Jurnal Dinamika Akuntansi dan Bisnis
URL: http://jurnal.unsyiah.ac.id/JDAB/index

Exploring the Potential Applications of Blockchain Technology in Accounting Practice: A Systematic Literature Review

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https://dx.doi.org/10.24815/jdab.v11i1.33476

ARTICLE INFO

Article history:
Received date: 09 August 2023
Received in revised form: 27 September 2023
Accepted: 19 October 2023
Available online: 15 February 2024

Keywords:
Accounting innovation, blockchain technology, challenges, systematic literature review, transformative potential

Citation:
Mahdani, R., Risnafitri, H., & Mardiaton. (2024). Exploring the Potential Applications of Blockchain Technology in Accounting Practice: A Systematic Literature Review. *Jurnal Dinamika Akuntansi dan Bisnis, 11*(1), 15–32

Kata Kunci:
Invovasi akuntansi, teknologi blockchain, tantangan, tinjauan literatur sistematis, potensi transformatif

ABSTRACT

This study aims to examine the potential of blockchain technology in revolutionizing conventional accounting processes and mitigating persistent inefficiencies and problems. This study introduces the potential of blockchain technology to revolutionize conventional accounting processes and address persistent inefficiencies and challenges. By employing a rigorous search methodology, establishing specific criteria for selection, and conducting meticulous data analysis, this paper presents significant discoveries pertaining to the implementation of blockchain technology in the field of accounting. The results suggest an increasing fascination with the potential of blockchain technology to bring about a transformative impact on the accounting sector. The use of blockchain technology in the field of accounting encompasses several areas such as the recording of transactions, automation of accounting operations, and enhancement of auditing procedures. Application of this technology contributes to the improvement of transparency, integrity, and efficiency in financial reporting. However, for widespread adoption to occur, it is imperative to overcome many difficulties like standardisation, interoperability, scalability, legal compliance, and data protection. The study emphasizes the importance of investigating the possibilities of blockchain technology in the field of accounting to address conventional accounting obstacles. The findings of this study may be utilized by researchers to discover potential areas for further research. Additionally, practitioners can acquire valuable insights into the advantages and difficulties associated with implementing these findings.

Mengeksplorasi Potensi Aplikasi Teknologi Blockchain dalam Praktik Akuntansi: Tinjauan Literatur Sistematis

ABSTRAK

Artikel ini bertujuan untuk menguji potensi teknologi blockchain dalam merevolusi proses akuntansi konvensional dan mengurangi inefisiensi dan masalah yang terus-menerus terjadi. Dengan menggunakan metodologi pencarian yang ketat, penggunaan kriteria khusus untuk seleksi, dan analisis data yang cermat, artikel ini menyajikan penemuan-penemuan signifikan yang berkaitan dengan implementasi teknologi blockchain di bidang akuntansi. Hasilnya menunjukkan adanya ketertarikan yang meningkat terhadap potensi teknologi blockchain untuk membawa dampak transformatif pada sektor akuntansi. Penggunaan teknologi blockchain di bidang akuntansi mencakup beberapa area seperti pencatatan transaksi, otomatisasi operasi akuntansi, dan peningkatan prosedur audit. Pengaplikasian teknologi ini berkontribusi pada peningkatan transparansi, integritas, dan efisiensi dalam pelaporan keuangan. Namun, agar adopsi secara luas dapat terjadi, sangat penting untuk mengatasi berbagai kesulitan seperti standarisasi, interoperabilitas, skalabilitas, kepatuhan hukum, dan perlindungan data. Penelitian ini menekankan pentingnya menyelidiki kemungkinan teknologi blockchain di bidang akuntansi untuk mengatasi hambatan akuntansi konvensional. Temuan penelitian ini dapat digunakan oleh para peneliti untuk menemukan area potensial untuk penelitian lebih lanjut. Selain itu, para praktisi dapat memperoleh wawasan yang berharga tentang keuntungan dan kesulitan yang terkait dengan penerapan temuan ini.

1. Introduction

The landscape of accounting has seen significant developments over the years, driven by the advent of digital technologies and their integration into financial practices. Traditional accounting systems, while effective, have faced certain limitations and inefficiencies that have hindered the realization of their full potential. Such shortcomings include the need for trust in central authorities, the time-consuming process of reconciling records, the vulnerability to human errors, and the potential for data tampering or manipulation (Gulin et al., 2019). These challenges have spurred researchers and industry experts to seek alternative solutions that can address these issues and unlock new possibilities for the field of accounting.

In contemporary times, the advent of blockchain technology has surfaced as a disruptive influence capable of reconfiguring the fundamental underpinnings of accounting methodologies. (Rajnak & Puschmann, 2020; Pascual Pedreño, Gelashvili, & Pascual Nebreda, 2021). The fundamental nature of blockchain is a decentralised and distributed ledger system, wherein transactions are securely documented across a network of nodes, hence establishing a sequential series of blocks. Every individual block inside the system is equipped with a timestamp and a reference to the preceding block, so establishing an unalterable and easily verifiable chronicle of all transactional activities. The consensus mechanism employed by blockchain ensures that all participants in the network agree on the validity of transactions, eliminating the need for a centralized authority to validate and authenticate data. These unique characteristics of blockchain hold the promise of enhancing the reliability, accuracy, and security of accounting records (Guo, Xie, & Li, 2020).

The utilisation of blockchain technology in accounting practise is highly advantageous due to its decentralised nature and ability to securely and transparently record transactions. Numerous scientific studies over the past two decades have focused on automation (Kokina & Davenport, 2017; Susskind & Susskind, 2015), big data (Cockcroft & Russell, 2018; Vasarhelyi, Kogan, & Tuttle, 2015), cloud computing (Choudhary & Vithayathil, 2013; Cleary & Quinn, 2016), social media (Arnaboldi, Busco, & Cuganesan, 2017; Manetti & Bellucci, 2016; Ramassa & Di Fabio, 2016), and artificial intelligence (Issa, Sun, & Vasarhelyi, 2016; Moşteanu & Faccia, 2020; Sutton, Holt, & Arnold, 2016) on accounting research and practice. The technology offers several benefits such as increased efficiency, transparency, and security of financial transactions (Bogucharskov et al, 2018; Laroiya, Saxena, & Komalavalli, 2020).

Blockchain platforms and protocols have different characteristics and capabilities. Public blockchains like Bitcoin and Ethereum are transparent but may present privacy and scalability difficulties for accounting applications. Private or permissioned blockchains can meet the demands of organisations that need more privacy and control over their financial data. Despite blockchain's accounting promise, difficulties persist. Before broad implementation, academics and practitioners must address scalability, energy consumption, regulatory compliance, and system interoperability.

This comprehensive literature review summarises accounting blockchain research. We analyse peer-reviewed publications, conference papers, and reports to synthesise current material and highlight important findings, methods, and theoretical frameworks employed by academics in this emerging field. This article addresses research gaps on blockchain's accounting disruption potential. This comprehensive study will synthesise the expanding blockchain accounting literature and offer insights. Identifying research patterns and gaps will clarify blockchain technology's unique benefits for accountants, businesses, and policymakers. We wish to identify blockchain accounting challenges and advise additional research. This study informs scholars, practitioners, and policymakers on the pros and cons of blockchain technology in accounting. Examining the present state of blockchain

technology in accounting will encourage more research, experimentation, and innovation.

This research assessed blockchain's accounting uses. The format guides readers through a systematic literature review, presenting what's known. Section 2 reviews blockchain technology's theoretical foundations and accounting implications. This section introduces blockchain's underlying ideas and functions that underpin its accounting transformation potential. Section 3 discusses this study's systematic review technique. It describes the rigorous search method, inclusion and exclusion criteria, and data extraction procedure utilised to find relevant peer-reviewed publications, conference papers, and reports. This section emphasises the need of a strong process for data dependability and validity. Section 4 synthesises the chosen papers and categorises them by blockchain technology uses in accounting. Audit trail management, fraud detection, smart contracts, and financial reporting use blockchain. This section clarifies blockchain's varied accounting uses and possible advantages by organising the study findings topically.

Section 5 analyses the consequences of the found study findings, providing vital insights into the prospects and problems of incorporating blockchain technology into accounting practises. Section 5 analyzes the consequences of the study findings, providing vital insights into the prospects and problems of incorporating blockchain technology into accounting practices. It discusses the pros and cons, including transparency, efficiency, scalability, regulatory compliance, and data privacy. This section attempts to balance blockchain's influence on accounting. Section 6 concludes with the systematic literature review's main findings. It emphasises this study's contributions to blockchain technology in 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 accounting study. This methodical methodology guarantees that the ideas offered are organised, well-supported, and lead to a greater understanding of blockchain's potential to revolutionise accounting practises. This methodical approach guarantees that the ideas offered are organized, well-supported, and lead to a greater understanding of blockchain's potential to revolutionize accounting practices.

2. Literature review

This section covers blockchain technology's theoretical and conceptual roots and accounting implications. The blockchain technology operates as a decentralised, peer-to-peer network (Davidson, Filippi, & Potts, 2018). Cryptographic hashing links each block's transactions to the previous block. The data becomes unchangeable (Zhai et al., 2019). Blockchain technology's consensus mechanism ensures network members agree on transaction validity, eliminating the need for a central authority (Albanese et al., 2020). This enhances security and promotes financial record transparency, which is crucial to accounting methods. Blockchain accounting implications go beyond financial data. "Smart contracts," self-executing contracts with pre-defined principles inscribed on the blockchain, might automate many accounting operations (Demi, Colomo-Palacios, & Sánchez-Gordón, 2021). Smart contracts allow real-time updates, automatic reconciliation, and quick transaction verification, saving accountants time and effort (Nugent, Upton, & Cimpoesu, 2016; Liu & Liu, 2019).

Blockchain's decentralisation allows auditors to view transparent and immutable financial transactions (Shu et al., 2022). These capabilities might transform auditing and improve financial report accuracy. However, as promising as blockchain accounting is, there are significant challenges. Scalability and energy consumption pose substantial barriers to mainstream adoption of blockchain technology in accounting (Khan, Jung, & Hashmani, 2021). Ethical utilization of blockchain technology in accounting necessitates addressing regulatory compliance and data privacy concerns (Han et al., 2023).

3. Research method

The study adhered to the fundamental objectives of conducting a systematic review, as outlined by the Prefered Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (Liberati et al., 2009; Moher et al., 2009). Our search timeline included the years 2018-2022. The review follows a rigorous methodology that ensures the inclusion of relevant studies and the minimization of bias. This section discusses the review's search approach and selection criteria, data extraction and analysis, research quality and bias evaluation, and limitations and heterogeneity sources. The primary database used for collecting reviewed articles was Scopus, chosen for its comprehensiveness and reliability in providing scientific literature.

Defining the research questions

Research questions determine the subject, purpose, and scope of a systematic review (Booth et al., 2011). We identified the following research questions:

RQ1. What are the potential applications of blockchain technology in accounting practice?

This study intends to explore the various ways in which blockchain technology can be used in accounting practice, such as financial reporting, auditing, and fraud detection. It seeks to identify the potential applications of blockchain technology and how it can enhance the efficiency, accuracy, and transparency of accounting processes.

RQ2. What are the benefits and challenges of using blockchain technology in this context?

This research aims to investigate the benefits and challenges of implementing blockchain technology in accounting practice. It seeks to identify the advantages of using blockchain technology in terms of cost savings, improved data accuracy, and regulatory compliance, as well as the potential drawbacks such as scalability issues and security vulnerabilities. By examining both the benefits and challenges, this research can provide valuable insights for stakeholders considering the adoption of blockchain technology in accounting practice.

Searching for the literature

The search strategy and selection criteria for studies involved a comprehensive search, Scopus is our main source of information to ensure scientific soundness and inclusiveness. The search terms used were "blockchain," "accounting," "auditing," and "financial reporting"." In addition to the databases, the review included a search of gray literature, which refers to non-peer-reviewed sources, such as conference proceedings, reports, and other types of publications not typically found in traditional academic journals.. On June 1, 2023, we extracted 200 articles from the database using the specified search terms. The search was limited to articles published between the years 2018 and 2022 to ensure relevance. After removing duplicates and accounting for missing full texts, the final number of recovered documents was 192, consisting of unique articles. The selection and collection of these 200 articles followed a research protocol that aimed to include studies relevant to the review's objectives. This protocol involved a thorough examination of each article's title, abstract, and keywords, ensuring alignment with the study's focus on the intersection of blockchain technology and accounting practices.

Applying exclusion and inclusion criteria

The collected articles must be published in English and highlight blockchain technology's potential uses in accounting. The following grounds justify exclusion: [1] articles lacking complete availability, [2] articles not in English, [3] articles on other issues or 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 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.

Fig. 1 shows our study's methodological phases using a modified PRISMA diagram (Page et al., 2021) for a qualitative systematic review. The PRISMA flow diagram shows how information moves via a systematic review. The above procedure requires rigors documentation of the number of identified, included, and omitted records. It also has detailed exclusion rationales.

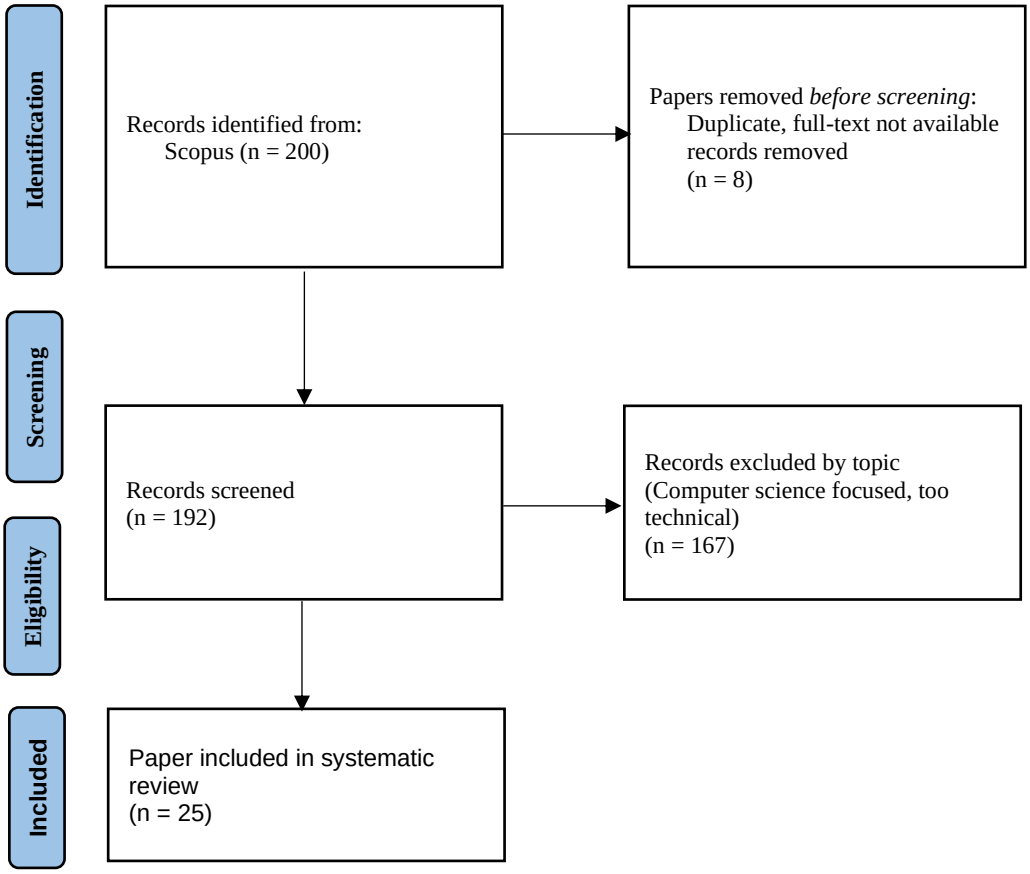

Figure 1. Identification and inclusion process of the systematic review (PRISMA diagram)

4. Results and discussion

Publication year

Figure. 2 shows the amount of published papers from 2018 to 2022 reveals interesting trends in the field of accounting. Over this five-year period, there has been a consistent increase in the number of published papers, indicating a growing interest and focus on advancements within the accounting profession. The first study (Wang & Kogan, 2018) shows the potential to drastically impact accounting and auditing, especially with the intention of continuous monitoring and fraud prevention. This discovery holds special significance when contemplating the future use of blockchain technology in the field of accounting.

The concept of blockchain, initially proposed as the foundational technology for digital currencies like Bitcoin, has attracted considerable interest owing to its distinctive attributes of decentralisation, immutability, and transparency (Liu, 2021). As the number of published papers on blockchain in accounting has steadily risen, it reflects the

increasing recognition of its potential to revolutionize the accounting industry. The data analysis also indicates an accelerated growth in the number of papers published between 2020 and 2021 (20%), signifying a notable surge in interest and research in this area. This surge can be attributed to the growing realization among researchers and practitioners alike that blockchain has the ability to address some of the long-standing challenges and inefficiencies present in traditional accounting systems.

The slight dip in the number of published papers from 2021 to 2022 should be viewed with caution, as it may not necessarily indicate a decline in interest. Rather, it may be attributed to various factors such as shifting research priorities or emerging trends in other domains within accounting. The data study shows how important blockchain technology could be as a change agent in the accounting field, since it can improve trust, security, and speed in financial deals and record-keeping. Nevertheless, this dip highlights the need for continued exploration and deeper understanding of the potential applications and implications of blockchain technology in accounting practice.

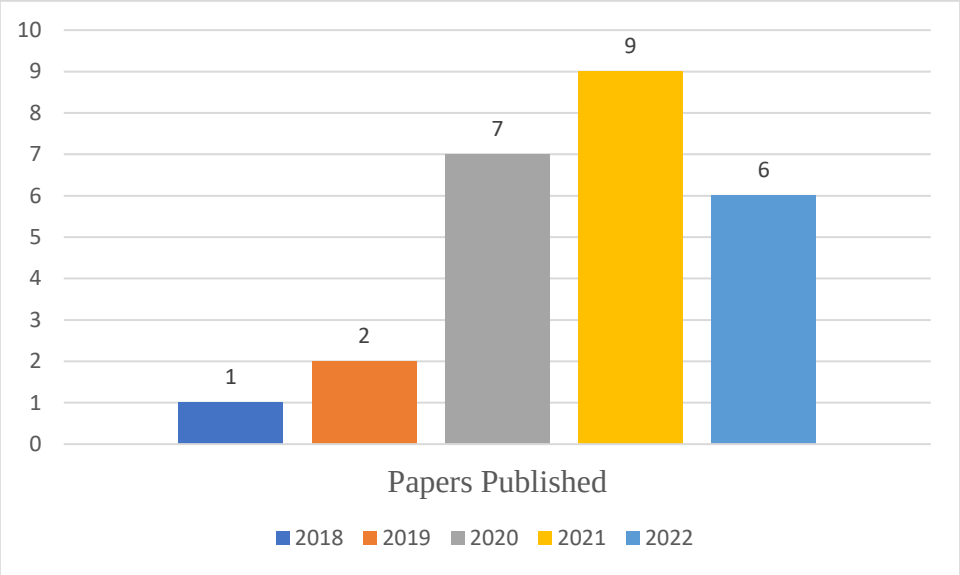

Figure 2. Publication year of the selected papers.

Classification of the relevant papers

We examined the percentage of conceptual and empirical articles in blockchain scholarship to assess research and study design (Fig. 3). Empirical articles use qualitative and quantitative methods to observe and quantify blockchain events and processes to clarify our categorisation process. Conceptual papers examine blockchain concepts, applications, theories, advantages, and drawbacks without collecting or analysing primary data (Frizzo-Barker et al., 2020).

Out of the entire sample of 25 publications, it was found that 64% (n = 16) were characterised as conceptual in nature, while the remaining 36% (n = 9) were classified as empirical. In 2018, a significant milestone was achieved with the introduction of empirical research on the design of a transaction processing system (TPS) based on blockchain technology. This research effort also involved the development of a prototype to effectively showcase the operational capabilities of the blockchain-based TPS in areas such as real-time accounting, continuous monitoring, and fraud detection (Wang & Kogan, 2018).

The ratio of conceptual to empirical publications throughout time is seen in Fig. 4. The figure shows that in 2018, the data indicates a 100% emphasis on empirical studies. The exclusive focus on empirical studies during this period likely aimed to establish a foundation of practical evidence and

insights for subsequent research. The following year, in 2019, the ratio shifted to 100% conceptual studies. This conceptual focus demonstrates the need to establish a strong theoretical foundation before proceeding with empirical investigations. In 2020, a notable shift occurred, with 29% of research papers classified as empirical and 71% as conceptual. Researchers likely sought to bridge the gap between theory and practice, exploring theoretical frameworks while also conducting empirical studies to validate and refine those concepts. The trend continued in 2021, with 44% of papers classified as empirical and 56% as conceptual. In 2022, the ratio shifted once again, with 33% of papers classified as empirical and 67% as conceptual. This shift indicates a continued focus on both practical and conceptual aspects, albeit with a slightly higher emphasis on conceptual studies. The predominance of conceptual studies suggests researchers were keen on further refining and expanding the theoretical underpinnings of blockchain in accounting while still conducting empirical investigations to validate the proposed concepts.

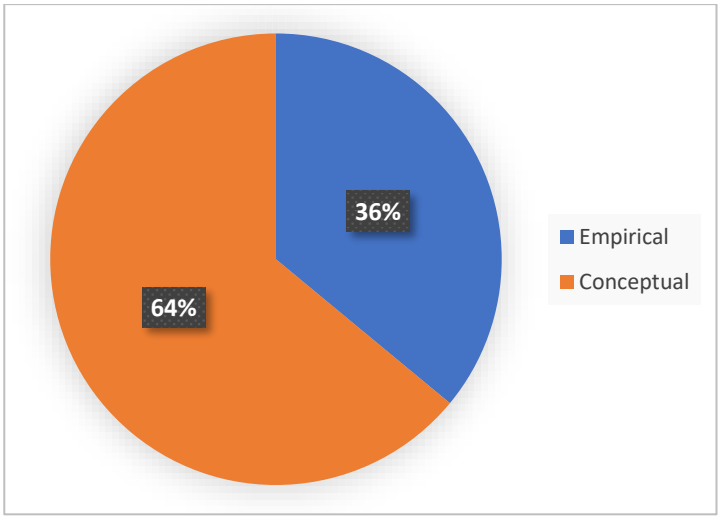

Figure 3. Conceptual vs. empirical studies

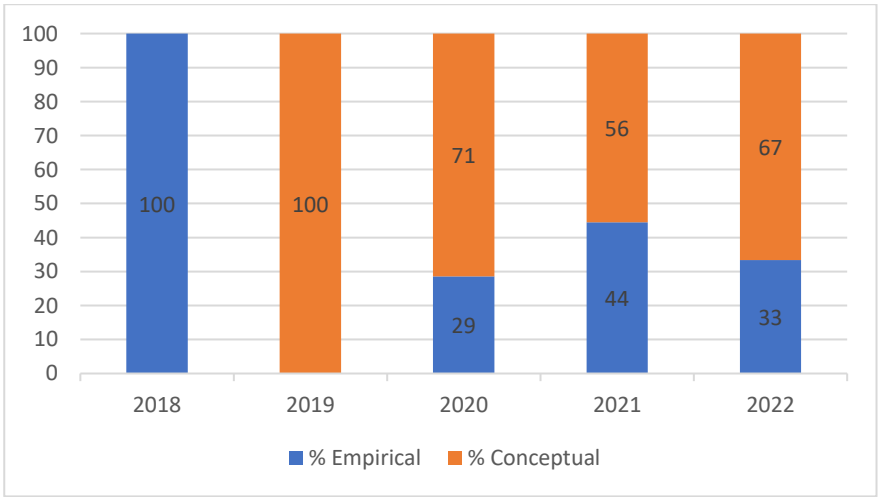

Figure 4. Conceptual vs. empirical studies over time

Discussion

This part presents our analysis, which is a detailed explanation of the solutions to each of our study topics. We then discuss the strengths, weaknesses, and implications of this study for future studies.

RQ1: What are the potential applications of blockchain technology in accounting practice?

There are a total of 12 publications during 2018–2022. Blockchain, the cutting-edge technology that underpins cryptocurrencies, has attracted the attention of entrepreneurs, researchers, and practitioners interested in exploring its applications beyond the financial industry. As a result, blockchain evolved into a mechanism for driving innovation and enabling the emergence of novel business models.

The utilisation of blockchain technology holds the capacity to fundamentally transform the existing financial reporting practises within the field of accounting. The utilisation of blockchain technology has the potential to augment the precision, dependability, and promptness of financial data due to its decentralised and transparent characteristics. The study conducted by Demirkan et al. (2020) examines the present and prospective applications of Blockchain technology within the realm of business, with a particular focus on its utilisation in Accounting and cybersecurity domains. They mentions that blockchain can be effectively introduced in accounting for recording and reporting transactions, generating financial statements, and various other uses of its technologies. It eliminates the need for double-entry accounting when businesses can record their transactions directly on the shared blockchain, synchronized in real-time with other participants. Wang and Kogan (2018) propose a conceptual framework for a transaction processing system (TPS) that utilises blockchain technology. They proceed to construct a prototype to showcase the practicality of this blockchain-based TPS in various domains, such as real-time accounting, continuous monitoring, and fraud prevention.

The convergence of accounting and blockchain technology holds significant potential in enhancing the integrity of information, reducing transmission costs, expediting transaction settlement, and mitigating fraudulent activities. Blockchain can be used as an accounting information system. Transactions can be recorded in a log that can't be changed, so financial accounts can be made in real time. This makes sure that the data is correct and reduces the chance of mistakes or scams. (Fuller & Markelevich, 2020; Lardo et al., 2022). Additionally, blockchain smart contracts can automate the execution of predefined accounting rules, streamlining the preparation and presentation of financial reports. Bennett et al., (2020) mentions the use of smart contracts, which are self-executing contracts recorded immutably on a blockchain.

The integration of blockchain technology and artificial intelligence applications is seen to have the potential to automate a range of financial procedures, including contract execution, payment processing, receipt management, and even tax return submission. This integration of blockchain technology and AI can streamline and automate these processes, making them more efficient and accurate. Despite this, auditors still need to ensure the validity of these smart contracts, by verifying that they involve legitimate parties and legitimate goods or services. This highlights the potential of blockchain technology to increase transparency and trust in financial reporting systems.

In the realm of auditing, the potential applications of blockchain technology in accounting practice are vast. The primary motivations for auditors to adopt blockchain technology are performance expectancy and social influence, as highlighted by Ferri et al., (2020). Performance expectancy refers to the perceived benefits and improvements that individuals expect to gain from using a particular technology. Performance expectancy plays a significant role in shaping their intention to adopt blockchain. The study found that auditors expectation of improved performance through the introduction of blockchain-based practices in auditing activities positively influences their intention to use blockchain.

Social influence, on the other hand, refers to the impact of social factors and the influence of others on an individual's decision to adopt a technology . Ferri highlights the importance of social influence in the acceptance of technological change, emphasizing that the social dimension of any

technological change process is a crucial factor in successful acceptance by employees. Blockchain's decentralized and secure nature has the ability to significantly enhance the efficiency and effectiveness of audit procedures.

Auditors can leverage blockchain as a robust platform for recording and storing financial data, providing them with real-time access to an immutable and transparent audit trail. This enables auditors to easily verify the accuracy and completeness of transactions, reducing the need for extensive sample testing and manual data reconciliation.

In conclusion, this discussion highlights several potential applications of blockchain technology in accounting practice, as identified through the systematic literature review. The reviewed studies have shed light on how blockchain can revolutionize financial reporting practices, automate accounting processes, and enhance auditing procedures. 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 citations per year (CPY) for each study. It serves as a valuable reference for understanding the influence and significance of the research conducted in this field.

Table 1. Summary of research findings on the potential applications of blockchain technology in accounting practice

Author	Title	Year	Cited by	CPY	Research findings
Demirkan, S., Demirkan, I., & McKee, A.	Blockchain technology in the future of business cyber security and accounting	2020	88	29.33	Blockchain is transforming auditing and accounting and should be implemented in cybersecurity.
Wang, Y., & Kogan, A.	Designing confidentiality-preserving blockchain-based transaction processing systems	2018	107	21.40	Proposes an innovative design that leverages the benefits of blockchain technology for enterprise information systems and continuous monitoring systems.
Fuller, S. H., & Markelevich, A.	Should accountants care about blockchain?	2020	26	8.67	There are several factors that raise significant questions about whether blockchain will ever be significantly integrated into the accounting function, including scalability and cost concerns.
Bennett, S., Charbonneau, K., Leopold, R., Mezon, L., Paradine, C., Scilipoti, A., & Villmann, R.	Blockchain and Crypto assets: Insights from Practice	2022	3	1.00	Creating and using cryptocurrencies enable businesses, charities, and individuals to conduct transactions and raise funds efficiently and cost effectively, benefiting more those without access to established financial systems today
Ferri, L., Spanò,	Ascertaining	2020	18	6.00	The main predictors of

R., Ginesti, G., & Theodosopoulos, G.	auditors' intentions to use blockchain technology: evidence from the Big 4 accountancy firms in Italy				auditors' intention to use blockchain are performance expectancy and social influence
Ibrahim, S., Yusoff, W. S., & Rashid, I. M. A.	A systematic review of disruptive technology within accounting and accounting sector	2021	2	1.00	Blockchain technology has the potential to revolutionize the way transactions are recorded and verified, further impacting the accounting sector

RQ2: What are the benefits and challenges of using blockchain technology in this context?

The adoption of blockchain holds the potential to revolutionize traditional financial systems by enhancing transparency, security, and efficiency. To shed light on the benefits and challenges associated with implementing blockchain technology in accounting practice, this systematic literature review (SLR) aims to consolidate and analyze the findings of relevant scholarly research conducted between 2018 and 2022. Prior investigations have explored the implications of blockchain technology in accounting, providing valuable insights into its potential advantages and hurdles. This review builds upon the existing knowledge by synthesizing the findings of 13 selected publications, which have undergone a rigorous selection process to ensure their relevance and reliability. By examining these scholarly works, we aim to present a comprehensive overview of the benefits and challenges inherent in the adoption of blockchain technology in accounting practice.

The reviewed literature consistently demonstrates several benefits of utilizing blockchain technology in accounting practice. Firstly, blockchain's decentralized nature ensures increased transparency and integrity of financial transactions, reducing the risk of fraud and manipulation. Additionally, the immutability of blockchain records enhances the audit trail and simplifies the reconciliation process, improving overall efficiency and accuracy in financial reporting. Kend and Nguyen, (2020) explores the impact of emerging technologies, including big data analytics, artificial intelligence, robotics, and blockchain, on the Australian audit and assurance profession. The study uses thematic analysis to draw conclusions from interviews with key stakeholders. They discovered that these technologies have a positive effect on auditing, allowing auditors to focus on more important evaluation tasks. Blockchain technology could enable a real-time, verifiable, and transparent accounting ecosystem, and transform current auditing practices, resulting in a more precise and timely automatic assurance system. However, the study also highlights the need for regulators to keep up with the fast-paced IT evolution in the auditing field. The application of blockchain technology to accounting and assurance remains under-explored, and its adoption rates vary by country due to risk mitigation and regulatory requirements. Additionally, some scholars and practitioners view blockchain technology as a threat to the status quo of the accounting and audit profession. Therefore, while blockchain technology has the potential to revolutionize accounting practice, it also poses challenges that need to be addressed.

Blockchain technology has been a topic of much discussion in recent years, with many experts predicting that it will revolutionize various industries, including accounting and auditing. The potential benefits of using blockchain technology in accounting are numerous. Desplebin, Lux, and Petit (2021) conducted a comprehensive review of 39

scholarly papers and reports published by prominent accounting and auditing firms. The objective of their study was to identify and discuss eight major themes, which were subsequently categorised into three distinct groups. These categories encompassed the transformation of accounting as a technique, the transformation of accounting tasks, and the primary developments observed in the fields of accounting and auditing. Additionally, the study examined the key advancements in the work environment, skills, and education of professionals in the accounting and auditing domains.

The research identifies several potential benefits and challenges of using blockchain technology in accounting practice. Some of the benefits include increased efficiency, transparency, and security in accounting processes, as well as the potential for cost savings and improved accuracy. However, there are also several challenges to consider, such as the need for standardization and interoperability, the potential for errors in smart contracts, and the need for new skills and training for accountants and auditors. Additionally, the research notes that the impact of blockchain on accounting has received less attention than its impact on auditing, and further research is needed to fully understand the potential benefits and challenges of this technology in the accounting profession.

The government of Uzbekistan is actively promoting the development and use of blockchain technology. Tulakhodjaeva and Khodjaeva, (2021) provides a detailed analysis of the benefits and challenges of digitalization and the use of blockchain technology in accounting practice in Uzbekistan. The research highlights the advantages of digitalization, including increased efficiency, competitiveness, and transparency in accounting and audit processes. The use of blockchain technology is seen as a key enabler of these benefits, as it offers high speed and accuracy of transactions, security and permanent recording of data, personal limited access to certain data, and reliability and transparency provided in the blockchain. However, consistent with Kend and Nguyen (2020), the research also identifies several challenges associated with the implementation of blockchain technology in accounting practice. These include the lack of standardization and regulation in the field, the need for significant investment in infrastructure and training, and concerns about data privacy and security. Simultaneously, in the United Arab Emirate, the study conducted by Abdennadher et al., (2021) examines the perspectives of accountants and auditors towards the use of blockchain technology in the United Arab Emirates (UAE) subsequent to the government's announcement to transition 50% of its transactions to the blockchain platform by 2021.

The research findings indicate that the use of blockchain technology has a significant impact on the accounting profession, namely in the areas of transaction recording, evidence storage, and the facilitation of secure commercial operations. The findings suggest that auditors are impacted by the use of blockchain technology, leading to modifications in their audit procedures and strategic approaches. The blockchain exhibits significant promise in enhancing conventional auditing practises through the provision of a cost-effective and decentralised audit procedure, as well as the automation of audit evidence. The accounting practises of organisations will remain unchanged; nevertheless, they will undergo automation with the advancement of cryptocurrencies and blockchain technologies. The integration of blockchain technology within assurance services is anticipated to be facilitated by the active participation and heightened knowledge of accountants and auditors. The study outlines the imminent obstacles facing blockchain technology and potential determinants of its efficacy.

Futhermore, Prux, Momo, & Melati (2021) identify the potential benefits and challenges of implementing blockchain technology in government accounting in Brazil. The study collected data from 94 specialists through a questionnaire. Based on the findings of the study, the use of blockchain technology in the field of accounting offers advantages such as enhanced trust and control,

heightened information security, and improved safeguards against fraudulent activities and corrupt practises. Nevertheless, the use of blockchain technology in government accounting encounters some problems. These issues encompass a dearth of knowledge regarding the technology and its cost-benefit analysis inside public agencies, the difficulties associated with system implementation, and the absence of compelling case studies showcasing the practical application of this technology. Additional problems encompass legislative regulation, cultural opposition, insufficient expertise and training for government officials, the financial implications of implementation, and the necessity to restructure procedures and systems.

In light of the aforementioned issues, it is recommended that collaborations be established between governmental agencies and academic institutions in order to conduct more investigations on the subject matter and foster the development of comprehensive projects. Additional research is recommended to broaden the scope of the sample by include several Brazilian states and municipalities. Furthermore, it is advised to explore the underlying factors contributing to the absence of motivation in adopting blockchain-based solutions within the public sector. Collaboration between regulators, auditors, and other stakeholders is required in order to properly integrate blockchain technology into the accounting ecosystem. In order to do this, rules and guidelines for the use of blockchain technology to accounting and auditing would need to be agreed upon. Any implementation-related issues or problems would also need to be addressed. Despite these difficulties, academics and practitioners alike find blockchain technology to be an intriguing field for research and development because of its potential to enhance the quality of accounting information (Bonsón & Bednárová, 2019).

In conclusion, while the adoption of blockchain technology in accounting practice offers significant benefits such as transparency, security, and efficiency, it also presents challenges that need to be addressed. These challenges include regulatory adaptation, standardization, investment, privacy concerns, and the need for skill development.

Further research, collaboration, and partnership between academia, public agencies, regulators, auditors, and other stakeholders are recommended to fully understand and effectively integrate blockchain technology into the accounting ecosystem. 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 citations per year (CPY). It is a useful resource for comprehending the relevance and effect of the research done in this area.

Table 2. Summary of research findings on the benefits and challenges of using blockchain technology in accounting practice

Author	Title	Year	Cited by	CPY	Research findings
Desplebin, O., Lux, G., & Petit, N.	To be or not to be: blockchain and the future of accounting and auditing accounting review	2021	9	4.50	Three major issues regarding the future of blockchain in accounting and auditing emerge: the transformation of accounting techniques; main evolutions in accounting and auditing; and main evolutions in the work, skills and education of auditors.
Abdennadher, S., Grassa, R., Abdulla, H., & Alfalasi, A.	The effects of blockchain technology on the accounting and assurance profession in the UAE: an	2021	1	1.00	The blockchain impacts on the accounting profession in terms of recording of transactions, storing evidence and providing a secured environment for conducting

Author	Title	Year	Cited by	CPY	Research findings
	exploratory study				business transactions
Prux, P. R., Momo, F. D. S., & Melati, C.	Opportunities and challenges of using blockchain technology in government accounting in Brazil	2021	1	0.50	The challenges of using blockchain technology in government accounting is the lack of knowledge about the technology and its cost-benefit and implementation, difficulties in replacing or adapting systems.
Bonsón, E., & Bednárová, M.	Blockchain and its implications for accounting and auditing	2019	78	19.50	Identifies the pending challenges for blockchain, such as scalability, flexibility, a suitable architecture and cybersecurity
Silva, R., Inácio, H., & Marques, R. P.	Effective and potential implications of blockchain technology for auditing	2021	1	0.50	Blockchain technology gives stakeholders rapid access to accounting data, improving governance, transparency, and confidence. Blockchain can also deliver reliable digital payments, and financial institutions are using it to solve the payment problem
Sargent, C. S.	Replacing financial audits with blockchain: the verification issue	2022	4	4.00	Financial experts object most to the claim that consensus verification can replace financial statements or audits. The talk shows why verified “on chain” data is far behind audited financial statements.

5. Conclusions

The primary objective of this research study was to investigate the possible uses of blockchain technology in the field of accounting by conducting a comprehensive evaluation of existing scholarly literature. The examination of selected 12 articles for RQ1 and 13 articles for RQ2 spanning from 2018 to 2022 has provided valuable insights into many facets concerning the incorporation of blockchain technology in the fields of accounting and auditing.

The systematic literature study has shed light on the revolutionary capacity of blockchain technology in transforming financial reporting practices within the domain of accounting. The potential of blockchain lies in its decentralised and transparent characteristics, offering opportunities to improve the precision, dependability, and promptness of financial information. This technology can be efficiently employed in various functions, including transaction recording and reporting, financial statement generation, automation of accounting rules through smart contracts, and simplification of auditing procedures. The incorporation of blockchain technology into artificial intelligence applications enhances automation and overall effectiveness in financial procedures. Furthermore, the immutability and audit trail provided by blockchain technology facilitate data reconciliation and verification, reducing the potential for fraudulent activities and manipulations. The potential of blockchain technology to transform the field of auditing lies in its ability to offer instantaneous access to financial data, enhancing the accuracy and effectiveness of audit operations.

However, the study also highlighted the prospective benefits and specific hurdles linked to

the use of blockchain technology in the field of accounting. Addressing these challenges is crucial for a smooth and successful deployment. Effective integration of standardization, interoperability, and regulatory frameworks necessitates meticulous deliberation. Providing sufficient training and fostering skill development among accountants and auditors is imperative to effectively harness the capabilities of blockchain technology. Additionally, careful consideration of issues related to data privacy, security, and the possibility of errors in smart contracts is essential.

Notwithstanding these constraints, the systematic literature study has furnished a thorough synopsis of the current understanding pertaining to the utilization of blockchain technology in the field of accounting. This study adds to the current corpus of literature and establishes a basis for future investigation and discovery in this ever-evolving domain. In summary, the systematic literature study successfully achieved its objective of investigating the possible uses of blockchain technology in the field of accounting, highlighting its transformational potential and many advantages for the accounting profession. Recognizing the highlighted obstacles, one important avenue for future research is to explore innovative solutions that address these challenges, facilitating the efficient adoption of blockchain technology to enhance financial reporting and auditing procedures in the discipline of accounting.

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Appendix: The reviewed Papers

Title	Journal	Year	Author
Designing confidentiality-preserving Blockchain-based transaction processing systems	International Journal of Accounting Information Systems	2018	Wang, Y., & Kogan, A.
Accounting and Auditing at the Time of Blockchain Technology: A Research Agenda	Australian Accounting Review	2019	Schmitz, J. and Leoni, G.
Blockchain and its implications for accounting and auditing	Meditari Accountancy Research	2019	Bonsón, E., & Bednárová, M
Blockchain technology in the future of business cyber security and accounting	Journal of Management Analytics	2020	Demirkan, S., Demirkan, I., & McKee, A.
Big Data Analytics and Other Emerging Technologies: The Impact on the Australian Audit and Assurance Profession	Australian Accounting Review	2020	Kend, M., & Nguyen, L. A.
Blockchain in Accounting Research and Practice: Current Trends and Future Opportunities*	Accounting Perspectives	2020	Pimentel, E., & Boulianne, E.
Should accountants care about blockchain?	Journal of Corporate Accounting and Finance	2020	Fuller, S. H., & Markelevich, A.
Overview and impact of blockchain on auditing	International Journal of Digital Accounting Research	2020	Bonyuet, D.
Ascertaining auditors' intentions to use blockchain technology: evidence from the Big 4 accountancy firms in Italy	Meditari Accountancy Research	2020	Ferri, L., Spanò, R., Ginesti, G., & Theodosopoulos, G.
Blockchain and Cryptoassets: Insights from Practice*	Accounting Perspectives	2020	Bennett, S., Charbonneau, K., Leopold, R., Mezon, L., Paradine, C., Scilipoti, A., & Villmann, R.
Blockchain in the accounting, auditing and accountability fields: a bibliometric and coding analysis	Accounting, Auditing and Accountability Journal	2021	Secinaro, Dal Mas, Brescia, & Calandra
Fintech in financial reporting and audit for fraud prevention and safeguarding equity investments	Journal of Accounting and Organizational Change	2021	Roszkowska, P.
To Be or Not to Be: Blockchain and the Future of Accounting and Auditing	Accounting Perspectives	2021	Desplebin, O., Lux, G., & Petit, N.
Blockchain technology: uninvestigated issues emerging from an integrated view within accounting and auditing practices	Journal of Organizational Change Management	2021	Maffei, Casciello, & Meucci, 2021

Title	Journal	Year	Author
A systematic review of disruptive technology within accounting and accounting sector	AIP Conference Proceedings	2021	Ibrahim, S., Yusoff, W. S., & Rashid, I. M. A.
Opportunities and challenges of using blockchain technology in government accounting in brazil	BAR - Brazilian Administration Review	2021	Prux, P. R., Momo, F. D. S., & Melati, C.
Effective and Potential Implications of Blockchain Technology for Auditing	Advances in Intelligent Systems and Computing	2021	Silva, R., Inácio, H., & Marques, R. P.
Features Of Digitalization and Ensuring Transparency Of Accounting And Audit In Uzbekistan	ACM International Conference Proceeding Series	2021	Tulakhodjaeva, M., & Khodjaeva, M.
Blockchain technology innovation: An investigation of the accounting and auditing use-cases	Proceedings of the European Conference on Innovation and Entrepreneurship, ECIE	2021	Sethibe, T.
The disruption of blockchain in auditing – a systematic literature review and an agenda for future research	Accounting, Auditing and Accountability Journal	2022	Lombardi, de Villiers, Moscariello, & Pizzo
Blockchain in accounting research: current trends and emerging topics	Accounting, Auditing and Accountability Journal	2022	Garanina, Ranta, & Dumay
Blockchain in accounting practice and research: systematic literature review	Meditari Accountancy Research	2022	Bellucci, Cesa Bianchi, & Manetti
Replacing Financial Audits with Blockchain: The Verification Issue	Journal of Computer Information Systems	2022	Sargent, C. S.
Exploring blockchain in the accounting domain: a bibliometric analysis	Accounting, Auditing and Accountability Journal	2022	Lardo, A., Corsi, K., Varma, A., & Mancini, D.
The effects of blockchain technology on the accounting and assurance profession in the UAE: an exploratory study	Journal of Financial Reporting and Accounting	2022	Abdennadher, S., Grassa, R., Abdulla, H., & Alfalasi, A.