and Blockchain to Address Efficiency Challenges

**Aini Indrijawati¹, Mediaty Mediaty², Elsa Dian Febriyanti³,
Nathania Pratiwi^{4*}, Siti Nurul Hedyati⁵**

¹⁻⁵Master of Accounting, Faculty of Economics and Business, Universitas Hasanuddin, Indonesia
Email: ¹⁾ ainindri@fe.unhas.ac.id, ²⁾ mediaty@unhas.ac.id, ³⁾ elsadianfeb@gmail.com,
⁴⁾ nathaniaprtw@gmail.com, ⁵⁾ nurulhedyati@gmail.com

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Abstract

This research is motivated by the absence of an integrated understanding regarding the role of management accounting and blockchain technology in improving supply chain efficiency, as most previous research still examines these two aspects separately. Therefore, this research aims to analyze how the implementation of management accounting and blockchain technology can jointly improve supply chain efficiency. The method used is a Systematic Literature Review (SLR) of 15 reputable scientific articles published within the period 2014–2024 and selected based on specific inclusion and exclusion criteria. The analysis results show that management accounting plays an important role in improving supply chain efficiency through the implementation of activity-based costing, performance measurement systems, and budgeting that can enhance cost transparency, resource control, and decision-making quality. Meanwhile, blockchain technology contributes through enhanced real-time data transparency, end-to-end traceability, implementation of smart contracts, and data recording that cannot be manipulated, thereby reducing the risk of fraud, information asymmetry, and transaction costs. The integration between management accounting and blockchain is proven to strengthen cost accuracy, accelerate transaction processes, and support sustainable supply chain practices. This research concludes that the synergy of management accounting and blockchain technology constitutes an effective strategic framework for creating a more efficient, transparent, and resilient supply chain in the digital era.

Keywords: Blockchain, Digital Transformation, Management Accounting, Supply Chain.

1. Introduction

In the era of globalization and increasingly intense competition, digital transformation has become an urgent need in various sectors, including Supply Chain management. Digital transformation refers to the utilization of digital technology to strengthen organizational capabilities through comprehensive implementation and optimization in order to manage risks and respond to uncertainty effectively. In this context, companies no longer compete only at the individual company level, but increasingly at the Supply Chain level, where efficiency, responsiveness, and resilience become determinants of competitive advantage (Miranti & Santosa, 2024). Therefore, Supply Chain digitalization is viewed as a strategic approach to improve operational performance while mitigating disruptions.

Previous research shows that the adoption of digital technology enables organizations to shift from traditional operational models toward more efficient and sustainable digital-based systems. Digital transformation supports the creation of new business processes, enhances response capabilities to dynamic customer demand, and strengthens productivity,



transparency, and flexibility in the Supply Chain (Oubrahim et al., 2023). Furthermore, new technologies such as artificial intelligence are proven capable of strengthening ethical and sustainable managerial decision-making, thus affirming the importance of technology integration in modern Supply Chain management (Insirat et al., 2025). However, most existing literature still tends to examine digital technology separately, without adequately discussing how managerial systems support and operationalize such technology in the decision-making process.

Supply Chain management itself involves complex coordination of material, information, and financial flows from suppliers to end consumers. In practice, Supply Chains still face various ongoing challenges, such as delivery delays, limited data visibility, product counterfeiting, and difficulties in traceability (Asrul et al., 2025). These problems demonstrate that technology adoption alone is insufficient if not accompanied by effective managerial mechanisms to translate data into actionable information. In this regard, management accounting plays an important role by providing relevant, timely, and structured information to support planning, cost control, and performance evaluation across all Supply Chain activities. Previous research shows that management accounting can enhance transparency and support strategic decision-making, thereby impacting the improvement of Supply Chain responsiveness and efficiency (Petera and Šoljaková., 2020; Almatarneh et al., 2022).

Concurrently, blockchain technology emerges as a powerful digital solution to address transparency, trust, and traceability issues in the Supply Chain. As a decentralized and immutable recording system based on distributed ledger technology, blockchain enables secure and transparent data exchange among various stakeholders, thereby reducing information asymmetry and data manipulation risks (F. Tian, 2017). Various empirical examples in agricultural and food Supply Chains show that blockchain can improve documentation efficiency and product traceability, thus enabling stakeholders and consumers to access reliable information in real time (Kamilaris et al., 2019). Nevertheless, studies on blockchain in Supply Chains are still dominated by discussions of technical capabilities and operational benefits, while the integration of information generated by blockchain into managerial accounting systems to support decision-making and performance management has not received much attention.

Although literature on digital transformation and new technologies in the fields of accounting and Supply Chain is rapidly developing, existing studies remain fragmented and not comprehensively integrated. Previous research extensively discusses digital transformation in accounting systems, sustainability reporting, and managerial accounting practices by emphasizing the role of automation, artificial intelligence, and blockchain in improving data quality, transparency, and information disclosure, as well as accounting efficiency and governance (Brar, 2025; Elnakeeb, 2025; Esther & Domingo, 2024; Perdana, 2024). On the other hand, blockchain implementation in Supply Chains is more often examined from technical and operational perspectives, with a focus on traceability, transparency, and sustainability (Bager, 2022; Hong, 2024; Tian, 2024). However, the linkage between management accounting systems and the utilization of blockchain-based Supply Chain data is still rarely explored in depth. Although several studies have acknowledged the role of management accounting systems in supporting organizational performance (Brar, 2025; Kinana, 2025; Nengrum, 2025; Nguyen, 2025), empirical and conceptual understanding of how management accounting strategically utilizes blockchain information to improve operational efficiency and managerial control throughout end-to-end Supply Chain activities remains limited. This condition indicates a significant research gap in explaining

how digital transparency generated by blockchain can be translated into valuable managerial information to improve Supply Chain efficiency and performance.

Based on the above description, a clear research gap can be identified. Although previous research has extensively discussed digital transformation, management accounting, and blockchain technology separately, empirical and conceptual understanding regarding the integrative role of management accounting and blockchain in improving Supply Chain efficiency remains limited. Specifically, how management accounting functions as a strategic interface that utilizes blockchain-based data to improve efficiency, transparency, and control in the Supply Chain has not been explored in depth. Therefore, this research aims to fill this gap by examining how the integration of management accounting practices and blockchain technology can contribute to addressing Supply Chain efficiency challenges, as well as providing theoretical contributions and practical implications for organizations facing the acceleration of digital transformation.

2. Literature Review

2.1. Supply Chain

A Supply Chain is a strategic approach that integrates various elements, such as suppliers, manufacturers, and distributors, with the aim of optimising efficiency and competitiveness. It involves the planning, execution, and control of the flow of materials and information to meet consumer needs while minimising costs. In the era of globalisation, Supply Chains face challenges such as the complexity of logistics operations, lack of transparency that can lead to fraud, and issues with technology integration. Nevertheless, technologies such as Blockchain, IoT, AI, and predictive analytics enable greater transparency, risk management, and responsiveness within the Supply Chain. Supply Chain digitalisation represents the evolution from conventional systems to technology-based platforms, aiming to enhance corporate competitiveness through improved information efficiency, reduced lead times, and lower transaction costs (Allimmah et al., 2025). The implementation of Supply Chains seeks to allow companies to compete fairly, increase profitability, enhance employee welfare and loyalty, and facilitate consumers in verifying product authenticity (Calment et al., 2024).

2.2. Management Accounting

Management accounting is an accounting system specifically designed to meet managerial information needs in decision-making, planning, and operational control within a company. Unlike financial accounting, which focuses on preparing reports for external parties, management accounting is oriented towards internal information relevant to management. This information includes both financial and non-financial data that assist managers in formulating strategies and managing resources efficiently. Effective cost control through management accounting can enhance operational efficiency and reduce resource wastage, thereby supporting business sustainability.

Management accounting plays a crucial role in optimising the efficiency and effectiveness of company operations, particularly within the context of complex Supply Chains. By applying appropriate techniques, companies are not only able to identify and control costs arising throughout the Supply Chain but also proactively eliminate non-value-adding activities, resulting in leaner, more efficient, and market-responsive business processes (Taschner & Charifzadeh, 2020). Findings by Indrijawati et al. (2025) confirm that the implementation of continuous improvement principles in the private sector is a key factor

in enhancing Supply Chain efficiency and management accounting effectiveness. This perspective reinforces the role of management accounting as a strategic information system for reducing waste and increasing corporate competitiveness.

2.3. Blockchain

Blockchain technology is a decentralised and immutable ledger system. Initially developed as the backbone of cryptocurrencies, blockchain offers a unique approach to data management and verification. By providing transparent and tamper-proof transaction records, blockchain technology can address several critical issues in Supply Chain management (Wahyuni, 2024).

Blockchain, particularly Distributed Ledger Technology (DLT), is regarded as an effective solution for building trust due to its ability to provide complete data transparency. As a peer-to-peer decentralised platform that utilises cryptography, blockchain enhances trust among parties. Its use reduces the uncertainties commonly encountered in collecting independent databases within conventional Supply Chain systems and prevents the deletion or alteration of data without leaving a trace. This decentralised structure positions data transparency as a core feature.

Nevertheless, privacy remains a key concern when sensitive data from Supply Chain stakeholders need to be protected. Therefore, blockchain serves as a practical tool to address trust issues and facilitate collaboration within the Supply Chain, as evidenced by various proofs of concept and pilot projects designed to enhance traceability and transparency (Apriani et al., 2023).

3. Methods

This study adopts a Systematic Literature Review (SLR) approach to analyse the application of management accounting and blockchain in addressing efficiency challenges within the Supply Chain. The choice of the Systematic Literature Review (SLR) method is based on its structured and systematic characteristics, which allow for more efficient and accurate data collection. SLR is a transparent method used to identify, evaluate, and analyse literature relevant to a specific research question, aiming to provide a comprehensive synthesis of previous research findings and to identify areas requiring further investigation (Massaro et al., 2016).

Figure 1 illustrates the stages of the literature selection process conducted in this study based on the Systematic Literature Review (SLR) approach. The process includes identification, screening, and inclusion stages, aimed at obtaining the most relevant articles on the topic of applying management accounting and blockchain to enhance Supply Chain efficiency.

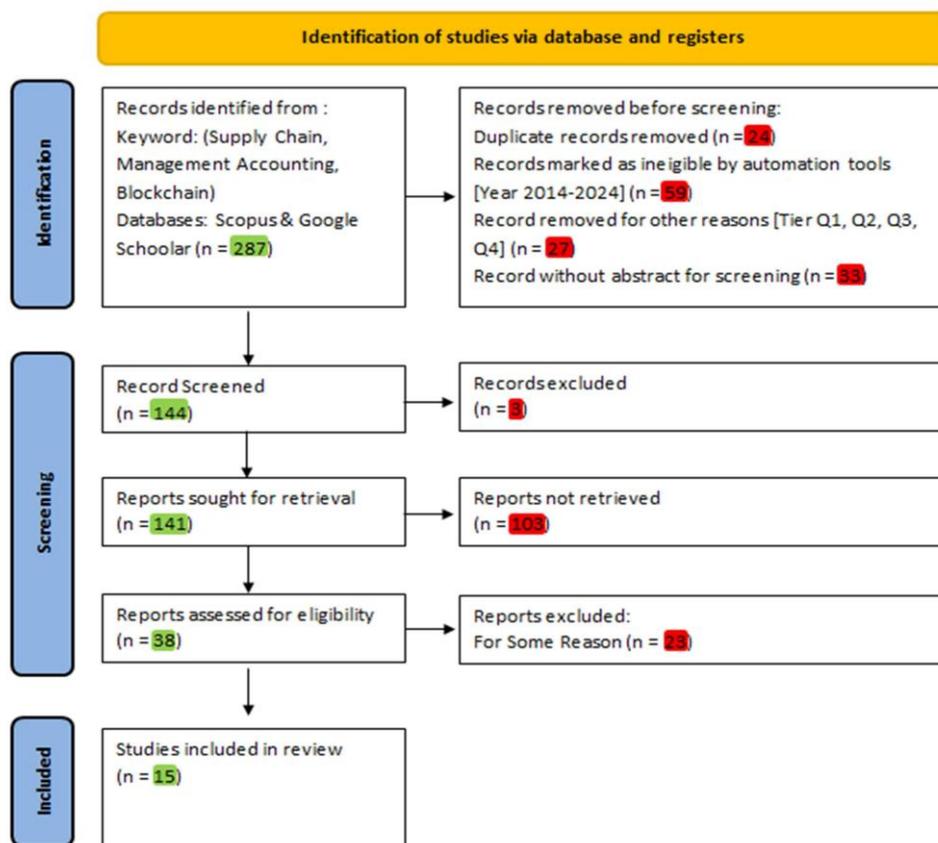


Figure 1. Flow of literature identification and selection using the SLR approach

The study began by identifying relevant literature through systematic searches on platforms such as ResearchGate, OpenKnowledge, and the Publish or Perish application. The search process employed keywords such as "Supply Chain," "Management Accounting," and "Blockchain." Inclusion and exclusion criteria were then established to determine which articles would be reviewed. Articles meeting the inclusion criteria—specifically those discussing the application of management accounting and blockchain in addressing efficiency challenges within the Supply Chain and published within the last ten years—were considered. Conversely, articles that were irrelevant, published more than ten years ago, or lacked a clear empirical basis were excluded. Selection was conducted based on titles, abstracts, and keywords before a full review of the articles to assess their relevance. The collected data were subsequently analysed thematically to explore how the application of management accounting and blockchain can address efficiency challenges in the Supply Chain.

To ensure the validity and reliability of research findings, this study also applies a quality appraisal stage to articles that have passed the selection stage. Quality assessment is conducted by referring to the Systematic Literature Review guidelines proposed by Massaro et al. (2016), considering several main criteria, namely: clarity of research objectives, appropriateness and rigor of the methodology used, relevance of the research to the topic of Supply Chain efficiency, transparency of the data analysis process, and consistency between research results and conclusions. Each article is evaluated to identify potential methodological bias and its level of contribution to the research objectives. Articles that do not meet minimum quality standards or have a high risk of bias are not included in the thematic analysis stage. This quality appraisal stage aims to minimize subjectivity, enhance the credibility of literature synthesis, and ensure that research conclusions are based on strong and accountable scientific evidence.

4. Results and Discussion

4.1. Research Results

Table 1 presents the synthesis results from the Systematic Literature Review (SLR) focusing on the implementation of management accounting, blockchain, and the integration of both in addressing Supply Chain efficiency challenges.

Table 1. Research Synthesis Results on the Implementation of Management Accounting and Blockchain in Addressing Supply Chain Efficiency Challenges

No	Author (Year)	Main Findings	Contribution to Supply Chain Efficiency
1	Dobroszek et al. (2020)	Management accounting integrates financial and non-financial data for performance monitoring and decision-making	Improves performance visibility, decision speed, and operational efficiency
2	Talumewo et al. (2014)	SC cost and performance analysis through data triangulation improves raw material availability	Inventory optimization, resource allocation, and SC partner collaboration
3	Wang et al. (2019)	Comprehensive cost accounting internalizes external environmental costs	Cost efficiency and support for sustainable energy transition
4	Burritt & Schaltegger (2014)	SC accounting needs to incorporate economic, social, and environmental aspects	Improved coordination and long-term value-based decision-making
5	Manambing et al. (2014)	Accounting-based supplier selection strategy and logistics planning	Logistics cost reduction and service speed improvement
6	Fu & Zhu (2019)	Blockchain authentication system improves data reliability	Information risk reduction and trust enhancement among parties
7	Ivanov et al. (2018)	Blockchain improves transparency, automation, and real-time tracking	Time efficiency, cost, and risk control
8	Schilling & Seuring (2024)	Blockchain improves transparency, traceability, and automation	Operational efficiency and sustainability compliance
9	Tiwari et al. (2023)	Smart contracts automate processes and improve data security	Administrative cost reduction and transaction acceleration
10	Kshetri (2021)	Blockchain reduces the role of intermediaries and increases trust	Transaction cost efficiency and competitiveness improvement
11	Saberi et al. (2019)	Blockchain supports sustainability that impacts efficiency	Process efficiency and stakeholder trust improvement
12	Garay-Rondero et al. (2020)	Integration improves data quality and data-driven decisions	Cost reduction and decision accuracy improvement
13	Del Giudice et al. (2021)	MA measures circular performance, blockchain ensures traceability	Cost efficiency, waste reduction, and SC visibility
14	Al-Zaqeba et al. (2022)	Blockchain improves transparency, MA supports cost control	Operational efficiency and competitiveness improvement
15	Jangir et al. (2019)	Blockchain improves monitoring, data accuracy, and transparency	Inventory control efficiency and risk reduction

Based on Table 1, the SLR results show that Supply Chain efficiency is achieved through the complementary roles between management accounting and blockchain. Management accounting functions as an analytical mechanism that processes data into managerial information for cost control, performance evaluation, and resource allocation, while blockchain acts as an enabling technology that provides transparent, real-time, and traceable data. The consistent pattern of findings shows that the integration of these two approaches improves cost and performance visibility, reduces information asymmetry, strengthens coordination among Supply Chain actors, and reduces transaction and operational costs. Thus, the main contribution of this research lies in the affirmation that management accounting is a strategic link that transforms digital transparency generated by blockchain into measurable, sustainable, and strategically valuable Supply Chain efficiency for companies.

4.2. Discussion

4.2.1. Implementation of Management Accounting in Addressing Efficiency Challenges in the Supply Chain

The effective implementation of management accounting is crucial for addressing Supply Chain efficiency challenges. Dobroszek et al. (2020) suggest that management accounting can provide the necessary support for logistics companies to continuously monitor their performance and assess whether it aligns with established objectives. By utilising management accounting systems, companies can integrate financial and non-financial data, enabling faster and better decision-making in facing challenges in dynamic markets, particularly those related to the Supply Chain. Furthermore, management accounting focused on logistics and Supply Chain must meet specific information needs. In this context, it is essential for companies to adopt sustainable, flexible, and transparent approaches. This facilitates better management of logistics systems and ensures that all processes within the Supply Chain operate efficiently and effectively. By applying the appropriate management accounting tools and methods, companies can enhance both operational and strategic performance, providing relevant and integrated information that can positively impact financial performance and corporate value.

Talumewo et al. (2014) highlight that management accounting implementation is critical for improving Supply Chain efficiency in the food and beverage sector, as evidenced in the KFC Multimart Ranotana case study. Management accounting provides deep insights into Supply Chain costs and performance, ensuring timely availability of raw materials. Collecting and analysing qualitative data through triangulation methods is essential to identify factors influencing Supply Chain efficiency, such as facilities, inventory, transportation, and information. This analytical approach enhances decision-making in Supply Chain systems, including resource allocation and inventory management, while ensuring raw material quality standards are met to maintain customer satisfaction. Additionally, management accounting promotes collaboration among Supply Chain partners by providing transparent financial data and fostering trust and improved communication.

Wang et al. (2019) emphasise that implementing management accounting in the context of Supply Chain efficiency is particularly important in the power generation industry using biomass and coal, especially in China. To internalise the externalities of power generation, a comprehensive cost accounting mechanism is required. By combining direct and external costs, management accounting can provide a clearer picture of the true cost of energy production. This is particularly important for renewable energy technologies, which are often considered less economically competitive than fossil fuels, largely due to overlooked external costs. Overall, effective management accounting implementation can help improve Supply

Chain efficiency in the energy industry by providing more accurate information on costs and environmental impacts, thereby supporting the transition to cleaner and more sustainable energy sources.

Burritt and Schaltegger (2014) emphasise the role of management accounting in integrating the information necessary for better decision-making. In the Supply Chain context, accounting should not only focus on economic aspects but also consider social and environmental dimensions. This demonstrates a tendency in sustainable Supply Chain research to simplify complex issues into smaller parts, which can limit their impact on decision-makers. In certain industries, such as fashion or sports apparel, the intangible value of a brand can surpass the value of the material product itself. This indicates that management accounting must account for broader values in production and Supply Chain processes, including how brands influence consumer perception, which in turn affects economic performance. Importantly, Supply Chain accounting should consider information from all involved entities, including suppliers, manufacturers, and customers. Thus, management accounting functions not only as a tool for recording and reporting but also as a means to enhance collaboration and communication among all parties within the Supply Chain.

Research by Manaming et al. (2014) shows that the implementation of management accounting to address Supply Chain efficiency issues at PT. Sinar Galesong Pratama involved several key strategies. These included supplier selection through collaboration with PT. Suzuki Indomobil Sales based on product quality standards, competitive pricing, trust, and efficiency in terms of time, location, and cost. Additionally, effective logistics planning aligned with PT. Suzuki Indomobil Sales benchmarks was adopted, along with supply distribution through partnerships for genuine Suzuki spare parts sales to integrate the Supply Chain with the sales process. Furthermore, management considered building a new factory in the Sulawesi region to accelerate service and reduce logistics costs, ultimately improving overall Supply Chain efficiency.

4.2.2. Implementation of Blockchain in Addressing Efficiency Challenges in the Supply Chain

The implementation of blockchain technology in Supply Chain management offers significant solutions to efficiency challenges faced by large companies. Blockchain serves as a distributed data storage technology that can address issues of incomplete and asymmetric information commonly encountered in Supply Chain operations. By using blockchain, companies can reduce the risk of fraud caused by information mismatches among different parties, thereby improving the accuracy of information for decision-making. However, a primary challenge in implementing blockchain lies in efficiently accessing and storing data. While blockchain stores all business information, the way this information is accessed greatly affects decision-making efficiency. Therefore, it is crucial to establish proper data storage and access mechanisms to maximise the benefits of blockchain technology. With an effective system, all parties within the Supply Chain can have equal access to relevant information, which in turn can enhance collaboration and integrity in business interactions.

Fu and Zhu (2019) emphasise the importance of building an authentication system that supports blockchain use in Supply Chain risk management. With a robust authentication system, companies can ensure that accessed data is accurate and reliable, which is vital for reducing risks associated with incomplete or inaccurate information in Supply Chain systems.

According to Ivanov et al. (2018), blockchain implementation in the Supply Chain promises significant efficiency improvements through decentralised and immutable transaction recording, which enhances transparency and enables real-time product tracking. Blockchain allows companies to reduce the time and costs associated with Supply Chain

management, automate processes, and minimise errors in data recording and verification. Additionally, its decentralised nature and high security increase Supply Chain data protection, reducing the risk of fraud and data manipulation. Blockchain can also be integrated with other technologies, such as IoT and smart sensors, to improve Supply Chain visibility and control, enabling better risk management, more efficient collaboration, and inventory optimisation.

Blockchain implementation in Supply Chains can enhance efficiency by increasing transparency, traceability, and automation. It improves transparency by providing permanent and easily accessible transaction records, fostering trust and collaboration among parties. Furthermore, it allows for tracking products and materials across the Supply Chain, which is essential for verifying authenticity, supporting sustainability claims, and ensuring regulatory compliance. Lastly, blockchain automates manual processes such as payments and document transfers, reducing administrative costs, accelerating transactions, and improving overall efficiency. For optimal outcomes in sustainable Supply Chains, integrating blockchain with other digital technologies, such as IoT and big data analytics, is critical (Schilling & Seuring, 2024).

Tiwari et al. (2023) demonstrate that blockchain can address Supply Chain efficiency challenges, particularly in third-party logistics (3PL), by enhancing security and trust through a distributed ledger that ensures transparency and data accuracy. Blockchain also addresses data reliability issues, lack of incentive to share information, and low visibility by providing a secure and transparent platform. Moreover, smart contracts automate processes, reduce administrative costs, and speed up transactions.

Kshetri (2021) explains that in the context of Supply Chain efficiency, blockchain implementation offers transformative solutions by improving transparency, trust, and traceability across the network. Blockchain creates immutable transaction records, allowing all Supply Chain participants to access accurate and verified information, thereby building trust and reducing the need for intermediaries that often slow processes and increase costs. Furthermore, the technology facilitates product tracking from source to consumer, which is crucial for ensuring quality and compliance with sustainability standards, especially in developing countries where regulations and enforcement may be weak. The use of smart contracts in blockchain also enables the automation of agreements based on predefined conditions, such as automatic payments upon receipt of goods or fulfillment of quality standards, reducing fraud risk and ensuring all parties meet their obligations. By addressing trust issues and high mediation costs, blockchain provides an efficient and transparent way to manage Supply Chains, promote sustainable practices, and enhance corporate competitiveness in global markets.

Overall, the application of blockchain technology in Supply Chain risk management within large companies demonstrates substantial potential to improve efficiency. By addressing information asymmetry and incompleteness, as well as establishing effective data storage and access mechanisms, companies can achieve significant competitive advantages in an increasingly complex market.

4.2.3. Implementation of Management Accounting and Blockchain in Addressing Efficiency Challenges in the Supply Chain

According to Saberi et al. (2019), blockchain enhances Supply Chain sustainability, which in turn leads to improved efficiency. Implicitly, this suggests that management accounting and blockchain can complement each other in addressing efficiency challenges. The transparency and trust provided by blockchain reduce the need for intermediaries and enhance stakeholder confidence, potentially resulting in more efficient accounting processes. Successful blockchain implementation and the full realisation of its benefits in terms of

efficiency and sustainability depend on addressing adoption challenges, such as interoperability, scalability, and regulatory issues.

In addressing efficiency challenges in the Supply Chain, the application of management accounting and blockchain technology offers an integrated solution. Management accounting provides a framework to measure performance, plan costs, manage risks, and optimise resources, while blockchain enhances data transparency, product traceability, transaction efficiency, and data security. The combination of these two approaches results in improved data accuracy, better data-driven decision-making, and reduced operational costs, enabling companies to manage Supply Chain complexity more effectively in the digital era (Garay-Rondero et al., 2020).

In the context of a circular-oriented Supply Chain, the integration of management accounting and blockchain offers a comprehensive approach to improving efficiency, with a focus on circular economy practices, transparency, and traceability at every stage. Management accounting provides a framework for measuring and managing performance related to the circular economy, such as waste reduction and recycling optimisation, through relevant performance metrics and cost-benefit analysis. Meanwhile, blockchain enhances transparency and traceability by recording every transaction and movement of materials, ensuring that each product can be tracked from the beginning to the end of its life cycle. The use of big data and analytics enables the identification of opportunities to increase efficiency, reduce costs, and forecast demand for recycled materials. Integration with ERP systems ensures centralised data and improved visibility in Supply Chain operations, supporting more accurate and effective decision-making (Del Giudice et al., 2021).

Management accounting plays a crucial role in improving Supply Chain efficiency by providing accurate and relevant information to support planning, coordination, control, and performance evaluation. Using statistical methods in operations research and budget planning, management accounting helps companies make precise and efficient decisions, maximising profit with minimal expenditure. Supply Chain cost management focuses on integrating activities across the chain to reduce total product costs, while strategic cost management ensures optimal resource utilisation from product development through to distribution.

Meanwhile, modern technologies such as blockchain provide innovative solutions by offering a secure decentralised platform for sharing information and transactions. Blockchain enables direct product traceability, reduces fraud risk, and builds trust among Supply Chain participants. By automating processes and eliminating intermediaries, the technology lowers transaction costs, accelerates operations, and enhances overall efficiency and corporate competitiveness (Al-Zaqeba et al., 2022).

Jangir et al. (2019) emphasise a blockchain-based framework for pharmaceutical Supply Chain management, where the implications for management accounting remain evident in efforts to enhance efficiency and transparency. By facilitating information and product tracking across the Supply Chain, the proposed system enables better monitoring and accounting, which are core functions of management accounting. Specifically, blockchain's ability to provide real-time data visibility, reduce fraud and errors, and increase trust among parties in the Supply Chain can lead to more accurate and efficient decisions regarding inventory management, cost control, and resource allocation. Hence, although traditional management accounting is not explicitly discussed, its principles are inherently integrated into efforts to improve efficiency and transparency through the proposed blockchain-based solutions.

5. Conclusion

This research demonstrates that Supply Chain efficiency cannot be achieved solely through the adoption of digital technology, but requires strategic integration between management accounting and blockchain technology. The main findings from this Systematic Literature Review (SLR) affirm that management accounting serves as a strategic link that transforms blockchain-based data that is transparent, real-time, and traceable into relevant managerial information for cost control, performance evaluation, and resource optimization throughout the Supply Chain. Meanwhile, blockchain functions as an enabling technology that improves data integrity, process visibility, and trust among Supply Chain actors.

From a theoretical perspective, this research contributes by enriching Supply Chain and management accounting literature through an integrative approach that positions management accounting as an interface between digital transformation and Supply Chain efficiency improvement. Unlike previous research that tends to examine management accounting and blockchain separately, this study affirms that the combination of both produces stronger efficiency impacts through the reduction of information asymmetry, improvement of inter-organizational coordination, and reduction of transaction and operational costs.

Practically, the results of this research imply that managers need to view blockchain not only as a technology infrastructure, but as a strategic data source that must be integrated into management accounting systems, such as budgeting, cost management, and performance measurement. This integration enables more data-driven decision-making and sustainable efficiency improvement. For policymakers and Supply Chain stakeholders, this research emphasizes the importance of developing standards, governance, and system interoperability that support the integration of blockchain and management accounting, particularly in complex and sustainability-oriented Supply Chains.

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