

THE SOLUTIONS OF BLOCKCHAIN TECHNOLOGY IN ACCOUNTING PERSPECTIVE: A SYSTEMATIC LITERATURE REVIEW

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Abstract

The emergence of blockchain technology has the potential to revolutionize the accounting field with substantial consequences. These challenges encompass issues in traditional accounting practices, such as the potential for fraudulent activities, human mistakes, and manipulation of data. The objective of this study is to assess the potential of blockchain technology as a means to address these issues from an accounting standpoint. The employed approach is Systematic Literature Review (SLR), which entails a thorough exploration and examination of relevant literature. The findings of this systematic literature review (SLR) demonstrate that the utilization of blockchain technology in the field of accounting holds the promise of enhancing security, transparency, and efficiency in financial record-keeping and reporting. Blockchain technology also facilitates the implementation of triple-entry based accounting principles and real-time reporting, thereby enhancing financial performance. Furthermore, blockchain provides a robust level of data security via advanced encryption technology. Despite the existing technical and regulatory obstacles, the advantages presented by blockchain technology in the field of accounting are substantial and have the capacity to revolutionize accounting methodologies entirely. The study concludes that blockchain technology holds significant potential in addressing various challenges in accounting, enhancing the accuracy of financial information, and reinforcing integrity throughout the accounting process.

Keywords: *Accounting, Blockchain Technology, Solutions*

1. INTRODUCTION

Blockchain technology is a groundbreaking advancement in the field of information technology that has transformed our perception, storage, and transmission of data. A blockchain is a distributed digital ledger that securely and transparently records and verifies transactions. An essential feature of this technology is the immutability of any transaction or data block recorded on the blockchain, which cannot be altered or erased without the majority consensus of the network (Bandaso et al., 2022). This can offer a robust level of security and mitigate data alterations or potential fraudulent activities. Blockchain facilitates a significant degree of transparency and immutability, as transaction records are readily available to all participants in the network. This is particularly advantageous in the realm of cryptocurrencies such as Bitcoin, as every transaction is observable by any individual. Furthermore, blockchain technology possesses the capacity to revolutionize diverse industries, including supply chain, logistics, banking, and licensing, through the reduction of bureaucratic procedures, optimization of operations, and enhancement of data security (Bandaso et al., 2022).

Blockchain technology can also facilitate the creation of smart contracts, which are self-executing agreements that operate based on predefined conditions, eliminating the need for intermediaries. Implementing this can lead to a decrease in expenses associated with transactions and a boost in effectiveness across various domains, such as commerce, property, and others. In general, blockchain technology holds immense potential to revolutionize multiple facets of our

lives and drive substantial advancements across various industries. Despite the existence of remaining technical and legal obstacles, the utilization and adoption of blockchain are steadily expanding. It is highly probable that this technology will become an essential component of the future of information technology (Arwin et al., 2023).

The utilization of blockchain technology holds immense potential to revolutionize the existing framework within the accounting domain. Conventional accounting practices typically involve the central storage of transaction records and financial evidence, relying on third-party entities like banks or financial institutions. However, this approach is susceptible to human errors, fraudulent activities, and data manipulation. Blockchain, known for its decentralized nature and robust security measures, has the potential to address several of these issues (Arwin et al., 2023). Within the realm of accounting, blockchain technology facilitates the documentation of transactions that are immutable and cannot be altered or erased without the agreement of the majority of the network. This process establishes a clear and indisputable record of financial activities. This facilitates auditors in verifying data and ensuring the integrity of financial information. Moreover, the utilization of smart contracts in blockchain technology enables the automatic execution of accounting procedures, leading to a reduction in administrative expenses and an acceleration of payment or reporting operations (Bandaso et al., 2022).

The utilization of blockchain technology can facilitate more precise and prompt real-time reporting, as every transaction will be directly documented in a decentralized ledger. This will facilitate stakeholders' direct access to financial information, including investors, creditors, and regulatory supervisors. Furthermore, by virtue of its capacity to identify replication or inaccuracies in transactions, blockchain can also serve as a deterrent and detection mechanism for fraudulent activities or errors (Vernandi & Hernawan, 2023). Although blockchain presents numerous benefits in the field of accounting, it also entails certain difficulties and barriers that must be addressed, including the dynamic nature of regulations and the requirement for accounting standards that align with this innovative technology. Nevertheless, advancements in blockchain technology within the accounting domain will persist as a captivating and pertinent matter in the realm of finance and business. Accounting plays a crucial role in both the business world and society at large. The significance of accounting can be perceived from multiple perspectives. Accounting facilitates the process of documenting, organizing, and monitoring all monetary transactions conducted by businesses. By adopting this approach, companies can gain a comprehensive comprehension of their financial state, enabling them to make well-informed choices and assess their progress over a period of time. Accounting serves as a crucial mechanism for upholding transparency and accountability in the business sphere (Rahmawati & Subardjo, 2022). This guarantees that the company adheres to relevant financial and tax regulations, and mitigates risks associated with fraud or legal non-compliance.

Accounting furnishes crucial information for investors, creditors, governments, and the general public to assess a company's financial well-being. Accounting plays a crucial role in both business decision making and maintaining the integrity and stability of the economy as a whole (Vernandi & Hernawan, 2023). Exploring blockchain technology solutions from an accounting standpoint holds immense promise for revolutionizing accounting practices and the overall economy. Blockchain solutions offer substantial advantages, such as the automation of accounting processes through the use of smart contracts, which can effectively minimize human error and decrease administrative expenses. Further research could prioritize the creation of accounting

standards that are compatible with blockchain technology. This research would aim to resolve challenges related to revenue recognition, real-time financial reporting, and enhanced risk management. Research could investigate strategies for effectively addressing security and privacy concerns associated with the utilization of blockchain technology in accounting, such as resolving data access challenges and implementing robust encryption measures. Further investigation could examine the influence of blockchain technology on the processes of auditing and internal control within the business setting. This encompasses the capability to conduct real-time transaction audits and promptly identify potential instances of fraud or errors. This research has the potential to provide insights into how the adoption of blockchain technology can impact the accounting profession and its role within organizations. Consequently, conducting research on blockchain solutions within the field of accounting has the potential to facilitate beneficial transformations in the methods by which we document, monitor, and disclose financial transactions. Additionally, it can enhance the dependability, clarity, and effectiveness of accounting procedures, ultimately yielding advantages for businesses, investors, and society at large.

2. RESEARCH METHODS

The Systematic Literature Review (SLR) method is a rigorous and organized approach to gathering, assessing, and integrating pertinent research in a specific domain of expertise. The process of SLR commences by formulating a precise research query and identifying suitable keywords. Subsequently, researchers conducted an exhaustive search in scientific databases and digital libraries to identify studies that satisfied the pre-established inclusion criteria. After identifying the pertinent studies, the researcher conducted a selection process by examining the abstract and full text to verify if the study satisfied the inclusion criteria (Sastypratiwi & Nyoto, 2020). During the concluding phase of Systematic Literature Review (SLR), the researcher amalgamates the discoveries derived from the chosen studies and articulates them in a methodical report. The main objective of a systematic literature review (SLR) is to offer a thorough and inclusive examination of the current body of literature, pinpoint areas where knowledge is lacking, and enhance comprehension of a specific research subject. The SLR method is highly valuable for collecting robust scientific evidence, particularly in the domains of policy development, experimental research, and theory development across various scientific disciplines (Hopfenbeck et al., 2018).

3. RESULTS AND DISCUSSION

The following table 1 is the SLR results based on a review of ten journals by searching for relevant keywords based on research, including Accounting and Blockchain Technology.

Table 1. Research Results

No.	Article Title	Writer	Research Findings/Results
1	Innovation in Using Blockchain in Increasing the Security of Educational Intellectual Property	(Journal et al., 2022)	Blockchain in creating a variety of recording applications that are reliable and cannot be modified. The increasingly frequent use and development of this technology reflects the rapid growth in popularity and demand. The use of blockchain technology in an educational context can provide guarantees for the accuracy of student data.

2	Transforming Accounting Practices Through Technology: The Role of Artificial Intelligence, Data Analytics, and Blockchain in Accounting Process Automation	(Nugrahanti et al., 2023)	Blockchain technology has the potential to fundamentally change accounting practices by providing a secure, transparent and change-resistant platform for recording and confirming financial transactions. This has the potential to increase accuracy and trust in financial data and reduce the risk of fraud.
3	Solution for Using Blockchain Technology to Overcome the Problem of Distribution of Covid-19 Social Assistance Funds	(Fazreen & Munajat, 2022)	The use of blockchain is an innovation in database management, where blockchain is used in distributing social assistance and collaborating with financial technology. Therefore, database reform is needed that can reduce errors in setting government targets.
4	Blockchain Implementation in Accounting and Auditing in Indonesia	(Pratiwi, 2022)	A blockchain-based accounting system and assurance approach will result in the disclosure of information that can be verified directly and automatically. However, the challenges of developing and implementing these very different technologies should not be overlooked.
5	Application of Blockchain Technology in Accounting Information Systems: Potential and Challenges	(Muhammad & Junianti, 2023a)	Applying blockchain technology in information accounting systems has great potential to improve security, transparency and efficiency. However, it is necessary to carefully address technical and regulatory challenges so that optimal results can be achieved.
6	Triple Entry Bookkeeping in the Era of Blockchain Technology: A Literature Review	(Ahmad et al., 2022)	Blockchain technology presents a new paradigm in the realm of accounting. Blockchain-connected triple entry bookkeeping brings further potential to the accounting process. This is caused by the existence of smart contracts in the blockchain which act as automatic controllers in the storage and transfer of accounting information.
7	Blockchain Implementation in the Field of Accounting and Supply Chain Management: Literature Study	(Arwin et al., 2023)	Even though blockchain technology brings valuable potential benefits to the accounting industry, the majority still feel skeptical about this technology. Research on blockchain technology is theoretical, and only a few empirical studies are found in the literature.
8	Blockchain Technology: How to Deal With It? in Accounting Perspective	(Bandaso et al., 2022)	The advantages of blockchain include transparency, security, time stamping, and immutability, while disadvantages include the need for large storage capacity, low scalability and response time, less awareness in implementation, and the need for experts. There are also external factors such as opportunities and threats.

The utilization of blockchain technology in the field of accounting presents a groundbreaking solution that can effectively address several key obstacles encountered in conventional accounting methodologies. Within this particular framework, blockchain offers a reliable and easily accessible decentralized platform for documenting and validating financial transactions. Implementing this measure decreases the likelihood of mistakes caused by human actions and the intentional alteration of data, resulting in accounting records that are more precise and dependable. In addition, blockchain technology can facilitate the implementation of triple-entry accounting principles. This involves the inclusion of a third entry in addition to the conventional debit and credit records, which automatically records each transaction on the blockchain (Muhammad & Junianti, 2023b). This facilitates instantaneous reporting, as well as expedited monitoring and authentication of transactions. Hence, blockchain technology has the potential to enhance efficiency and productivity within the accounting process. Despite existing technical and regulatory obstacles, the advancement of blockchain solutions in accounting holds significant promise for enhancing the precision and reliability of financial data, while also mitigating the likelihood of fraudulent activities and mistakes.

The utilization of blockchain technology in the field of accounting has resulted in significant transformations in the manner in which financial records and transactions are documented and supervised. Blockchain technology ensures that each financial transaction is meticulously documented within a series of interconnected blocks and distributed across the network in a decentralized manner. This feature ensures a strong level of security and permanence, as once records are inputted, they cannot be altered or removed without the approval of the majority of the network (Muhammad & Junianti, 2023b). Practically, blockchain offers a reliable, open, and distributed framework for documenting transactions. This measure mitigates the likelihood of fraudulent activities, human mistakes, and unauthorized alterations of data, thereby enhancing the precision and dependability of financial records. Furthermore, blockchain technology also facilitates the implementation of triple-entry based accounting. This entails the inclusion of a third entry in addition to the conventional debit and credit records, which automatically records every transaction in the blockchain. This facilitates immediate reporting, as well as expedited monitoring and authentication of transactions (Lutfiani et al., 2022).

Blockchain employs robust encryption technology to safeguard financial data stored within blocks. Nevertheless, it is crucial to guarantee that entry to the blockchain is exclusively permitted to authorized entities, employing suitable multi-stage authentication and access restrictions. Although there are existing technical and regulatory obstacles, the implementation of blockchain technology in accounting holds significant promise for enhancing the accuracy and dependability of financial data, while also mitigating the likelihood of mistakes and fraudulent activities. By skillfully incorporating and comprehending these technologies, blockchain has the capacity to enact beneficial transformations in accounting practices (Lutfiani et al., 2022). Utilizing blockchain technology in accounting provides numerous substantial advantages. Blockchain establishes a robust and distributed framework for documenting and overseeing financial transactions, mitigating the potential for human fallibility and data tampering. By requiring the majority of the network's approval, financial records are rendered immutable, resulting in enhanced accuracy and reliability (Arwin et al., 2023).

Furthermore, blockchain technology facilitates the implementation of triple-entry based accounting, wherein each transaction is automatically recorded in the blockchain, alongside the conventional debit and credit entries. This feature enables instantaneous reporting and expedited

monitoring of transactions, enabling companies to promptly acquire comprehensive understanding of their financial performance. Blockchain employs robust encryption techniques to safeguard financial data stored within blocks, ensuring data security. The implementation of multi-stage identification and stringent access controls guarantees that only authorized individuals are able to access the data (Vernandi & Hernawan, 2023). Additional advantages encompass enhanced clarity, increased efficacy in reporting, and the possibility of decreased administrative expenses. Moreover, blockchain can enhance efficiency in financial audits by granting direct access to authenticated data. Implementing blockchain technology in accounting offers substantial advantages in terms of dependability, efficiency, and safeguarding financial records and reporting. This ultimately enhances accounting procedures, promotes transparency, and fosters trust in the accounting process (Nugrahanti et al., 2023).

Ensuring security and privacy in the implementation of blockchain technology in accounting is a crucial factor that requires meticulous attention. Ensuring that access to the blockchain is restricted to authorized parties is crucial from a security standpoint. Multi-stage identification and robust encryption can be employed to safeguard data stored on the blockchain. Regular audits and monitoring are essential for identifying potential security threats and suspicious activities (Fazreen & Munajat, 2022). Regarding privacy, it is imperative to establish a stringent policy that governs the access granted to specific entities. There are instances where blockchain does not permit the direct storage of personal data within its structure. Alternatively, it is possible to store sensitive information in an encrypted form outside the blockchain, with the blockchain solely documenting references to said data. This measure enhances the safeguarding of data privacy (Pratiwi, 2022). Furthermore, it is imperative to thoroughly contemplate compatibility with data protection regulations, such as the GDPR (General Data Protection Regulation) in Europe, as well as data protection laws in other jurisdictions. Blockchain implementation should adhere to relevant legal frameworks and respect individual privacy rights (Lutfiani et al., 2022). It is crucial to engage data security and privacy specialists in the process of designing, developing, and implementing blockchain solutions to guarantee that all security and privacy concerns have been thoroughly addressed. Through effective management of security and privacy concerns, the utilization of blockchain technology in accounting can yield advantages while upholding crucial data safeguarding.

4. CONCLUSION

Blockchain technology revolutionizes accounting practices by offering groundbreaking solutions that effectively address various prevailing challenges. The adoption of blockchain technology ensures robust security, complete transparency, and unalterable records in financial recording and reporting, thereby mitigating the potential for fraud, human error, and data tampering. Blockchain enhances accuracy and efficiency in the accounting process by implementing triple-entry based accounting and real-time reporting. Furthermore, blockchain offers a robust level of data security through the implementation of powerful encryption technology. Despite the existing technical and regulatory obstacles, the advantages presented by blockchain in terms of accounting are substantial and have the capacity to revolutionize accounting practices, enhance the accuracy of financial information, and reinforce integrity in the accounting process. Blockchain technology presents novel solutions in the accounting domain, holding significant potential to revolutionize the conventional approach to financial record-keeping and reporting.

Blockchain technology addresses issues such as error, fraud, and data manipulation by implementing robust security measures, ensuring data cannot be altered, and providing a transparent record of all transactions. The incorporation of triple-entry based accounting concepts and real-time reporting enhances the precision and effectiveness of accounting practices. Furthermore, this technology provides a robust level of data security through powerful encryption. Despite the existence of technical and regulatory obstacles, blockchain technology has the potential to significantly enhance the quality of financial information, increase the reliability of accounting practices, and reinforce integrity in the accounting process. With the ongoing progress and adoption of blockchain technology, we can anticipate substantial transformations in accounting methodologies in the coming years.

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