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The Role of Blockchain Technology in Increasing Economic Transparency and Public Trust

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A B S T R A C T

Blockchain technology has become one of the most promising technological innovations in recent years. The main advantages of blockchain technology are high transparency, security, and data integrity. Therefore, this technology has attracted attention in various sectors, including the economy. This research aims to examine the role of blockchain technology in enhancing economic transparency and public trust. This study is a literature review that adopts a qualitative method, which means it will analyse and interpret data by utilising information and texts derived from various sources. The results of the study show that blockchain technology has proven itself to be a highly effective tool for achieving this goal. In an increasingly connected and data-dependent society, economic transparency and public trust are key factors in sustainable economic growth and social stability.

A B S T R A K

Teknologi blockchain telah menjadi salah satu inovasi teknologi paling menjanjikan dalam beberapa tahun terakhir. Keunggulan utama dari teknologi blockchain adalah transparansi, keamanan, dan integritas data yang tinggi. Oleh karena itu, teknologi ini telah menarik perhatian dalam berbagai sektor, termasuk ekonomi. Penelitian ini bertujuan untuk menelaah peran teknologi blockchain dalam meningkatkan transparansi ekonomi dan kepercayaan Masyarakat. Studi ini adalah sebuah tinjauan pustaka yang mengadopsi metode kualitatif, yang berarti akan melakukan analisis dan penafsiran data dengan memanfaatkan informasi dan teks yang berasal dari berbagai sumber. Hasil studi menunjukkan bahwa teknologi blockchain telah membuktikan dirinya sebagai alat yang sangat efektif untuk mencapai tujuan ini. Dalam masyarakat yang semakin terhubung dan tergantung pada data, transparansi ekonomi dan kepercayaan masyarakat adalah faktor kunci dalam pertumbuhan ekonomi yang berkelanjutan dan stabilitas sosial.

1. INTRODUCTION

Over the past few years, blockchain technology has unmistakably ascended to the forefront, emerging as one of the most promising and groundbreaking technological innovations of our time. At its core, this paradigm-shifting system is firmly rooted in the fundamental principle of decentralization, a concept that empowers it to securely record and encrypt transactions and data within a meticulously interconnected network of blocks. What truly sets blockchain apart from conventional systems are its inherent strengths, including but not limited to its unmatched transparency, formidable security measures, and unwavering commitment to upholding data integrity at the highest levels. These extraordinary attributes have not only thrust blockchain technology into the limelight but have also elicited profound interest and enthusiasm from an array of industries and sectors. Its far-reaching influence extends its tendrils into numerous domains, most notably making a substantial and lasting impact on the vast landscape of economics. As blockchain continues to evolve and mature, its transformative potential and capacity to reshape industries remain a subject of fascination and exploration for innovators and experts alike (Frizzo-Barker et al., 2020).

In this era of rapid digital evolution, there is a growing and pressing need for a nation's economy to prioritize and uphold an elevated standard of transparency within its financial framework (Hermansyah,

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2023; Salamah, 2023; Suherlan, 2023; Sukenti, 2023; Sutrisno, 2023), while simultaneously nurturing the confidence of the public in the institutions and processes that govern its economic activities. It is indeed unfortunate that, in tandem with the remarkable progress in technology, a myriad of challenges has surfaced, spanning a spectrum from concerns over data security to instances of transaction manipulation, and even the lingering shroud of opacity that occasionally cloaks economic procedures. This multifaceted predicament serves as a stark reminder of one of the most pivotal rationales for the unparalleled relevance of blockchain technology in this contemporary landscape. The advent of blockchain offers a transformative solution to these complex issues, promising a renewed sense of trust, accountability, and transparency in the financial and economic realms (De Filippi et al., 2020). Through its decentralized and tamper-resistant ledger, blockchain not only addresses the challenges at hand but also provides a compelling path toward a future where transparency is a cornerstone of economic resilience and trust.

Previous studies have shown that blockchain has great potential in increasing economic transparency and strengthening public trust. Blockchain technology serves as a transformative enabler, facilitating the perpetual and immutable recording of every transaction within meticulously secured and interlinked blocks (Ducas & Wilner, 2017). This remarkable and unparalleled capability ensures that each transaction is not merely etched in stone but is also impervious to alteration, forging an indelible record that withstands the test of time. This inherent feature opens the gateway to a realm of unparalleled accessibility and verification, welcoming anyone with the curiosity and the intent to scrutinize transactions with open arms. As a result, it engenders an exceptionally heightened level of transparency that transcends conventional norms. Yet, it is essential to grasp that the transparency achieved through the utilization of blockchain transcends mere functionality; it metamorphoses into a defining hallmark of the technology itself. This hallmark, in turn, triggers a profound transformation in the landscape of transaction authentication and data verification, challenging established norms and erecting an unassailable standard for accountability and trustworthiness in the digital epoch (Wanof, 2023). Blockchain's indomitable presence heralds a new era where the foundations of trust are built upon a robust framework of transparency and immutable records, redefining the way we interact with data and transactions in the digital age.

Blockchain technology, with its robust capabilities, serves as the foundational bedrock for the development and implementation of smart contracts (Taherdoost, 2023). These smart contracts, a hallmark of innovation, operate in an autonomous fashion, springing into action and executing predefined actions the moment specific conditions are met. Such a dynamic and self-executing mechanism introduces a revolutionary dimension to the landscape of economic agreements and transactions. This innovative feature, embedded within blockchain-based smart contracts, serves as a formidable safeguard against the lurking threats of fraudulent activities and nefarious manipulations that can sometimes plague traditional economic agreements. By virtue of their self-execution, smart contracts engender a heightened level of security, dependability, and trustworthiness in every facet of economic transactions and contractual arrangements. In doing so, they redefine and elevate the standards of integrity and transparency in the ever-evolving realm of financial and contractual interactions, forging a path toward a more secure and trustworthy economic future.

Within specific sectors, notably logistics and the food industry, blockchain technology emerges as a transformative and potent instrument, bestowing upon stakeholders the remarkable capability to meticulously trace the intricate journey of products right from their initial stages of production to the ultimate destination in the hands of discerning end consumers (Allioui & Mourdi, 2023). This seamless and all-encompassing tracking paradigm serves a dual purpose: it not only acts as an impervious shield ensuring the security and uncompromised quality of the products but also, perhaps more significantly, establishes an unwavering and robust system of accountability and transparency that pervades every nook and cranny of the entire supply chain. The profound potential of blockchain technology, when harnessed within these sectors, extends far beyond the mere preservation of product integrity. It serves as a beacon of trust, illuminating the path toward a future where consumers can rest assured in the knowledge that their chosen products have undergone stringent scrutiny and have been subjected to airtight quality control measures at every juncture of their journey. In essence, this transformative utilization of blockchain not only safeguards the reputation and commitment of stakeholders to delivering top-tier quality and safety but also bolsters their dedication to fostering an environment of trust and confidence among the discerning and conscientious consumer base they serve.

Blockchain-based cryptocurrencies, exemplified by prominent examples such as Bitcoin and

Ethereum, have orchestrated a profound transformation in the landscape of financial transactions and payment methods (Habib et al., 2022). These digital currencies have unfurled an entirely new paradigm, one that stands as a beacon of security and transparency when juxtaposed with the conventional and often convoluted framework of traditional banking systems. In essence, cryptocurrencies have ushered in a brave new world where financial transactions are conducted with heightened levels of security and transparency. This transformative shift reimagines the very essence of how money is moved, stored, and managed, offering a compelling alternative to the established norms of the traditional banking sector. As a result, individuals and businesses alike are presented with an enticing opportunity to partake in a more secure and transparent financial ecosystem, one that aligns with the ethos of the digital age and bolsters confidence in the fundamental principles of monetary exchange.

Blockchain technology additionally empowers individuals to securely and transparently secure ownership of digital assets, much like the way traditional assets such as land titles or copyrights are safeguarded (Faturahman et al., 2021). This groundbreaking capability not only revolutionizes the management of digital assets but also redefines the concept of ownership in the digital age. Through the immutable and decentralized nature of blockchain, individuals can establish unassailable proof of ownership for their digital assets, be it virtual real estate in the form of non-fungible tokens (NFTs) or digital intellectual property. This transformational shift transcends the constraints of physical boundaries and conventional bureaucratic processes, allowing for a seamless and globally recognized system of asset ownership verification. As a result, blockchain technology offers a transformative solution that not only enhances the security of digital assets but also introduces a level of transparency and accessibility that was hitherto unimaginable, heralding a new era in the management and protection of digital ownership rights (Hasan & Salah, 2018).

However, notwithstanding its immense potential, the implementation of blockchain technology within the economic landscape also presents its fair share of challenges and associated risks. These challenges encompass regulatory concerns, issues related to scalability, and a prevailing limited understanding of the technology among the general populace. Consequently, conducting further research into the role of blockchain technology in enhancing economic transparency and bolstering public trust assumes a paramount importance. In essence, delving deeper into the implications and intricacies of blockchain technology in the context of economic welfare is essential for gaining a comprehensive understanding of both its potential and limitations. By doing so, we can better grasp how this technology can contribute to the improvement of economic well-being for society at large. This research not only aids in identifying and mitigating the potential pitfalls but also sheds light on the opportunities that lie ahead, offering a clearer path towards harnessing the full potential of blockchain technology as a catalyst for economic prosperity and societal advancement.

This research endeavors to undertake a comprehensive analysis, delving deeper into the multifaceted applications of blockchain technology across various sectors of the economy, with the primary aim of enhancing transparency. Additionally, it seeks to explore how these transformative changes can potentially influence the public's perception and trust in the existing economic systems. In tandem with examining the potential benefits, this study will also rigorously consider the inhibiting factors that may impede the seamless integration of blockchain technology. Furthermore, it will contemplate and formulate strategies for the effective implementation of blockchain, aimed at maximizing its utility and impact within this context. In essence, this research serves as a pivotal step towards unraveling the full spectrum of possibilities that blockchain technology brings to the table in terms of enhancing transparency within economic sectors. By shedding light on both its potential advantages and the challenges that must be addressed, this study will not only contribute to our collective understanding of blockchain's role in shaping modern economics but also provide valuable insights into how we can harness its capabilities to optimize economic systems and bolster public trust.

2. THEORETICAL FRAMEWORK AND HYPOTHESES

Blockchain Technology

Blockchain technology is a system designed to record transactions and data in interconnected and secure blocks (Faturahman et al., 2021). It serves as the underlying technology for various cryptocurrencies like Bitcoin, but its applications have extended beyond digital currencies. Blockchain technology enables high levels of transparency, security, and data integrity (Iskamto & Juariyah, 2023). Here are some key concepts that detail what blockchain technology entails:

1. Decentralization: Fundamentally, blockchain is a distributed digital ledger across a network of connected computers (nodes). There is no single authority that controls or manages this data. This means that no

single entity or party has full control over the blockchain. Decisions in the network are typically made collectively by the majority of participants.
2. Blocks: Transaction data is collected into blocks at specific time intervals. Each block contains a set number of transactions, and once a block is full, the next block begins to fill up. Each block has a reference to the previous block, creating an interconnected chain of blocks known as the "blockchain."
3. Security: Information within each block is cryptographically encoded and permanently recorded. This makes the data within it extremely resistant to manipulation or alteration once it's recorded. This security is based on robust mathematical concepts and cryptographic keys.
4. Transparency: The entire blockchain can be accessed and viewed by all participants in the network. While all transactions are recorded, individual identities are protected using cryptographic addresses in place of personal information.
5. Smart Contracts: Smart contracts are programs executed automatically when specific conditions are met. They operate on top of the blockchain and can be used to automate various types of agreements and transactions, including payments, product deliveries, or insurance claim processing.
6. Cryptocurrency: Many blockchains, such as Bitcoin and Ethereum, create digital currencies that can be used for transactions within the network. These currencies are not dependent on central banks or traditional financial institutions.
7. Trust: With high levels of security and transparency, blockchain technology contributes to increased trust in transactions and business processes. It reduces the risks of fraud, data manipulation, or deception.
8. Diverse Applications: Apart from cryptocurrencies, blockchain technology has been applied in various sectors, including logistics, supply chain, healthcare, finance, and more. This offers the potential to enhance efficiency, accuracy, and transparency across multiple industries.

In general, blockchain technology enables secure, immutable, and transparent transaction records, eliminating the need for intermediaries and unlocking significant innovation potential across various fields. This makes it one of the most significant technological innovations in recent years.

Economic Transparency

Economic transparency refers to the level of openness and visibility of information related to the economic activities of a country, company, or other economic entities (Gardner et al., 2019). It encompasses providing clear, open, and easily accessible data, information, and processes to all stakeholders, such as governments, investors, consumers, and the general public. The primary objective of economic transparency is to create an environment where all involved parties can understand, monitor, and make informed decisions based on accurate information (Schnackenberg & Tomlinson, 2016). Here are some essential components of economic transparency:

1. Financial Information: This includes the publication of complete and accurate financial reports by companies, including balance sheets, income statements, and cash flow statements. This information should enable stakeholders to understand the financial health of the company.
2. Public Policy: Governments should provide open and understandable access to economic policies, regulations, and laws that impact economic activities within society.
3. Market Transparency: Transactions and prices in economic markets, such as stocks, bonds, and commodities, should be open and easily accessible to all market participants. This helps investors and traders make decisions based on accurate information.
4. Corporate Governance Information: Companies should disclose information about their corporate structure, board composition, and corporate governance practices. This ensures that companies are run in a transparent and accountable manner.
5. Transparency in Contracts and Agreements: Business contracts and agreements between various economic parties should be disclosed clearly and transparently, so all involved parties understand their rights, obligations, and risks.
6. Open Access to Public Data: Economic data, such as national economic data, labor statistics, and inflation data, should be available to the public and other stakeholders to monitor economic performance.

Benefits of economic transparency include:

1. Building Trust: Transparency helps build trust among governments, businesses, investors, and the public. High levels of trust can encourage investment and sustainable economic growth.

2. Reducing Corruption: By enabling better monitoring and oversight, transparency can reduce the risk of corruption and illicit activities in economic activities.
3. Facilitating Investment: Investors are more comfortable investing in a transparent environment where risks and opportunities are more visible.
4. Improving Market Efficiency: Transparent markets with readily available information can improve resource allocation and economic decision-making.
5. Enhancing Knowledge and Education: Accessible economic information can contribute to public education and understanding of economic aspects affecting their lives.

In conclusion, economic transparency is a key principle in developing and maintaining a healthy and sustainable economy. It helps create an environment that is fair, secure, and open to all parties involved in economic activities.

Public Trust

Public trust is the positive belief and confidence that individuals or groups hold toward a specific entity, such as a government, company, organization, or individual (Pirson et al., 2019). This trust is based on the expectation that the trusted entity will act honestly, fairly, and competently in its interactions or services to the public. Public trust includes the belief that the entity will fulfill promises, safeguard secrets, and behave in accordance with accepted ethical standards (Resnik, 2011). Here are some essential elements of the concept of public trust:

1. Positive Belief: Public trust is a positive belief that the trusted entity will act in the best interest of the public or stakeholders.
2. Confidence in Reliability: Trust often involves the confidence that the entity will consistently and reliably carry out its duties and responsibilities without disappointment.
3. Trust in Honesty: Trust hinges on the belief that the entity will act honestly and with integrity, avoiding behavior that is harmful or unethical.
4. Transparency: Transparency in actions and communication is a crucial factor in building and maintaining public trust. Open and honest communication fosters trust.
5. Managing Uncertainty: While the entity may not always meet public expectations perfectly, it's important to manage uncertainty honestly and communicate openly about challenges or constraints.
6. Confidentiality and Privacy: Maintaining confidentiality and respecting privacy are essential elements of trust, especially when handling sensitive information.
7. Risk and Benefit Consideration: Public trust often involves weighing the risks and benefits of interactions with the trusted entity before deciding how much trust to place in it.

Public trust has significant implications in various social, economic, and political aspects. Here are some positive impacts of public trust:

1. Social Stability: High levels of public trust contribute to social stability because people are more cooperative and less likely to engage in damaging behaviors or conflicts.
2. Economic Progress: In a business context, trust from consumers and investors is a crucial factor in economic progress. High trust can boost investment and consumption.
3. Collaboration: Public trust fosters better cooperation in various contexts, from interpersonal relationships to cross-border collaborations in trade and diplomacy.
4. Government Legitimacy: Governments that are perceived as trustworthy are more likely to gain public support and find it easier to implement policies and reforms.

The loss of public trust can have serious consequences, including social instability, reduced investment, and an entity's inability to achieve its goals. Therefore, building and maintaining public trust is a crucial aspect of various aspects of life and organizations.

3. RESEARCH METHOD

This research is a qualitative literature review that gathers, evaluates, and integrates existing knowledge on blockchain technology's role in enhancing economic transparency and public trust. Data is collected from various sources like journals, books, documents, and articles spanning 2011 to 2023. Using a qualitative approach, we explain complex subjects, include multiple sources and viewpoints, and identify patterns. This approach allows us to gain deep insights and check source credibility while acknowledging limitations. Our goal is to provide a comprehensive overview and recommendations for future research.

4. DATA ANALYSIS AND DISCUSSION

In the continually evolving landscape of the digital age, the centrality of concerns related to transparency and trust within the intricate web of the economic ecosystem has ascended to unprecedented prominence. Against this backdrop, the emergence of blockchain technology looms as a potent catalyst capable of ushering in profound transformations and paradigm shifts engineered explicitly to comprehensively address these pressing challenges. As we delve deeper into the discourse that lies ahead, we shall embark on a far-reaching and enlightening exploration, one that underscores the pivotal and multifaceted role assumed by blockchain technology. Not only does it serve as a tool for augmenting the transparency of economic processes, but it also stands as a linchpin in the cultivation and fortification of trust among the broader populace in these critical systems. In doing so, it lays the foundation for a more resilient and dependable economic landscape, reshaping the contours of our economic future.

Economic transparency serves as a cornerstone in the construction of a society's shared prosperity, underpinning the very foundation of societal well-being (Mensah, 2019). When the economic framework of a nation or entity embraces transparency, it signifies a commitment to making information regarding economic activities, encompassing aspects such as finances, regulations, and policies, easily comprehensible and readily accessible to all stakeholders (Saraite-Sariene et al., 2019). This engenders an environment wherein economic activities can be subjected to rigorous scrutiny, assessment, and evaluation by every relevant party involved. The significance of such a transparent ecosystem extends far beyond the mere revelation of financial data; it is a catalyst for a multitude of positive outcomes. Foremost, it promotes unwavering accountability, compelling entities to operate with the highest ethical standards, as their actions are open to public scrutiny. Moreover, it ensures that decision-making processes are not shrouded in obscurity but rather are rooted in accurate, complete, and up-to-date information. In this context, transparency becomes a powerful tool for informed governance and policymaking, fostering an environment of trust among citizens, investors, and institutions alike. By allowing for the collective examination and understanding of economic intricacies, it fortifies the social contract and strengthens the bonds of trust within society (Auliah et al., 2022). Furthermore, the benefits of economic transparency ripple through various sectors, from financial markets to social services (Ausat, 2023; Azzaakiyyah, 2023). It enables investors to make well-informed choices, mitigating risks and enhancing economic stability. It empowers citizens to actively engage in shaping economic policies that align with their values and aspirations. It bolsters the efficiency of public services, ensuring that resources are allocated judiciously to address pressing societal needs. Economic transparency is not merely a passive disclosure of financial information; it is an active commitment to the principles of openness, accountability, and informed decision-making (Ortega-Rodríguez et al., 2020). It is a potent instrument for fostering the overall well-being and prosperity of the community at large, a testament to the power of transparency in creating a fair, just, and prosperous society.

Blockchain technology, with its principles of decentralization and inherent security, makes substantial contributions to the attainment of economic transparency through a variety of means (Friedman & Ormiston, 2022). For instance, blockchain serves as a distributed digital ledger across interconnected networks. Each transaction entered into the blockchain is immutable and irrevocable, forging an unbroken and unaltered transaction history, thereby ensuring the integrity of economic data. This foundational characteristic of blockchain not only guarantees the veracity of financial records but also introduces a robust layer of accountability into economic systems. The decentralized nature of blockchain means that no single entity has exclusive control over the ledger, preventing the manipulation or tampering of data. This fosters a heightened level of trust among participants in the economic ecosystem, as they can rely on the transparency and incorruptibility of the blockchain. Moreover, blockchain's transparency is augmented by its accessibility. Participants in the network can access the blockchain to view transaction history and verify the authenticity of data without intermediaries (Bidry et al., 2023). This accessibility democratizes information and empowers individuals, making economic processes more inclusive and participatory. Furthermore, the traceability inherent in blockchain technology enables efficient auditing and monitoring of economic activities. Auditors and regulatory bodies can track transactions in real-time, ensuring compliance with financial regulations and policies. This real-time oversight reduces the likelihood of fraudulent activities and fosters a climate of compliance. Additionally, blockchain facilitates the development of smart contracts, self-executing agreements with predefined rules (S. N. Khan et al., 2021). These contracts automatically execute and enforce the terms of an agreement when predetermined conditions are met. This not only reduces the need for intermediaries

but also enhances transparency by providing a clear and tamper-proof record of contractual agreements and their execution. In essence, blockchain technology's alignment with decentralization and security principles lays a solid foundation for achieving economic transparency. It establishes an unalterable record of economic transactions, fosters trust through its inherent security features, and empowers stakeholders by granting them direct access to economic data. In doing so, blockchain technology plays a pivotal role in advancing the cause of transparency in our ever-evolving economic landscape.

Blockchain also facilitates open recording of prices and transactions across various markets, including stock and commodity markets. This capability empowers investors and traders to make informed decisions based on accurate information. Furthermore, this technology supports smart contracts, which execute automatically according to predefined rules, eliminating the potential for fraud or manipulation in economic agreements, as all actions are recorded in verifiable code. The utilization of blockchain in market pricing and transaction recording serves as a pivotal advancement in modern financial systems (Ata et al., 2023). By leveraging its transparent and immutable ledger, blockchain ensures that pricing information and transaction data are openly accessible to all participants in the market (Xia et al., 2023). This transparent pricing mechanism provides investors with real-time, unaltered data that is critical for making investment decisions. In the realm of smart contracts, blockchain technology introduces a revolutionary approach to executing agreements. Smart contracts are self-executing contracts with predefined conditions and outcomes. These contracts are stored on the blockchain, and when the specified conditions are met, they execute automatically without the need for intermediaries. This not only streamlines the execution process but also ensures that all parties involved can trust the contract's outcome, as it is determined by a tamper-proof code. The implementation of smart contracts in economic agreements has profound implications for mitigating fraudulent activities and enhancing trust (Xiong & Wan, 2023). Traditional agreements often rely on intermediaries to oversee and enforce terms, which can introduce delays and the potential for human error (Nolden et al., 2016). With smart contracts, these issues are minimized, as the code enforces the terms automatically and transparently. This reduces the risk of disputes and fosters a climate of reliability and predictability in economic interactions. Moreover, blockchain's capability to provide an auditable and unalterable history of transactions and contract executions is invaluable for regulatory bodies and auditors. They can access the blockchain to verify the compliance of market participants with financial regulations and monitor the execution of contracts in real time. This real-time oversight enhances the integrity of financial markets and reduces the potential for misconduct. Blockchain technology's impact on market pricing, transaction recording, and the implementation of smart contracts is transforming the way economic agreements are conducted. It empowers market participants with accurate and transparent data, reduces the potential for fraud and manipulation, and enhances trust and accountability. As blockchain continues to evolve and find new applications, its role in promoting economic transparency and efficiency will only become more pronounced.

Furthermore, in industries such as logistics and food, blockchain is harnessed to trace the origin of products from manufacturers to end consumers, thereby enhancing transparency within the supply chain and ensuring the safety and quality of products. The application of blockchain in the context of supply chains is transformative (Kabir et al., 2021). By recording every step of a product's journey on an immutable ledger, it becomes possible to retrieve a comprehensive history of the product's production, transportation, and handling. This transparency not only provides consumers with valuable information about the products they purchase but also enables companies to rapidly trace and resolve any issues that may arise, such as contamination or recalls. In the food industry, for instance, blockchain technology can track the provenance of ingredients used in a particular product (Garrard & Fielke, 2020). This capability assures consumers that the food they consume meets rigorous quality and safety standards, reducing the risks associated with consuming contaminated or counterfeit products. It also allows for swift responses in case of foodborne outbreaks or other safety concerns, as the source of the problem can be pinpointed with accuracy. Likewise, in the logistics sector, blockchain's transparent tracking capabilities play a crucial role in optimizing the movement of goods. Supply chain managers can monitor the real-time location and condition of products, improving efficiency and reducing losses due to theft or spoilage. This heightened visibility not only streamlines operations but also builds trust among stakeholders, as they have access to verifiable data about the status and handling of goods throughout their journey. Furthermore, blockchain's tamper-proof records provide a robust foundation for compliance with industry regulations (Alajlan et al., 2023). It simplifies the auditing process, as regulators can access a complete and unalterable history of product movements and quality assur-

ance measures. This streamlining of regulatory oversight benefits both companies and consumers, as it ensures that products adhere to the highest standards of safety and quality. In essence, blockchain's utilization in sectors like logistics and food not only bolsters transparency but also enhances security, accountability, and the overall quality of products. It represents a pivotal shift in how we ensure the safety and reliability of goods within complex supply chains, ultimately benefiting both businesses and consumers.

Public trust is a crucial element in establishing a strong foundation for economic and social well-being (Pirson et al., 2019). It pertains to the belief held by individuals and groups in the ability of specific entities, such as governments or corporations, to act with honesty, fairness, and competence. Blockchain technology significantly contributes to the construction and preservation of this trust in various ways, including through secure and encrypted data storage, ensuring that personal and sensitive information is well-protected (Huang et al., 2020). The concept of public trust extends beyond mere confidence; it encompasses the assurance that one's interests and rights are safeguarded in dealings with these entities. In this context, blockchain serves as a vital pillar in reinforcing this assurance. By its very design, blockchain operates on the principles of transparency and security, instilling a sense of reliability in the information and transactions it records. One of the key ways blockchain enhances public trust is through its secure data storage mechanisms. Data stored on the blockchain is cryptographically secured and immutable, making it exceptionally resistant to unauthorized alterations or breaches (Politou et al., 2021). This ensures the integrity and confidentiality of personal and sensitive information, which is especially critical in an era of increasing cyber threats and data breaches. Moreover, blockchain empowers individuals to have greater control over their own data (Stockburger et al., 2021). Through decentralized identity systems built on blockchain, individuals can manage and share their personal information as needed, without relying on central authorities. This not only protects privacy but also gives users more agency over how their data is used and shared, further bolstering trust in digital interactions. Furthermore, the transparency of blockchain transactions fosters trust by allowing participants to independently verify the accuracy and authenticity of data (Akram & Bross, 2018). Whether it's a financial transaction or a supply chain record, the transparency inherent in blockchain ensures that all relevant parties can scrutinize and confirm the validity of the information. Additionally, blockchain's ability to create tamper-proof records and smart contracts that automatically execute predefined actions enhances the predictability and fairness of economic transactions (Lin et al., 2022). This predictability reduces the potential for disputes and disputes, reinforcing trust in agreements and exchanges. In summary, blockchain technology plays a pivotal role in the cultivation and maintenance of public trust. Its secure data storage, user-centric identity management, transparency, and automation mechanisms combine to create an environment where individuals and organizations can interact with confidence. This, in turn, forms a solid foundation for economic and social prosperity, where trust in digital interactions is a cornerstone of a thriving and secure society.

Furthermore, blockchain not only enables individuals to securely establish ownership of digital assets, such as land certificates or copyrights, but it does so in a manner that is both secure and transparent, fostering an environment of trust and reducing the likelihood of fraud and ownership disputes (Gad et al., 2022). In this context, blockchain acts as a transformative tool that empowers individuals and organizations to establish and protect their rights to various forms of digital property. For instance, within the realm of property rights, blockchain technology can facilitate the creation of immutable records for land titles, making it virtually impossible for fraudulent land claims to occur. Similarly, in the world of intellectual property, blockchain can securely timestamp and verify the ownership of creative works, providing artists and creators with indisputable proof of their rights. Moreover, governments that leverage blockchain technology for policy data management and the delivery of public services can build trust among their constituents by ensuring that their policies and decisions are based on accurate and transparent information (S. Khan et al., 2022). The security and immutability of data within the blockchain reduce the risk of fraudulent manipulation of information in various contexts, including elections, healthcare services, and public fund management (Taş & Tanrıöver, 2020). In the electoral context, blockchain can enhance the integrity of the voting process by ensuring that each vote is securely recorded and tamper-proof, minimizing the potential for electoral fraud. In healthcare, blockchain's secure data sharing can facilitate the safe and transparent exchange of patient records, improving the quality of care while preserving patient privacy. Additionally, in the realm of public fund management, blockchain's transparency and accountability features can help prevent embezzlement or misuse of taxpayer money, reinforcing public trust in government agencies. Blockchain's multifaceted applications extend beyond secure data management and ownership verification (Casino et al., 2019). It provides

a powerful tool for enhancing trust and security across various sectors, from property rights and intellectual property to government services and public accountability. By leveraging blockchain technology, individuals, organizations, and governments can establish a more secure, transparent, and trustworthy environment for both digital asset ownership and public services.

With the maturation and widespread adoption of blockchain technology, the future of economic transparency and public trust appears exceedingly promising. In an era where information is akin to power, blockchain serves as a robust instrument ensuring that economic information and policies can be readily accessed and securely managed. This engenders a sense of optimism for the development of an economic system that is not only equitable but also secure and sustainable, one that can effectively meet the needs and aspirations of people around the world. In this transformative landscape, blockchain emerges as a cornerstone upon which trust and transparency are constructed. Its ability to create tamper-proof records, decentralized systems, and secure data storage mechanisms has the potential to redefine our notions of fairness and accountability within the global economy. With blockchain technology as a driving force, we envision an economic ecosystem that is not only transparent but also impervious to manipulation, fraud, and systemic vulnerabilities. As blockchain technology continues to evolve and innovate, we anticipate its pivotal role in reshaping the way we perceive, comprehend, and participate in the global economy. This evolution will likely extend beyond its current applications and usher in new paradigms that enhance the efficiency and inclusivity of economic systems. The ongoing advancement of blockchain offers the promise of a more interconnected and equitable world, where economic opportunities and information are accessible to all, irrespective of geographical boundaries or socioeconomic backgrounds. In the coming years, as we witness the unfolding impact of blockchain technology, we can anticipate the formation of novel economic structures and collaborative networks that harness its potential for the greater good. These developments will not only empower individuals and organizations but also foster an environment where trust and transparency are the cornerstones of economic progress. In conclusion, with blockchain technology on the horizon, the future of economic transparency and public trust is imbued with immense potential. It is a journey towards a more equitable, secure, and sustainable economic landscape, one that holds the promise of reshaping our global economic interactions and driving positive change on a scale that was previously unimaginable.

5. CONCLUSION, IMPLICATION, SUGGESTION, AND LIMITATIONS

Blockchain technology has proven itself to be an exceptionally effective tool in achieving these goals. In an increasingly interconnected and data-dependent society, economic transparency and public trust are key factors in fostering sustainable economic growth and social stability. The adoption of blockchain technology carries several significant implications. For one, it enhances trust by providing high transparency and data security, which helps build and maintain public trust in economic entities and governments. Additionally, it improves economic efficiency by reducing costs and time in various business processes, such as transaction verification, contract settlement, and supply chain monitoring.

Furthermore, blockchain technology fuels innovation in various sectors, including finance, logistics, and healthcare, opening new opportunities for business development and services. It also empowers the public to monitor government and business performance more effectively, generating positive pressure for the fulfillment of their needs and expectations. To maximize the benefits of blockchain technology in enhancing economic transparency and public trust, some practical recommendations include the need for better education and awareness among the public about blockchain technology and its benefits. Thoughtful and balanced regulations need to be developed to address issues such as security, privacy, and legal compliance in the use of blockchain technology. Collaboration between industries and governments is essential to develop consistent standards and widely acceptable frameworks for blockchain implementation. Finally, blockchain security must be a top priority, with efforts to identify and address vulnerabilities actively pursued.

Despite these advantages, it's important to acknowledge certain limitations. Scalability issues persist in some blockchains, making them inefficient for high-speed transactions. Additionally, the energy consumption associated with the consensus process in some blockchains, such as Bitcoin, raises concerns about environmental impact. Blockchain may not be suitable for all applications, necessitating the careful selection of use cases. Moreover, regulatory developments in various countries remain uncertain, which can affect the adoption of blockchain in various sectors. With a solid understanding of the benefits, limitations, and challenges associated with blockchain technology, we can take the appropriate steps to maximize its potential in creating a more open economy and building strong public trust. In this regard, blockchain can become a vital

tool in addressing transparency and trust issues in an increasingly complex digital era.

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