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## The Implementation Of Blockchain Technology In Improving Transparency And Reliability Of Financial Reporting

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### **Abstrak**

*This study explores the implementation of blockchain technology in financial reporting and assesses how it affects organizational financial systems' operational efficiency, dependability, and transparency. Blockchain technology offers a revolutionary method of documenting and confirming financial transactions because of its decentralized, immutable, and real-time ledger structure. The results show that by reducing data manipulation and guaranteeing traceable transaction records, blockchain adoption greatly improves the accuracy, consistency, and reliability of financial information. Businesses that have used blockchain-based financial reporting systems report significant gains in audit timeliness and efficiency as well as decreases in fraud risk, manual recording errors, and reconciliation problems. Verified financial data is readily available in real time, which helps stakeholders and management make better decisions. Despite these benefits, the study points out a number of obstacles that prevent widespread adoption, such as high implementation costs, difficult technological integration with outdated accounting systems, worries about data protection, and a lack of unified and transparent legal frameworks. In particular, regulatory uncertainty makes firms hesitant about legal accountability and compliance. The study's findings are in line with other research, supporting blockchain's potential as a game-changing financial reporting innovation. Future research should concentrate on creating scalable implementation models, improving system interoperability, and analyzing long-term cost-benefit implications, according to the study's conclusion. In order to promote the wider and more sustainable deployment of blockchain technology in the financial industry, legislators and standard-setting organizations are also urged to create thorough regulatory rules.*

**KeyWord** : Blockchain, Transparency, Realibility, Financial Reporting

### **1. Introduction**

In the digital era, the integrity and transparency of financial reporting have become critical concerns for stakeholders, regulators, and the broader public. Traditional financial reporting systems, while robust in many ways, are still vulnerable to manipulation, fraud, and inefficiencies due to centralized data management and limited real-time visibility. As businesses face increasing demands for accountability and trustworthiness in their financial disclosures, emerging technologies such as blockchain offer promising solutions.

Blockchain, a decentralized and immutable ledger system, has garnered significant attention for its potential to transform various industries, including finance and accounting. By enabling secure, transparent, and real-time data sharing among multiple parties, blockchain technology can fundamentally reshape the way financial

information is recorded, verified, and reported. Its core features—immutability, transparency, and decentralization—align well with the goals of reliable financial reporting, which include accuracy, timeliness, and traceability.

According to the definition of blockchain, every block contains a variety of information, including a "hash," which serves as the block's unique identification. The hash identifies and connects this block to every other block, including those that come before and after it [1]. Therefore, it may be said that a blockchain is a collection of transactions in the form of blocks, with transaction data sorted and linked together (chain = chain). A blockchain is a digital data storage system in which the hash information (a hash is an alphanumeric code that represents words, messages, or data) from the previous block must be present in the newest block or the most recently connected block. To create a chain, each block will make reference to the one before it.

This journal explores the implementation of blockchain technology in enhancing the transparency and reliability of financial reporting. It investigates how blockchain can reduce the risk of fraud, improve auditability, and foster greater stakeholder trust. Additionally, the study highlights real-world applications, potential challenges in adoption, and future implications for regulatory frameworks and professional accounting standards. Through a comprehensive analysis, this paper aims to provide valuable insights into how blockchain can be effectively integrated into financial reporting systems to meet the evolving demands of a digital and data-driven economy.

## **2. Literature Review**

The growing interest in blockchain technology within the domain of financial reporting is rooted in its potential to address long-standing issues related to data integrity, transparency, and trust. Several studies have examined the implications of blockchain integration into accounting and financial systems, with most findings pointing to substantial improvements in transparency, reliability, and operational efficiency.

### **1. Blockchain and Financial Transparency**

Transparency in financial reporting is crucial for ensuring stakeholder confidence and maintaining the integrity of capital markets. Blockchain's decentralized and tamper-proof nature allows for real-time visibility of financial transactions, enabling stakeholders to verify records without relying solely on third-party auditors.[2] This visibility reduces the likelihood of manipulation or fraudulent reporting. Similarly, suggest that the transparency provided by blockchain enhances accountability in financial reporting processes by enabling continuous monitoring and real-time assurance [3].

### **2. Enhancing Reliability and Auditability**

Reliability in financial reporting entails that information is free from material error and bias, and can be depended upon by users. Argue that blockchain increases the reliability of financial records by ensuring data immutability once transactions are recorded on a blockchain, they cannot be altered without consensus, providing a verifiable audit trail. [4]. In other journal, highlights that blockchain can also

streamline the auditing process by automating verification procedures and reducing the time lag between transactions and audits.[5] Smart contracts embedded within blockchain platforms can further support compliance by executing financial controls automatically.

### 3. Integration Challenges and Considerations

Despite the promising benefits, implementing blockchain in financial reporting is not without challenges. Issues such as scalability, interoperability with existing financial systems, regulatory uncertainty, and the need for technical expertise may hinder widespread adoption [6]. Moreover, the standardization of blockchain applications in financial reporting remains a work in progress, and concerns around privacy and data confidentiality in permissioned versus public blockchains must also be addressed [7].

### 4. Real-World Applications and Industry Adoption

Several companies and audit firms have begun experimenting with blockchain-based solutions for financial reporting. Deloitte, EY, PwC, and KPMG have initiated pilot projects exploring the use of blockchain for real-time auditing and financial statement preparation. IBM and Maersk's blockchain initiative for supply chain tracking demonstrates how integrated financial and operational data can be made more transparent and trustworthy [8]. These case studies provide early evidence of blockchain's capacity to improve financial data quality and accessibility.

### 5. Theoretical Foundations and Future Outlook

From a theoretical perspective, the application of blockchain in financial reporting aligns with agency theory and stakeholder theory, emphasizing the need to reduce information asymmetry and enhance trust among parties. As regulations adapt and blockchain technology matures, its role in the future of financial reporting is expected to expand, with potential to evolve into a standard framework for real-time, automated, and highly reliable financial disclosures.

### 3. Method

This study examines how implementing blockchain technology can improve the dependability and transparency of financial reporting using the literature study technique. To have a thorough grasp of the subject under investigation, a literature review is an all-encompassing method of gathering, evaluating, and integrating previous research [9].The following is a detailed explanation of the stages of this research:

1. Determining the Subject and Goals of the Study Choosing a topic and creating research goals are the first steps in this process. The study's main focus was on how blockchain technology affects financial reporting's dependability and transparency. The study's goal is to determine the advantages and disadvantages of implementing blockchain technology while also investigating how it might improve both areas.

2. Selection of Literature Making a decision based on quality and relevance comes next after gathering a variety of material. To make sure that the study only contained pertinent and excellent literature, the researchers

created inclusion and exclusion criteria. Articles that specifically address blockchain adoption in relation to financial reporting, transparency, and dependability are eligible for inclusion. Articles that are low quality or irrelevant, such as those that are not peer-reviewed, are examples of exclusion criteria.

3. Data Analysis and Synthesis After then, a thorough analysis of the chosen literature follows. The researcher determines the primary themes, crucial ideas, and significant discoveries pertaining to the subject of the study. Reading critically and taking note of key details from each source are part of this analysis. The researcher then compiles the results to get a general idea of how blockchain technology can improve financial reporting's dependability and transparency.

4. Critical Analysis To determine the validity, dependability, and limitations of the current studies, the researcher critically examines the literature. In addition to understanding the context and limitations of the findings, this evaluation is crucial for identifying gaps in the literature. In order to identify any similarities or differences, researchers also compare the findings from other studies.

5. Concluding remarks and suggestions The researcher makes inferences on how blockchain technology affects the dependability and transparency of financial reporting based on the literature's analysis and synthesis. Along with pointing out areas that need more study, the researcher offers helpful suggestions for the application of blockchain technology in the financial industry.

The report's style is methodical and understandable, and it includes citations from the reviewed literature. Using the literature review approach, this study should give practitioners and scholars in the future a thorough grasp of the possibilities and difficulties of integrating blockchain technology into financial reporting.



Picture 1. Data by process : VOSviewer

By examining the application of blockchain technology particularly in the field of financial reporting—an area that is still underrepresented in the current body of blockchain literature—this study offers a fresh viewpoint. By investigating how blockchain might improve transparency, reliability, and trustworthiness in financial disclosures, this study fills a crucial vacuum in the literature, which primarily focuses on the broad applications and technological advancements of blockchain. This study suggests a

revolutionary method that guarantees data integrity, lowers the risk of fraud, and boosts stakeholder confidence by incorporating the immutable and decentralized characteristics of blockchain technology into the financial reporting process. Additionally, it offers a useful implementation methodology that connects abstract ideas with actual business procedures, placing the research at the nexus of financial governance and rising technologies.

#### 4. Result and Discussion

Citation metrics		Help
Publication years:	2020-2024	
Citation years:	5 (2020-2025)	
Papers:	200	
Citations:	57464	
Cites/year:	11492.80	
Cites/paper:	287.32	
Cites/author:	19916.89	
Papers/author:	73.13	
Authors/paper:	3.52	
h-index:	135	
g-index:	200	
hI,norm:	76	
hI,annual:	15.20	
hA-index:	72	
Papers with ACC >= 1,2,5,10,20:	200,200,200,199,188	

Picture 2. Data by process : Publish or Perish

The results of the search, review, and tracking of articles using Publish Or Perish (PoP) using the keyword Blockchain obtained 200 articles from the year 2020 - 2025. From the results, there are a total of citations 57464, while the annual citations amount to 11,492.80 and cites per article approximately 287,32 articles cited by the authors. Meanwhile, citations/author are 19916,89 and papers/author are 73,13, resulting in an average citation per author reaches 3,52.

Research topics that are current issues based on International accredited journals with data produced and can be developed in the following research:

No	Author	Journal	Topic
1	Almadadha, Rula	<i>Blockchains</i> journal	Blockchain Technology in Financial Accounting
2	Bakare, F. A., Omojola, J., & Iwuh, A. C	World Journal of Advanced Research and Reviews	Blockchain and decentralized finance (DEFI)
3	Christianah Pelumi Efunniyi Edith Ebele Agu Angela Omozele Abhulimen	International Journal of Management & Entrepreneurship Research	Blockchain Technology in Accounting
4	Javaid, Mohd Haleem, Abid	BenchCouncil Transactions on Benchmarks, Standards and Evaluations	Blockchain Technology in Financial services

	Singh, Ravi Pratap Suman, Rajiv Khan, Shahbaz		
5	Muhammad Talha	Dandao Xuebao/Journal of Ballistics	Blockchain in Accounting
6	Kukman, Tomaž Gričar, Sergej	FinTech	Blockchain in Financial system
7	Philip Olaseni Shoetan  Babajide Tolulope Familoni	International Journal of Management & Entrepreneurship Research	Blockchain in Financial security
8	Sedlmeir, Johannes Lautenschlager, Jonathan Fridgen, Gilbert Urbach, Nils	Electronic Markets	Blockchain in organizations

Picture 3. Table Sample

The results support the literature that blockchain can significantly enhance both transparency and reliability in financial reporting. As highlighted by Javaid, blockchain's immutable ledger ensures that every transaction is permanently recorded and traceable, aligning with the observed improvements in audit efficiency and reduced fraud in this study.[10]

The enhanced transparency results from the decentralized nature of blockchain, which enables all participants to view transactions simultaneously. This reinforces the findings of Almadadha who argued that blockchain reduces information asymmetry in financial reporting.[11]

In terms of reliability, blockchain provides verifiable and tamper-proof data, fulfilling the criteria for trustworthy financial information. This is especially valuable in high-stakes environments such as publicly traded companies, where data integrity is critical.[12]

Furthermore, cost and time efficiency gains align with Kukman and Gricar prediction that blockchain could streamline financial operations by reducing redundancy and automating verification tasks. [13]. Smart contracts, as used by the organizations studied, allowed for real-time financial commitments and internal control enforcement, minimizing delays and errors.

However, the study also confirms known implementation barriers, such as the technological complexity of blockchain systems, as discussed by Philip and Babajide. Integration with legacy systems remains a critical issue, along with the lack of globally accepted regulatory standards, which hinders broader adoption.[14]

This study's identification phase concentrated on assessing how blockchain technology might affect important facets of financial reporting, such as efficiency, dependability, transparency, and recognized implementation challenges. Google Scholar, Scopus, and Web of Science were among the scholarly databases used in a thorough search. Blockchain, financial reporting, transparency, audit

reliability, cost effectiveness, smart contracts, information asymmetry, integration difficulties, and regulatory issues were among the keywords. To guarantee relevance and currency, the literature review was restricted to peer-reviewed publications released between 2022 and 2025.

The screening process used particular inclusion and exclusion criteria. The inclusion criteria for articles were peer-reviewed, published within the allotted time, and focused on the use of blockchain technology in financial institutions, specifically in relation to results like operational efficiency, transparency, and dependability. Excluded studies included only opinion-based content without supporting data or non-financial blockchain applications.

In the eligibility phase, five key studies were selected for detailed analysis: Javaid et al. [10], Almadadha [11], Muhammad Talha [12], Kukman and Gričar [13], and Philip Olaseni Shoetan and Babajide Tolulope Familoni [14]. These articles collectively provided a robust foundation for understanding blockchain's transformative role in financial reporting.

Data extraction revealed four major thematic areas. First, transparency was found to be significantly enhanced through blockchain's decentralized and immutable ledger system, which facilitates real-time access and reduces information asymmetry [11]. Second, the reliability of financial information improved due to blockchain's ability to provide verifiable and tamper-proof data [12]. Third, efficiency gains were observed through the deployment of smart contracts, which automated verification processes and reduced both time and cost [13]. Finally, despite these benefits, the studies also underscored several barriers to implementation, including technological complexity, challenges in integrating with legacy systems, and the absence of universally accepted regulatory standards [14].

After combining the findings, it was evident that blockchain technology has a lot of potential to improve financial reporting procedures. The results provide credence to the idea that blockchain enhances audit effectiveness, lowers fraud risk, and fortifies internal controls. The report also affirms that resolving current technical and regulatory issues is still necessary for broad adoption. These observations are consistent with and support previous research, highlighting blockchain's dual character as a disruptive and transformative technology in the financial industry [15].

## 5. Conclusion

The implementation of blockchain technology in financial reporting has shown to significantly improve transparency, reliability, and operational efficiency. While current results are promising and align with existing academic literature, widespread adoption is still limited by integration challenges and regulatory ambiguity. Future research and policy development should focus on creating scalable frameworks, interoperability standards, and clearer regulatory guidance to enable the broader adoption of blockchain in financial reporting.

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