FEDPUKA JOURNAL OF SCIENCE, TECHNOLOGY AND CONTEMPORARY STUDIES
VOL 1 ISSUE 2, 2025

DYNAMICS OF BLOCKCHAIN TECHNOLOGY APPLICATION IN THE CONTEMPORARY FINANCIAL ISSUES

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Abstract

The study examined the dynamics of blockchain technology (BCT) application in the contemporary financial issues. The opinion paper utilizes secondary data sourced from well-known databases like Scopus, Web of Science, Google, etc. for getting quality research papers done in the field of Blockchain Technology Application in the Contemporary Financial Issues. The study revealed the application of blockchain technology in the various aspects of the economy like business, data management, financial institutions. On the financial issues, blockchain technology can easily mitigate corruption, financial fraudulent activities, manipulation of financial institutions, financial crimes. At the same time, BCT enhances through the immutability of the cryptography: transparency, accountability and security of financial transactions. The study recommended, including other things that financial regulatory institutions (like Central bank of Nigeria, Securities and Exchange Commission), legislators and financial stakeholders should collaborate to establish compliance standards and best practices for blockchain integration in financial system. These standards should ensure that BCT conform with regulatory requirements and ethical principles, while promoting transparency and accountability.

Keywords: ***Blockchain, Technology, Blockchain Technology, Financial Issues***

Introduction

Johnston (2024) told a myth about the origin of blockchain technology in Palau. According to him, the Yap islanders Rai (limestone) to ensure ownership was known and indisputable, an oral ledger, which was used within communities to maintain transparency and security. Rai do not strictly count as money, given the manner in which they were used. However, since they encapsulated value was used for transfer of value or to signal economic relationships between individuals who may or may not have been geographically proximate, these stones are commonly referred to as 'stone money'.

Rai were an ingenious ancient method of enabling trade and asset exchange between people living on distant islands. In the modern world of e-money and digital leapfrogs, Rai can be used to help conceptually understand the technological innovation provided by blockchain. Specifically, the concept of a digital currency is many decades old but only from the 2000s has encryption technology emerged, which makes the concept a feasible reality. A particular challenge was that there had been insufficient real-time comprehensive network or single locational reconciliation, one unit of currency could only be spent once at any point, known as the 'double spend' problem. The solution came from a 2008 paper titled 'Bitcoin: A Peer-to-Peer Electronic Cash System' by Satoshi Nakamoto, a pseudonym for an unknown individual or possibly a group (Johnston, 2024).

He further explained that the solution to the 'double spend' problem specifically came from blockchain, which has been explained as follows: A blockchain is a history of events (transactions or otherwise) that uses cryptography to link timestamped batches of events together in order to make it evident if tampering has occurred. This type of data structure enables the creation of new applications that use a blockchain as a trustworthy public database. The first major usage of a blockchain was in Bitcoin as a currency, but many non-payment applications are now being developed on top of Bitcoin and other systems such as Ethereum. Like Rai, blockchain offers a system that relies on 'a unified and continuous chain of information to ensure that the value is known and ownership indisputable', no matter the remoteness of related trade. As an analogue version of blockchain, Rai used oral ledgers 'solidified through social networks to create accurate and unbroken lines of communications so that economic relationships involving Rai could be established, maintained, exchanged, and rectified'. A new approach has since evolved from blockchain, in the form of tokenization (cf, Johnston, 2024).

However, the contemporary issues of Fourth Industrial Revolution (4IR) is characterized by the integration and control of production through the connectivity between equipment and sensors between the physical and the virtual world. This process generates enormous changes in the industry through technological developments such as increased productivity, autonomy, and redistribution of work. Together with artificial intelligence robots, machine learning and nanotechnology, one of the innovations available to industry 4.0 is the blockchain technology (BCT), which gave birth cryptocurrency and frontrunner of financial digital currency.

The first generation blockchain platforms that were developed was a display in the potential of the technology though it lacked the major features that might be used to sustain cases afar financial services applications. The key flaws were restricted throughput, slow transaction authentication, deferred settlement finality, no privacy and high energy consumption in mining. The second generation blockchain focused on building a flexible environment that could be used to maintain the operation of decentralized applications (Ugwu, Okeke & Ebisi, 2023). The major setback for this second generation blockchain was interoperability between different platforms, imperfect privacy, constrained throughput, (Bitcoin network-7 tps, Ethereum 15 tps, VISA 24,000 tps), interoperability, control, and sustainability. The third generation, which is based on the Directed Acyclic Graph (DAG) principle, presents enterprises with new prospects to implement Blockchain technology at a large scale due to its ability to overcome the flaws of the earlier generations. The major recompense is higher throughput which enables faster transactions (approx. 10,000 tps), interoperability eliminating sidled performance and enabling industry-wide implementations, enhanced security, very cost-effective, minor energy consumption due to miner-less operations, and improved sustainability. The third generation blockchain platforms were developed overcoming all the challenges of the earlier generation platforms (Ugwu et al, 2023).

Odeyemi, Okoye, Ofodile, Adeoye, Addy & Ajayi-Nifise (2024), opines that, in today's rapidly evolving digital landscape, ensuring security in financial services is paramount to safeguarding sensitive data, transactions, and assets. With the proliferation of digital transactions and the increasing sophistication of cyber threats, financial institutions are continuously seeking innovative solutions to enhance security and mitigate risks. One such solution lies in blockchain technology, which offers a transformative approach to bolstering security in financial services (Abdel-Rahman, 2023, Kafi & Akter, 2023). The blockchain (chain of blocks) is the emerging

technology that has gained popularity within few years (Romanello, 2021). It is a swiftly evolving financial technology that transforms the way transactions are being made (Eghe-Ikhurhe, Roni, Mandella & Xihui, 2023). With the spread of financial transactions on the internet, many people have elevated obligations for financial services, as posited by (Zhang, 2022). Financial technology is now an integral element of the overall growth of the financial industry.

On the other hand, it is essential to learn about Blockchain's benefits for the financial system and to research its prospective uses (Pandya, Mittapalli, Gulla, & Landau, 2019). With the rapid increase in knowledge and usage of the BCT, there has been lots of researches carried out to harness the usefulness of this technology (Anisiuba, 2020). As Blockchain is not a new concept in the financial issues, numerous studies (Dashkevich, Counsell, & Destefanis, 2020; O'Shields, 2017; Cocco, Pinna, & Marchesi, 2017; Guo, & Liang, 2016) have described the challenges and opportunities of implementing BCT in various financial issues. Financial industry participants see an opportunity to apply blockchain to their products and services and develop coordinated solutions that could help overcome existing industry challenges by providing greater transparency and improving conduct (Ducas, & Wilner, 2017).

Initially, blockchain served as the underlying infrastructure for cryptocurrencies such as bitcoin. Recently, numerous financial entities, including banks, private equity entities, startups, etc, are paying close attention to blockchain. After completing a transaction via blockchain technology, several prominent financial institutions are keen to incorporate it into their operations.

The various platforms used in blockchain are designed with an improved security system and lending network. The financial industry is now extremely reliant on technology, making BCT a potentially game-changing innovation. Although BCT is still in its theoretical beginnings, it has the potential to substantially disrupt the financial system (Ajayi, Madewa, Fatoye, & Oladipo, 2022). Sarmah (2018) posits that Bank and payment systems have started using blockchain to make their operations smoother, efficient and secure. Funds can be efficiently and safely transferred with the decentralization technology. Blockchain with its characteristics of decentralization, immutable records, persistency, anonymity, security, auditability, transparency, accuracy, verifiability and sharing of information has the potential of transforming financial issues in Nigeria.

There are fears that blockchain technologies in general and digital currencies will undermine human rights and allow governments and entities to unduly punish and control their citizens. However, these technological changes and shifts can also be used to empower individuals, societies, human rights and progress. Understanding the conceptual and technological shifts embodied in a digital currency is one challenge but, grasping the benefits from the financial standpoint is inevitable in the society (Johnston, 2024). Many studies have been conducted in this respect, but this paper wants to focus on the financial issues as regards to financial fraud, crimes, etc.

Review of Related Literature

Conceptual Review

Blockchain Technology (BCT) is a mechanism that employs an encryption method known as cryptography and uses (a set of) specific mathematical algorithms to create and verify a continuously growing data structure, to which data can only be added and from which existing data cannot be removed, which takes the form of a chain of "transaction blocks," which functions as a distributed ledger (Houben & Snyers, 2018).

Blockchian technology (BCT) is a distributed electronic ledger that records all the transactions that happen on a network of related computers through internet, similar to a relational database which keeps an unchangeable record of all transactions (blocks) i.e., a true and verifiable record of each and every transaction ever made in the network, no need for an administrator (Obiah & Akpelu, 2022).

A blockchain is essentially a public ledger, where groups of transactions or events are recorded and stored in a chain-like data structure (Simoyama, Grigg, Bueno, & Oliveira, 2017). As an automated ledger created to lock up transactions carried out by several parties in a network, BCT is an internet based, peer-to-peer, detached ledger which includes all transactions since creation (Ugwu et al, 2023**)**. BCT is a digitized distributed ledger technology and public ledger of all cryptocurrency transactions that utilizes a decentralized network of nodes that provide a level of trust (also known as consensus) instead of utilizing a third-party to verify transactions **(**Phan, Li, & Mentzer, 2019). The technology relies on cryptography as a means of security. A blockchain is defined as a distributed database (ledger) that maintains a permanent and tamper-proof record

of transactional data. More precisely, each node of the network maintains a copy of the ledger to prevent a single point of failure. All copies are updated and validated simultaneously (Hammi, Hammi, Bellot, & Serhrouchni, 2018). The blockchain ledger is composed of multiple blocks, and each block is composed of two parts. The first part represents the transactions or facts (that the database must store), which can be of any type such as monetary transactions, health data, system logs, traffic information, and so on. The second part is called the header and contains information about its block (Hammi, Zeadally, Adja, Giudice, & Nebhen, 2022).

BCT allows transactions to be recorded and added to the block in chronological order and keeps track of the digital currency transactions without central recordkeeping (Yun, 2020). Idehen and Mayor (2021), described a blockchain as essentially a digital ledger of transactions that is duplicated and distributed across the entire network of computer systems on the blockchain. Each block in the chain (nodes) contains a number of transactions that are linked together using cryptography and every time a new transaction occurs in the blockchain, a record of that transaction is added to every participant's ledger. For clarity, each block contains a cryptographic hash of the previous block, a time stamp and transaction data. The time stamp proves that the transaction data existed when the block was published in order to get into its hash. To this end, Anisiuba (2020), simply describe Blockchain as a chain of blocks that contains information. The data, which is stored inside a block, depends on the type of blockchain. The real purpose of blockchain is to address the problems of double records without need of a central server.

Theoretical Framework

Theory of Disruptive Innovation

Disruptive technology is a concept similar to some radical innovations, technological paradigms, technological regimes or path-breaking technologies analyzed in economics of innovation, which blockchain technology is one of them. But the theoretical framework of disruptive technologies does not explain the drivers of these path-breaking technologies (Christensen, 1997 in Coccia, 2017). However, the theory of disruptive innovation presents some intriguing inconsistencies, its core concepts remain widely misunderstood. Disruption theory is likely to occupy a prominent position on any assessment of relevance including financial issues. Many popular authors invoke disruptive innovation to describe any new technology or start up that aims to shake up an

industry and alter its competitive patterns; previously successful incumbents facing difficulties or going out of business are routinely said to have been disrupted (Christensen, McDonald, Altman & Palmer, 2018). Like other management theories, the theory of disruptive innovation began with an observation that generated a research question. Across industries ranging from computers to retail to steel, leading firms failed to remain dominant in their respective markets (Christensen et al, 2018).

Disruptive innovation inn financial issues consisted of three principal components. Firstly, the pace of technological progress in many industries outstrips customers' demand for high-performing technologies. Secondly, for entities, a strategically crucial distinction between different types of innovation, in technology or in business model can emerge in an industry. Most are sustaining innovations, which improves products and services along dimensions of performance that mainstream customers care about and that markets have historically valued; such innovations enable incumbents to sell more products to their best existing customers and established profit models constrain established firms' investment in new innovations, thus, investments unattractive to incumbents may be attractive to entrants who lack many (or any) customers and enjoy fewer competing investment opportunities (Christensen et al, 2018). Disruptive innovations were originally assumed to take root in the lowest tiers of established markets, but instances surfaced of entrants that appeared to be competing in entirely new markets. Also, vibrant debates have arisen around the theory of disruptive innovation, from the existence and prevalence of disruption, to the way it gets measured and assessed, to its applicability in different industries.

Therefore, the applicability in financial issues, the new ledger must be in tune with the trend in the financial reporting. Financial environmental and institutional dynamics, may extend the coexistence of competing technology regimes (Christensen et al, 2018). This study believed that no theory swiftly suits this topic of discussion like disruptive innovation theory. All the disruptive technologies including BCT are new innovations in various stages and areas of development and adoption, hence, the paper adopts it as a theoretical framework.

Empirical Review

Aliyev (2019), delves into the reliability of blockchain technology as a tool for anti-corruption. The author looks at how this tool can be utilized to reduce corruption in public administration.

The author adopted two-round Delphi Method, the author engaged the services of 17 blockchain experts to assess the potential of the blockchain, the benefits and barriers of blockchain technology in the anti-corruption process. The author addresses the research question of to what extent newly emerging blockchain can be implemented in anti-corruption activities.

Ikegwuru, and Nwokah (2022), examined the impact of block chain technology application on supply chain collaboration of energy companies in Rivers State of Nigeria. The population of the study consisted of 295 registered energy companies operating in Rivers State of Nigeria. To obtain the sample size, the Krejcei and Morgan's formula was used to determine a sample size of 169 Energy companies. The simple random sampling technique was used to obtain two (2) executives from each of the 169 companies under study, to turn up 338 management staff for the whole sample. A 4-point likert-scale structured questionnaire was distributed to the respondents, of which out of the 338 copies of structured questionnaire distributed, 246 copies accounting for 73% were retrieved from the respondents, and after data cleaning, 202 (82%) of the questionnaire were found useful for analysis. The analysis was carried out using the simple regression technique to test the hypotheses at 0.05 level of significance. The findings revealed that, BTC-enabled visibility strongly, positively and significantly influence supply chain collaboration. It was also, found that BTC-enabled traceability moderately, positively and significantly influences supply chain collaboration. The study therefore, concludes that blockchain technology application positively and significantly influences supply chain collaboration of energy companies in Rivers State.

Dinesh, Manoj and Anandh (2020) investigated blockchain technology in food supply chain security in India using the methods of information science, management science, system science and other theories and empirical research methods, chiefly by means of the PEST analysis, compare and exhibit studying the appliance of Blockchain in the food supply chain. It was established that, transactions are cryptographically secured by means of double SHA 256; Bit algorithm guarantee immutability, transparency, distributed and easy to uphold; blockchain transaction secured cryptographically by means of Hashing Algorithm Double SHA 256; the blockchain can keep the information secured void of manipulation. The blockchain technologies realize multifaceted enterprise of the food supply is the government demand, through the system of food market transaction record.

Methodology

The researcher employed secondary data to achieve the objectives set forth. In order to find relevant articles, we used Scopus, Web of Science, Google and other known databases for getting quality research papers done in the field of Blockchain Technology Application in the Contemporary Financial Issues. The research gap was identified after going through some research papers. The study focused on a qualitative study. This research methodology is selected as it allows to add a new dimension to interventional studies by evaluating human behaviour (Smith & Firth, 2011). A thematic analysis is used for analyzing qualitative data in the research study. It allows identifying and analyzing qualitative data patterns. Thematic analysis provides a flexible method and allows researchers with diverse methodological backgrounds to participate in types of analysis (Parveen, Saghir & Beg, 2024).

Blockchain Technology Applications

The power of new technologies is everywhere, its power is particularly transformative in business and finance with the potential to generate benefits. They can strengthen financial efficiency by facilitating peer-to-peer exchange while reducing transaction times and costs, especially across borders. In the longer term, these technologies have the potential to deepen financial inclusion by offering secure and lower cost payments options. Beyond payments systems, BCT have implications for a wide range of markets and financial market infrastructures as a fast, accurate and secure record keeping system, including for stock exchanges, central securities depositories, securities settlement systems or trade repositories (Mikloda, 2017 in Obiah & Duru, 2021).

Thus, the penetration of BCT in all aspects of life is revolutionary in the current dispensation. It has emerged as a revolutionary tool for enhancing security and transparency across various industries (Bello, 2022). According to Bergstra and Burgess (2018), the potential applications of BCT are broad and generally acknowledged, necessitating an urgent need for more development, research, and investment. It can now be applied to different sectors including financial services, government, supply chain, Internet of Things (IoT), data management, and authentication verification (Casino, Dasaklis, & Patsakis, 2018). BCT has equally penetrated the economy and it has been found to be a useful tool in digital innovations in the financial system in achieving lower transaction cost, making intellectual property ownership and payments more transparent,

automated and seamless (Anisiuba, 2020). The advent of BCT has therefore conveyed innovative possibilities extended from financial services to supply chain management, intelligent manufacturing and internet of things (Ikegwuru & Nwokah, 2022). Recently, BCT allows business enterprises to make digital interactions or record transactions in a way that is transparent, secure, auditable, efficient, and highly resistant to interruptions (Schatsky & Muraskin, 2015). Those features could not only decrease the accounting, auditing and compliance costs but also transform and facilitate the work of auditors (Spoke, 2015).

From the perspective of the financial industry, Ajayi et al (2022), the development of Blockchain has not only had a notable impact but has also resulted in the birth of an exceptionally competent data repository as it incorporates both technological and non-technological elements. A wide range of business sectors have proposed or implemented blockchain into a wide variety of systems such as settlement of financial assets, cross-border payments, and securities and derivative transactions (Wu & Liang, 2017; Nowiński & Kozma, 2017; Casino et al., 2018; Phan, Li, & Mentzer, 2019).

Today, BCT has evolved over the years to the extent that its current advanced features, where digital currencies are being used in a decentralized and shared ledger as a means of exchange to settle trade transactions, have become the norm in financial services and other sectors (Lipton, Hardjono & Pentland, 2018). It had become the norm apparently because of the simplification and transmutation of the ease of doing business, specifically in transaction cost reduction and the needless of having a central authority, as also expressed by (Nowiński & Kozma, 2017). BCT is being applied to anti-money laundering due to the possibility that some participants would use the privacy process to abuse the system. For that purpose, maintenance of confidentiality and privacy are attributes of BCT, spanning efficiency and trust among all stakeholders (Caldarelli & Ellul, 2021).

BCT can help fraud detection because it enables the sharing of information in real time and all participants in a blockchain have visibility over transactions. Therefore, errors and complexity are thwarted, fake data, errors in approval, double purchases, are prevented within the linked blockchain process (Idehen & Mayor, 2021). Security of data and the transaction is achieved through cryptography, thus enabling secure transaction, integrity and privacy (Oyebanjo, Olabode & Robertson, 2021). Presently, the technology is mainly used to verify transactions within digital currencies; thus, it can be digitized, coded, and inserted into practically any

document in the Blockchain. In addition, the record's authenticity is verified by the entire community using the Blockchain instead of a single centralized authority (Yun, 2020).

Application of Blockchain in Financial Issues

There are many faces of BCT in the contemporary financial issues, ranging from prevention of corruption, financial crimes or frauds and currency or banking situations. In the realm of financial services, security is paramount to protect against fraudulent activities, safeguard sensitive information, and ensure regulatory compliance. BCT has emerged as a transformative force in enhancing security measures in the financial services sector. By leveraging its unique features, such as immutability, decentralization, and smart contracts, blockchain offers a robust platform for securing financial transactions and data. This immutability feature makes blockchain an ideal platform for recording and verifying financial transactions, as it eliminates the risk of fraud, manipulation, or unauthorized alterations (Odeyemi et al, 2024).

Financial institutions can rely on blockchain to maintain a secure and tamper-proof platform for recording of transactions, ensuring the integrity, immutability of transaction records, reducing the risk of data breaches, disputes, and fraudulent activities. Moreover, the transparency of blockchain enables all participants in the network to access and verify transaction records, enhancing trust and accountability. By providing a transparent and auditable record of transactions, blockchain fosters greater confidence in financial transactions and strengthens the integrity of the financial system (Odeyemi et al, 2024). BCT offers decentralized identity management solutions that enable secure and verifiable authentication of individuals and entities in financial transactions. Traditional identity management systems rely on centralized authorities, such as governments or financial institutions, to verify and authenticate identities, which can be susceptible to data breaches, identity theft, and single points of failure (Odeyemi et al, 2024).

In corruption, BCT has two unique elements that make it a powerful instrument against financial fraud. Blockchain removes chances of falsification and failure in the management of data. Given the fact that transactions are recorded chronologically, forming an immutable chain, blockchain establishes an unalterable trail of transactions, allowing for the full traceability of every transaction (Romanello, 2021). Consequently, a public blockchain provides prosecutors and law enforcement agents with a tool to detect illicit activity or malfeasance by leaving enough digital signs to isolate fraudulent behaviours (Santiso, 2018).

The BCT is combined with three main technologies: private key cryptography, a distributed network with a shared ledger, and an incentive to service the network's transactions, record-keeping and security. What makes Blockchain interesting is that Blockchain can increase the integrity of the transactions financially and non-financially (Yun, 2020). Cryptography allows for access to add to the ledger securely. With these characteristics, blockchain allows to reduce or eliminate integrity violations such as fraud and corruption while at the same time it can reduce transaction costs (Kshetri & Voas, 2018). According to Lekan and Olufunke (2024), this technology offers features such as decentralization, transparency, and immutability, which can potentially mitigate corrupt practices by making transactions more secure and traceable. Transactions in a blockchain are grouped in blocks while being cryptographically chained in an approach that is immutable; thus generates a mathematically irrefutable history. Blockchain is driven by the presence of a peer-to-peer networks; Merkle trees, asymmetric key encryption, hash values to list a few; making it possible to store data in several locations and still continually reconcile such data through a shared database. BCT generates identical blocks of information across the network; this information cannot be controlled by a single entity thus, eliminating a single point of failure. It also has a secure validation mechanism for every transaction on the blockchain; utilizing sophisticated encryption technology (Lekan & Olufunke, 2024).

In another development, BCT offers distinct advantages over database technology as it provides for trustless recording of transaction data without relying on an existing intermediary like a bank in the case of financial transactions. The blockchain database contains two types of records: individual transactions and blocks (Romanello, 2021). In other words, BCT is a new method of storing data in a distributed ledger that allows multiple stakeholders to share access to the same information securely. A blockchain-driven cybersecurity system could be the most efficient way to prevent hard-to-trace cybercrimes in and outside financial institutions. Individual data can be appropriately recorded in digital ledgers, partnering with entities that can hold those that perpetrate crimes responsible. It can equally increase IoT devices' smartness by allowing them to make security choices without the need for a central authority from the financial cycle (Hales, 2020). Considering the growing diaspora remittances and the enormous cost of bank transfers to sending money back home, BCT can serve as a basis for financial institutions to sending remittances across borders more cheaply.

Generally, by leveraging blockchain's immutable ledger, entities can enhance the security of financial transactions, reducing the risk of fraud, manipulation, and unauthorized activities. Moreover, the transparency of blockchain enables all participants in the network to access and verify transaction records, fostering greater trust and accountability.

Conclusion and Recommendations

The paper has examined the dynamics of blockchain technology applications in the financial issues in Nigeria. The study revealed that presently, BCT can be applied in different sectors of the economy including, business, data management, financial issues. On the financial issues, BCT can easily mitigate corruption, financial fraudulent activities, manipulation of financial institutions, financial crimes. At the same time, BCT enhances through cryptography, transparency, accountability and security of financial transactions. Therefore, with the help of relevant groups and individuals including, government agencies, regulatory authorities, financial institutions, technology providers, and academic institutions the drive for innovation and training of blockchain experts to tackle financial issues is now necessary. This will call for capacity and skill building to increase blockchain expertise and understanding.

Based on the above conclusion, the study suggests the following recommendations:

- Governments at all levels and regulatory authorities should provide investment incentives, such as tax credits and grants, to encourage research and development in blockchain technology in financial system. These encouragements can motivate innovation, attract talent, and fast-track the adoption and adaption of blockchain-driven solutions in the financial system.
- Financial regulatory institutions (like Central bank of Nigeria, Securities and Exchange Commission), legislators and financial stakeholders should collaborate to establish compliance standards and best practices for blockchain integration in financial system. These standards should ensure that BCT conform with regulatory requirements and ethical principles, while promoting transparency and accountability.

References

Abdel-Rahman, M. (2023). Advanced cybersecurity measures in IT service operations and their crucial role in safeguarding enterprise data in a connected world. *Eigenpub Review of Science and Technology, 7(*1), 138-158.

Ajayi, W.; Madewa, M.; Fatoye, O., & Oladipo, S. (2022). Impact of blockchain technology on financial technology in Nigeria. *International Journal of Innovative Science and Research Technology, 7(*9), 750 – 756

Aliyev, Z. (2019). logos, Mythos and Ethos of Blockchain: An Integrated Framework for Anti-Corruption. *OECD Global Anticorruption and Integrity Forum,20-21 March 2019, Paris, OECD Conference Centre.*

Anisiuba, S.C. (2020). Blockchain technology and its applications towards sustainable development in the educational sector. *2020 LGT-ECE-UNN International Conference: Technological Innovation for Holistic Sustainable Development (TECHISD2020), 171 – 179*

Bello O.A (2022). Machine learning algorithms for credit risk assessment: An economic and financial analysis. *International Journal of Management Technology, pp109 – 133*

Bergstra, J.A., & Burgess, M. (2018). Blockchain technology and its applications—a promise theory view. *Haettu, 20*

Caldarelli, G., & Ellul, J. (2021). The blockchain oracle problem in decentralized finance—A multivocal approach. *Applied Sciences (Switzerland), 11*(16). https://doi.org/10.3390/APP11167572

Casino, F., Dasaklis, T. K., & Patsakis, C. (2018). A systematic literature review of blockchain-based applications: Current status, classification and open issues. *Telematics and Informatics, 36, 55-81,* Retrieved from https://doi.org/10.1016/j.tele.2018.11.006.

Christensen, C.M.; McDonald, R.; Attman, E.J. & Palmer, J.E. (2018). Disruptive innovation: An intellectual history and directions for future research. *Journal of Management Studies, 55*(7), 1043-1078

Coccia, M. (2017). Disruptive technologies and competitive advantage of firms in dynamic markets. *Working Paper IRCrES 43*(4), 1-25

Cocco, L. Pinna, A. & Marchesi, M. (2017). Banking on blockchain: Costs savings thanks to the blockchain technology. *Future internet, 9*(3): 25

Dashkevich, N. Counsell, S, & Destefanis, G. (2020). Blockchain application for central banks: A systematic mapping study. *IEEE Access, 8:139918–139952*

Dinesh Kumar, K, Manoj Kumar, D.S., & Anandh, R. (2020). Blockchain technology in food supply chain security. *International Journal of Scientific and Technological Research, 9*(1), 3446-3450.

Ducas, E., & Wilner, A. (2017). The security and financial implications of blockchain technologies: Regulating emerging technologies in canada. *International Journal, 72*(4):538–562

Eghe-Ikhurhe, G.O.; Roni, N.; Mandella, O.B., & Xihui, C. (2023). The relevance of blockchain based voting adoption in governance structure. evidence from Nigeria. *International Journal of Economics, Commerce and Management United Kingdom, 11*(1), 1 – 21

Guo, Y. & Liang, C. (2016). Blockchain application and outlook in the banking industry. *Financial Innovation, 2*(1): 24

Hammi, M.T.; Hammi, B.; Bellot, P. & Serhrouchni, A. (2018). Bubbles of Trust: A decentralized blockchain-based authentication system for IoT. *Computers & Security, 78:*126–142

Hammi, B.; Zeadally, S.; Adja, Y.C.E.; Giudice, M.D., & Nebhen, J. (2022). Blockchain-Based Solution for Detecting and Preventing Fake Check Scams. *IEEE Transactions on Engineering Management, 2022, 69*(6), 3710-3725. 10.1109/TEM.2021.3087112. hal-04400815

Houben, R., & Snyers, A. (2018). Cryptocurrencies and blockchain legal context and implications for financial crime, money laundering and tax evasion. *Policy Department for Economic, Scientific and Quality of Life Policies, European Parliament.*

Idehen, V.A., & Mayor, E. (2021). Examining the role of blockchain technology against fraud in SMEs. *International Journal of Research in Business and Social Science 10*(5), 245-252

Ikegwuru, M., & Nwokah, N.G. (2022). Blockchain Technology Application and Supply Chain Collaboration of Energy Companies in Rivers State of Nigeria. *International Journal of Information, Engineering & Technology, 11*(7), 73-91

Johnston, L.A. (2024). China's Central Bank Digital Currency: A New Force in African Finance? *Occasional Paper 353 South African Institute of International Affairs (SAIIA)*

Kafi, M. A., & Akter, N. (2023). Securing financial information in the digital realm: case studies in cybersecurity for accounting data protection. *American Journal of Trade and Policy, 10*(1), 15-26.

Kshetri, N., & Voas, J. (2018). Blockchain in Developing Countries. *IEEE IT Professional 20(2): 11-14. https://libres.uncg.edu/ir/uncg/f/N_Kshetri_Blockchain_Developing_2018.pdf*

Lekan, A.J., & Olufunke, B. (2024). Blockchain: A Potential Solution to Public Sector Corruption in Nigeria. *International Journal of Engineering and Information Systems, 8*(6): 11-20

Lipton, A., Hardjono, T., & Pentland, A. (2018). Digital trade coin: Towards a more stable digital currency. *Royal Society Open Science, 5*(7). https://doi.org/10.1098/rsos.180155

Nowiński, W., & Kozma, M. (2017). How Can blockchain Technology Disrupt the Existing Business Models? *Entrepreneurial Business and Economics Review. 5. 10.15678/EBER.2017.050309.*

O'Shields, R. (2017). Smart contracts: Legal agreements for the blockchain. NC Banking Inst., 21:177, 2017.

Obiah, M.E., & Duru, L.A. (2021). Emerging disruptive technologies and strategic management for agricultural and financial innovations in the fast-moving world. *International Journal of Management Science & Entrepreneurship, 17*(7), 403 – 426

Obiah, M.E.; Eke, F.; & Akpelu, A.E. (2022). Blockchain technology and digital cash revolution: challenges and opportunities in the sub-Saharan Africa. *International Journal of Financial Research & Management Science, 10*(7): 289 – 302

Odeyemi, O.O.; Okoye, C.C.; Ofodile, O.C.; Adeoye, O.B.; Addy, W.A., & Ajayi-Nifise, A.O. (2024). Integrating AI with blockchain for enhanced financial services security. *Finance & Accounting Research Journal 6*(3), 271-287. DOI: 10.51594/farj.v6i3.855

Oyebanjo, G.O., Olabode, H.O. & Robertson, K.T. (2021). Blockchain technology as a panacea for procurement corruption in digital era. *International Journal of Research in Business & Social Science (2147-4478), 10*(4), 311-20. https://doi.org/10.20525/ijrbs.v10i4.122

Pandya, S., Mittapalli, M., Gulla, S.V.T. and Landau, O. (2019). Cryptocurrency: Adoption efforts and security challenges in different countries. *HOLISTICA–Journal of Business and Public Administration, 10*(2), pp.167-186.

Parveen, S.; Saghir, V., & Beg, S. (2024). Financial and Strategic Factors for Successful M&A: A Study of Employee Perspective. Business, Management and Economics Engineering, 22(1): 1–16

Phan, L.; Li, S., & Mentzer, K. (2019). Blockchain Technology and The Current Discussion on Fraud. Computer Information Systems Journal Articles. Paper 28, 20(4), 8-20. https://digitalcommons.bryant.edu/cisjou/28

Romanello, M. (2021). Blockchain technology in Africa: Problems and perspectives. *Brazilian Journal of Development, Curitiba, 7*(7), 74359-74377. DOI:10.34117/bjdv7n7-560

Santiso, C. (2018). Will Blockchain Disrupt Government Corruption*? Stanford Social Innovation Review*.

Sarmah, S.S (2018). Understanding Blockchain Technology. *Computer Science and Engineering, 8*(2),23-29. https://doi.org/10.523/j.computer.2018.08802.07

Schatsky, D., & Muraskin, C. (2015). Beyond bitcoin, blockchain is coming to disrupt your industry. *Deloitte Insight*

Simoyama, F. O., Grigg, I., Bueno, R. L. P., & Oliveira, L. C. D. (2017). Triple entry ledgers with blockchain for auditing. *International Journal of Auditing Technology 3*(3): 163–183. https://doi.org/10.1504/IJAUDIT.2017.086741

Smith, J., & Firth, J. (2011). Qualitative data analysis: The framework approach. *Nurse researcher, 18*(2). https://doi.org/10.7748/nr2011.01.18.2.52.c8284.

Spoke, M. (2015). How blockchain tech will change auditing for good. *Available at: https://www.coindesk.com/blockchains-and-the-future-of-audit/*

Ugwu, N.N.; Okeke, S.E., & Ebisi, L. (2023). Blockchain technology: Is it to modify or eliminate the auditing process? Sustainability and Digitisation of Accounting and Finance for Development in Emerging Economies. *Godfrey Okoye University, Ugwuomu-Nike, Emene, Enugu State, Nigeria 8th International Annual Academic Conference on Accounting and Finance, Feb. 14 & 15, 2023 Pp. 1 – 12*

Wu, T., & Liang, X. (2017). Exploration and practice of inter-bank application based on blockchain. *In: ICCSE 2017– 12th International Conference on Computer Science and Education. pp. 219–224*.

Yun, Y. (2020). The Influence of Blockchain Technology on Fraud and Fake Protection. *OUR Journal: ODU Undergraduate Research Journal, 7*(8), 1 – 13. DOI: 10.25778/GZXV-6Y42 Available at: https://digitalcommons.odu.edu/ourj/vol7/iss1/8

Zhang, W. (2022). The Current Situation and Trend of Blockchain Technology in the Financial Field. *Mobile Information Systems, 2022.* https://doi.org/10.1155/2022/7908625