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Blockchain Technology in Accounting Practice: Literature Review

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Abstract:

This study seeks to elucidate the implementation of blockchain in accounting practices. It aims to explore the potential adoption of blockchain technology to enhance financial reporting. The research sample comprises relevant literature on blockchain adoption within the context of accounting and financial reporting. The methodology employed is a literature review, involving the reanalysis of prior research findings, theories, and concepts. The findings reveal that blockchain can improve efficiency, transparency, and robust security in transaction recording systems. Nevertheless, challenges persist in its application, including limitations in accountants' proficiency to utilize blockchain technology.

Keywords: *Blockchain*, *Accounting Practices; Transactions*

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1. Introduction

The 2020 Wirecard scandal represents one of the most prominent financial frauds involving systematic and complex accounting manipulations. Wirecard, a German digital payment company, claimed to hold €1.9 billion in fictitious overseas accounts. For years, the company fabricated financial statements by reporting non-existent funds, resulting in substantial investor losses and eroding public trust in accounting, auditing, and trading practices (Afifa et al., 2023). This scandal catalyzed significant financial regulatory reforms at the national level. Beyond regulatory responses, researchers have sought to develop systems and technologies to prevent similar frauds. Blockchain technology has emerged as a successful innovation in this regard. By leveraging blockchain, all financial transactions can be recorded in an encrypted, immutable ledger, ensuring integrity and tamper-proof audit trails (Bodkhe et al., 2020).

Introduced by Satoshi Nakamoto in 2008, blockchain technology has experienced substantial growth since its inception. Initially serving as a decentralized ledger for Bitcoin cryptocurrency transactions, blockchain now finds applications across diverse fields, including accounting. A core characteristic of blockchain is its use of distributed ledger technology (DLT), where transactions are recorded across multiple

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computational nodes (Al-Wreikat et al., 2024). Bitcoin, one of the digital currencies (cryptocurrencies) created using blockchain technology, often garners more public recognition than blockchain itself. This is unsurprising, as Bitcoin's rise in popularity propelled blockchain into mainstream discourse and research (Septiani et al., 2024). However, blockchain and Bitcoin are not entirely novel phenomena. While Bitcoin was the first widely recognized digital currency, earlier attempts at decentralized digital registries for online data existed in the 1990s (Alvina et al., 2024). Blockchain holds transformative potential for industry and project management by enhancing transparency, reliability, and efficiency. Its mechanisms address supply chain fraud stemming from information asymmetry (Alia & Lestari, 2025). Additionally, blockchain significantly enhances the relevance, timeliness, comparability, and quality of accounting information (Rahmawati & Subardjo, 2022). Synthesized studies highlight its benefits: traceability, transparency, trust, operational efficiency, auditability, security, and reduced human error risks (Alamsyah & Syahrir, 2023).

As a decentralized digital ledger, blockchain eliminates the need for centralized administration. Each transaction is chronologically recorded to create a permanent, tamper-resistant record, obviating third-party reconciliation (e.g., banks), as illustrated in Figure 1. Despite its advancements, blockchain faces adoption and implementation barriers within supply chain networks. Early-stage blockchain development encounters multi-faceted challenges, including behavioral, organizational, technological, and policy-oriented obstacles (Sanka & Cheung, 2021).

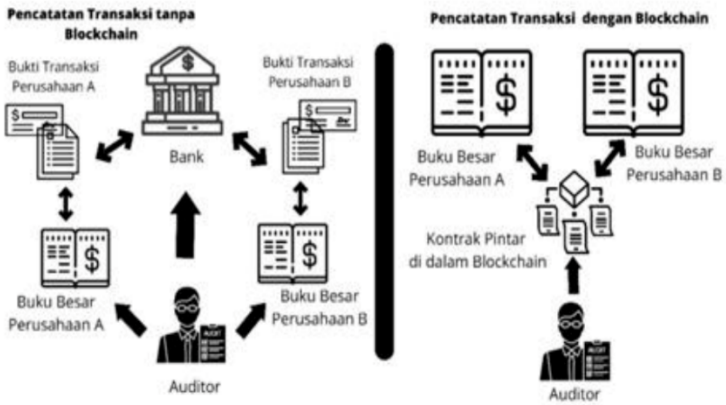

Figure 1. Differences in Financial Transaction Recording: Blockchain-Based vs. Traditional Systems
(Source : Cai, 2021**)**

Blockchain technology has the potential to reshape entire industries, particularly the financial sector, through its disruptive capabilities (Utomo, 2021). It poses a significant future threat to payment systems and may ultimately displace traditional payment infrastructures. PT GoTo Gojek Tokopedia Tbk (GoTo), for instance, operates GoPay, a digital payment service that currently relies on conventional systems such as banks and centralized digital wallets. However, the emergence of blockchain-based payment platforms like Metamask, Trust Wallet, and crypto-centric

applications enables direct peer-to-peer transactions, bypassing intermediaries like GoPay. The scalability of blockchain applications in finance spanning banking, internet finance, capital markets, and related sectors suggests vast future potential (Nisa'yanayiroh & Permatasari, 2023). Rapid adoption is anticipated in payment systems, capital markets, and smart contract implementations (Bellucci et al., 2022). Future advancements may include the global development of Central Bank Digital Currencies (CBDCs), blockchain-based digital currencies issued by national central banks.

In the Industry 4.0 era, accountants both academics and practitioners must critically assess the disruptive force of blockchain technology, even as it remains in its nascent stages. Industry analysts and professionals predict that blockchain will soon become an accounting standard (Pugna & Duţescu, 2020). As this transformational technology matures, significant opportunities arise for its broader application and development, necessitating a holistic understanding of its implications. Nevertheless, blockchain literacy and scholarly literature remain limited, particularly in Indonesia's accounting domain. Given its immense disruptive potential, further research is imperative to address this gap.

2. Theoretical Background

Blockchain technology, defined as a decentralized, immutable, and transparent distributed ledger system (Han et al., 2023), revolutionizes accounting practices by enhancing trust, security, and efficiency. Drawing on Institutional Theory (DiMaggio & Powell, 1983) which posits that organizations adopt innovations to achieve legitimacy through coercive, mimetic, and normative pressures the integration of blockchain in accounting aligns with regulatory compliance demands (e.g., IFRS) and stakeholder trust requirements (Schmitz & Leoni, 2020). The Information Systems Success Model elucidates how blockchain's transparency and data reliability mitigate information asymmetry, as evidenced in supply chain audit applications (Pugna & Duţescu, 2020), while the Resource-Based View frames blockchain's immutability as a strategic asset for fraud prevention in the banking sector (Zhang, 2021). Transaction Cost Theory (Williamson, 1981) emphasizes blockchain's role in minimizing transaction costs through smart contracts, exemplified by automated insurance claim implementations (Jayalakshmi, 2023). Collectively, these theories establish a robust analytical framework for understanding blockchain's impact on accounting, particularly in addressing challenges related to audit integrity, financial reporting accuracy, and operational efficiency.

3. Methodology

This study employs a Systematic Literature Review (SLR) approach, a qualitative methodology designed to systematically organize, evaluate, and synthesize scholarly literature relevant to the research topic. The SLR method was selected to minimize bias and enhance the scientific rigor of the findings (Bellucci et al., 2022). SLR serves to investigate a corpus of academic works, aiming to develop critical insights, identify

future research directions, and refine research questions. By adopting this method, the study establishes a robust foundation and structured methodology for deepening the understanding of blockchain technology and its implications for future accounting practices. This approach facilitates the construction of a solid conceptual framework and supports the development of significant research findings. The researchers seek to holistically describe blockchain as a phenomenon and its prospective role in accounting, emphasizing qualitative interpretations over numerical analysis.

The literature for this review was collected through manual searches on Google Scholar and Scopus, using the keywords *"blockchain"* and *"financial reporting quality"*. The selected articles include qualitative and quantitative studies published within the 2020–2025 timeframe. The subject of this study is corporate entities, while the object comprises scholarly articles. The SLR process was conducted in three phases:

a. Planning Phase
This stage involved designing the search strategy and extraction protocols. Initial database searches across Google Scholar and Scopus yielded 40 articles, of which 15 were retained after relevance screening based on the research topic and keywords.

b. Execution Phase
The SLR was implemented according to the following inclusion criteria:

1. Original empirical studies, excluding review articles.
2. Publications within the 2020–2025 timeframe.
3. Articles filtered by predefined keywords.
4. Synthesis of findings through thematic analysis.

c. Reporting Phase
Results were compiled into a structured written format. Eligible articles were synthesized and categorized, with summaries detailing author names, publication years, journal titles, research objectives, methodologies, and key findings. The reviewed literature was further analyzed to compare differences and similarities in the application of financial accounting standards within nonprofit organizations.

4. Empirical Findings/Result and Discussion

Blockchain, as the foundational technology for cryptocurrencies such as Bitcoin, plays a pivotal role in transforming modern financial paradigms. Its emergence is recognized as one of the most disruptive innovations since the internet (Cahyono et al., 2023). First introduced by Nakamoto in 2008 through the seminal paper "Bitcoin: A Peer-to-Peer Electronic Cash System," blockchain comprises a chain of linked blocks (transaction units) containing timestamped transactions secured by public-key cryptography (hash) and verified across a decentralized network. Each transaction is encrypted and integrated into an immutable, distributed sequence of records shared across all network nodes (Taylor et al., 2020). This framework, as articulated by Inghirami, (2020), prevents unauthorized alterations, creating secure and encrypted transaction documentation. A defining feature of blockchain is its immutability: each

block is cryptographically linked to its predecessor, forming an indelible chronological record. Beyond transaction security, this innovation enables transformative shifts in accounting systems, positioning blockchain as a cornerstone for fostering trust and efficiency in future accounting practices (Dzaky & Junianti, 2023).

The primary advantages of blockchain in accounting include immutability, security, and decentralization. Immutability eliminates fraudulent digital traces, reducing risks of data tampering and falsified information (Marselita, 2024). Decentralization minimizes reliance on third-party intermediaries, enhancing process efficiency, while transparency ensures data integrity and quality (Thies et al., 2023). Blockchain also accelerates transaction processing, fostering a more responsive and adaptive accounting landscape (Vardia & Singh, 2022). Its adoption not only modernizes accounting practices but also redefines the roles of accountants and auditors in the digital era (Dai & Vasarhelyi, 2017).

The Financial Executives Research Foundation (FERF) defines blockchain as a distributed ledger where transactions are recorded in real-time, synchronized, and validated across a consensus network using cryptographic algorithms (Shabahal et al., 2024). This contrasts sharply with traditional ledgers, which depend on trusted third parties for verification (Zahara, 2024). By replacing intermediaries with consensus mechanisms and robust encryption, blockchain reduces risks of data manipulation and financial fraud while ensuring transactional authenticity (Kokina et al., 2017).

As a secure accounting data repository, blockchain safeguards against unauthorized data alterations and enables accountants to verify information validity prior to financial reporting (Juwita et al., 2025). Its automated detection of data changes enhances integrity, while real-time data synchronization allows accounting systems to dynamically track relevant information. This real-time capability supports accurate financial reporting and strategic decision-making (Hartoyo et al., 2021).

Blockchain exerts a positive impact on the performance and efficiency of accounting systems in financial reporting (T. M. B. M. Sinta & Adinda, 2025). Empirical studies underscore its distinct advantages, including cost reduction, enhanced transparency, data reliability, improved data quality, and mitigated fraud risks (Arwin et al., 2023). Blockchain provides accountants with clear visibility into organizational resources and commitments, enabling informed financial planning, resource allocation, and strategic prioritization (Faccia & Mosteanu, 2019; Lisdawati et al., 2024). Its core strength lies in its distributed digital ledger, which enhances security and accessibility by replicating data across multiple network nodes (Mai, 2021). This decentralized architecture ensures high resilience against data loss while safeguarding sensitive corporate information through advanced encryption (McCallig et al., 2019). Transactions are encrypted before being uploaded to the ledger, restricting access to authorized users with decryption keys (Mustika et al., 2024).

Blockchain's rapid transaction recording and distribution capabilities significantly boost system efficiency (Fu & Zhu, 2019). Certain blockchain frameworks enable the integration of programmable code with ledger entries, automating routine accounting

tasks such as journal entries upon code execution. By maintaining a chronological, immutable record of transactions categorized by type (Chowdhury, 2021), blockchain eliminates redundant data reconciliation across multiple databases, thereby reducing human error and fraud potential (Palidita et al., 2024). Any ledger modification is validated and instantaneously reflected across the network, ensuring consensus-based transparency.

Despite these benefits, blockchain adoption in financial accounting faces critical challenges. While technological advancements are pivotal, user proficiency and organizational readiness remain equally decisive (Nisa'yanayiroh & Permatasari, 2023). Scalability limitations, as identified by Sanka & Cheung, (2021), hinder mass adoption, necessitating strategic innovation to enhance network capacity (Alamsyah & Syahrir, 2023). Cybersecurity vulnerabilities pose another barrier, demanding robust protocols to protect sensitive financial data stored on blockchain architectures (Bandaso et al., 2022). Advanced access controls and encryption standards are imperative to ensure data integrity and restrict unauthorized access, underscoring the need for a secure foundation for blockchain integration in financial reporting.

5. Conclusions

The adoption of blockchain technology in financial reporting offers significant advantages, including enhanced data security, transparency, operational efficiency, accountability, and accelerated audit processes. Within financial reporting frameworks, blockchain can improve transactional transparency, reduce costs and processing time, and strengthen stakeholder trust. However, challenges such as regulatory compliance, scalability limitations, cybersecurity vulnerabilities, and regulatory uncertainties must be addressed to realize its full potential. Successfully overcoming barriers related to scalability, cybersecurity, privacy, and legal compliance will be critical to blockchain's integration into financial reporting systems. Stakeholders must collaborate to develop innovative solutions and advance adaptive regulatory frameworks, establishing a robust foundation for blockchain's future role in accounting and financial reporting.

This necessitates interdisciplinary collaboration among regulators, industry stakeholders, and academic researchers to design regulatory frameworks that align with blockchain's dynamic nature. Concurrently, organizations must prioritize workforce training programs to enhance technical proficiency in blockchain management. Such efforts require engagement from both internal and external stakeholders to ensure comprehensive understanding and effective implementation of blockchain technology.

References:

Afifa, M. M. A., Van, H. V., & Van, T. L. H. (2023). Blockchain adoption in accounting by an extended UTAUT model: empirical evidence from an emerging economy. *Journal of Financial Reporting and Accounting*, *21*(1), 5–44. https://doi.org/10.1108/JFRA-12-2021-0434

Alamsyah, A., & Syahrir, S. (2023). The Taxonomy of Blockchain-based Technology in the Financial Industry. *F1000Research*, *12*, 457. https://doi.org/10.12688/f1000research.133518.1

Alia, A., & Lestari, B. A. H. (2025). Revolutionizing the Accounting Curriculum: Optimizing Accountant Competencies through Data Technology, Blockchain, and Artificial Intelligence from the Perspective of Accounting Students at the University of Mataram in Industry 5.0. *Asian Journal of Applied Business and Management*, *4*(1), 341–354. https://doi.org/10.55927/ajabm.v4i1.84

Alvina, Y., Sridayanti, W., & Azzahra, N. (2024). Analisis Teknologi Blockchain Pada Cybersecurity di Bidang Akuntansi : Sistematik Literatur Review. *Jurnal Riset Akuntansi*, *16*(1).

Al-Wreikat, A., Almasarwah, A., & Al-Sheyab, O. (2024). Blockchain technology, cryptocurrencies and transforming accounting fees. *Int. J. Electron. Bus.*, *19*(1), 95–122. https://doi.org/10.1504/IJEB.2024.135657

Arwin, M., Aulia, D., & Uzliawati, L. (2023). Implementasi Blockchain Dalam Bidang Akuntansi dan Supply Chain Management: Studi Literatur. *PROGRESS Jurnal Pendidikan, Akuntansi Dan Keuangan*, *6*(2).

Bandaso, T. I., Randa, F., Faradilla, F., Mongan, A., Kristen, U., Paulus, I., Atma, U., & Makassar, J. (2022). Blockchain Technology: Bagaimana Menghadapinya? Dalam Perspektif Akuntansi. *Accounting Profession Journal (APAJI)*, *4*(2).

Bellucci, M., Cesa Bianchi, D., & Manetti, G. (2022). Blockchain in accounting practice and research: systematic literature review. In *Meditari Accountancy Research* (Vol. 30, Issue 7, pp. 121–146). Emerald Group Holdings Ltd. https://doi.org/10.1108/MEDAR-10-2021-1477

Bodkhe, U., Tanwar, S., Parekh, K., Khanpara, P., Tyagi, S., Kumar, N., & Alazab, M. (2020). Blockchain for Industry 4.0: A comprehensive review. *IEEE Access*, *8*, 79764–79800. https://doi.org/10.1109/ACCESS.2020.2988579

Cahyono, S., Haider, I., & Sawarjuwono, T. (2023). A new paradigm of Luca Pacioli's bookkeeping on blockchain phenomenon. *Jurnal Akuntansi Aktual*, *10*(1), 52. https://doi.org/10.17977/um004v10i12023p052

Cai, C. W. (2021). Triple-entry accounting with blockchain: How far have we come? *Accounting and Finance*, *61*(1), 71–93. https://doi.org/10.1111/acfi.12556

Chowdhury, K. (2021). Financial Accounting in the Era of Blockchain-A Paradigm Shift from Double Entry to Triple Entry System. *Social Science Research Network*. https://ssrn.com/abstract=3827591

Dai, J., & Vasarhelyi, M. (2017). Toward Blockchain-Based Accounting and Assurance. *Journal of Information Systems*, *31*. https://doi.org/10.2308/isys-51804

Dzaky, A. M. H., & Junianti, S. A. (2023). Penerapan Teknologi Blockchain Dalam Sistem Informasi Akuntansi: Potensi Dan Tantangan. *Jurnal Jawara Sistem Informasi*, *1*(1).

Faccia, A., & Mosteanu, N. R. (2019). Accounting and blockchain technology: from double-entry to triple-entry. In *The Business and Management Review* (Vol. 10). ABRM.

Fu, Y., & Zhu, J. (2019). Big Production Enterprise Supply Chain Endogenous Risk Management Based on Blockchain. *IEEE Access*, *7*, 15310–15319. https://doi.org/10.1109/ACCESS.2019.2895327

Han, H., Shiwakoti, R. K., Jarvis, R., Mordi, C., & Botchie, D. (2023). Accounting and auditing with blockchain technology and artificial Intelligence: A literature review. *International Journal of Accounting Information Systems*, *48*. https://doi.org/10.1016/j.accinf.2022.100598

Hartoyo, A., Sukoharsono, E. G., & Prihatiningtyas, Y. W. (2021). Analysing the Potential of Blockchain for the Accounting Field in Indonesia. *Jurnal Akuntansi Dan Keuangan*, *23*(2), 51–61. https://doi.org/10.9744/jak.23.2.51-61

Inghirami, L. E. (2020). *Accounting Information Systems in the Time of Blockchain*. https://doi.org/10.1007/978-3-030-47355-6_8

Jayalakshmi, L. (2023). Blockchain And Its Implications In Accounting And Auditing. *International Journal of Humanities & Social Science Studies (IJHSSS)*, *12*(2), 12.

Juwita, Z., Yollanda, F., Azira, M., & Azmi, Z. (2025). Penerapan Blockchain Dalam Meningkatkan Keamanan Akuntansi Dan Transparansi Sistem Informasi Akuntansi. *JAKP Jurnal Akuntansi Dan Perpajakan*, *01*(3), 339–345.

Kokina, J., Mancha, R., & Pachamanova, D. (2017). Blockchain: Emergent Industry Adoption and Implications for Accounting. *Journal of Emerging Technologies in Accounting*, *14*. https://doi.org/10.2308/jeta-51911

Lisdawati, Saputra, P. P., Yulianto, E., Lase, H., & Daryanto. (2024). Implementasi Teknologi Blockchain Dalam Akuntansi Keuangan: Peluang Dan Tantangan Bagi Perusahaan Di Indonesia. *Jurnal Neraca Peradaban*, *4*(2).

Mai, X. (2021). Distributed Accounting and Blockchain Technology in Financial Accounting. *Journal of Physics: Conference Series*, *1881*(2). https://doi.org/10.1088/1742-6596/1881/2/022078

Marselita, O. (2024). Blockchain Technology and Quality of Accounting Information: A Systematic Literature Review. *Jurnal Akuntansi Dan Keuangan*, *26*(2), 103–117. https://doi.org/10.9744/jak.26.2.103-117

McCallig, J., Robb, A., & Rohde, F. (2019). Establishing the representational faithfulness of financial accounting information using multiparty security, network analysis and a blockchain. *International Journal of Accounting Information Systems*, *33*, 47–58. https://doi.org/10.1016/j.accinf.2019.03.004

Mustika, B., Perdana, A. I., & Umyana, A. (2024). Penerapan Teknologi Blockchain Dalam Perspektif Akuntansi, Apakah Tepat Guna? *Akbis: Media Riset Akuntansi Dan Bisnis*, *8*(2), 58. https://doi.org/10.35308/akbis.v8i2.9530

Nisa'yanayiroh, I., & Permatasari, D. (2023). Determinan Efektifitas Sistem Informasi Akuntansi. *AKUISISI : Jurnal Akuntansi*, *19*(1), 154–165. http://dx.doi.org/10.24217

Palidita, V. F., Wulandari, T. S., Santika, & Azmi, Z. (2024). Penggunaan Teknologi Blockchain Dalam Sistem Informasi Akuntansi : Peluang Dan Tantangan. *Jurnal Akuntansi AKTIVA*, *5*(1).

Pugna, I. B., & Duțescu, A. (2020). Blockchain – the accounting perspective. *Proceedings of the International Conference on Business Excellence*, *14*(1), 214–224. https://doi.org/10.2478/picbe-2020-0020

Rahmawati, M. I., & Subardjo, A. (2022). Apakah blockchain mampu mencegah kecurangan akuntansi? *Fair Value : Jurnal Ilmiah Akuntansi Dan Keuangan*, *4*(5). https://journal.ikopin.ac.id/index.php/fairvalue

Sanka, A., & Cheung, R. C. C. (2021). A systematic review of blockchain scalability: Issues, solutions, analysis and future research. *Journal of Network and Computer Applications*, *195*, 103232. https://doi.org/10.1016/j.jnca.2021.103232

Schmitz, J., & Leoni, G. (2020). Accounting and Auditing at the Time of Blockchain Technology: A Research Agenda. *Australian Accounting Review*, *29*(2), 331–342. https://doi.org/10.1111/auar.12286

Septiani, Rudy Kurniawan, & Rafles Ginting. (2024). Pengaruh Pengetahuan dan Persepsi Mahasiswa terhadap Implementasi Teknologi Blockchain dalam Praktik Akuntansi. *Economic Reviews Journal*, *3*(3). https://doi.org/10.56709/mrj.v3i3.524

Shabahal, H. K., Admar, O. A., Mar'atussoliha, & Nurlaila. (2024). Implementasi Blockchain Dengan Meningkatkan Transparasi Dan Keamanan Laporan Keuangan Global Dalam Akuntansi Internasional. *Measurement: Jurnal Akuntansi*, *18*(2), 228–239.

Sinta, T. M. B. M., & Adinda, Z. (2025). Penerapan Blockchain dalam Sistem Informasi Akuntansi (SIA). *Jurnal Akuntansi Keuangan Dan Bisnis*, *2*(4). https://jurnal.ittc.web.id/index.php/jakbs/index

Taylor, P. J., Dargahi, T., Dehghantanha, A., Parizi, R. M., & Choo, K. K. R. (2020). A systematic literature review of blockchain cyber security. In *Digital Communications and Networks* (Vol. 6, Issue 2, pp. 147–156). Chongqing University of Posts and Telecommunications. https://doi.org/10.1016/j.dcan.2019.01.005

Thies, S., Kureljusic, M., Karger, E., & Krämer, T. (2023). Blockchain-Based Triple-Entry Accounting: A Systematic Literature Review and Future Research Agenda. *Journal of Information Systems*, *37*(3), 101–118. https://doi.org/10.2308/ISYS-2022-029

Utomo, T. P. (2021). Implementasi Blockchain di Perpustakaan : Peluang, Tantangan dan Hambatan. *Buletin Perpustakaan Universitas Islam Indonesia*, *4*(2), 173–200.

Vardia, S., & Singh, H. (2022). Adoption of Blockchain Technology in Accounting and Auditing: Benefits and Challenges. *Pacific Business Review (International)*, *14*(8). www.pbr.co.in

Zahara, I. (2024). Adopsi Teknologi Blockchain untuk Meningkatkan Pelaporan Keuangan: Tinjauan Literatur. *AKUISISI Journal Akuntansi*, *20*(1), 64–74. http://dx.doi.org/10.24217

Zhang, T. (2021). Chinese parents' perception of emergency remote K-12 teaching-learning in China during the COVID-19 pandemic. *Asian Journal of Distance Education* , *16*(1).