

BLOCKCHAIN TECHNOLOGY AS A TOOL FOR ENHANCING DATA TRANSPARENCY, ACCOUNTABILITY, AND SECURITY IN NIGERIAN MARKETING ORGANIZATIONS

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DOI: <https://doi.org/10.5281/zenodo.17376904>

Abstract

Many organizations especially marketing firms in Nigeria have experienced many challenges in relation to data security, accountability and integrity which is the motivation that prompted this meta-synthesis research. Block chain technology has gained increasing attention as a technology with a wide range of applications in various fields. Particularly, in the field of marketing, block chain technology facilitates disintermediation, enhances trust and transparency, avoids fraud, and reduces overall marketing cost. Block chain technology has disrupted the traditional approaches of marketing and introduced the contemporary and disruptive innovative marketing framework using its unique capabilities of decentralization, security, trust and transparency. Block chain technology supports and builds a strong connection with customers, regaining customer and loyalty, and designing more effective marketing strategies based on direct communication with consumers trust. Block chain provides sustainable data transparency, accountability and security in marketing organizations in Nigeria. Therefore, this study examined blockchain technology and how it can be used to foster sustainable data transparency, accountability and security in Nigeria. Relevant literature was reviewed with special focus on meta-synthesis literature analysis of the study constructs. The study found that blockchain technology offers more secured, accountable and transparent database for sustainable consumer trust. Therefore, this study has provided an insight that blockchain technology is a powerful enabler of sustainable data security, accountability and security in Nigerian marketing firms. This study recommended that block chain technology must be prioritized and sustained in marketing oriented organizations and beyond.

Keywords: Blockchain, Data, Transparency, Accountability, Security, Marketing Firms, Nigeria.

INTRODUCTION

Blockchain is a distributed ledger using a peer-to-peer network to keep records of transactions (Yli-Huumo et al., 2016). It is a record-keeping technology, it enables any network of users to track and trace virtually anything of value (Ferguson, 2018). Blockchain technology ensures security and accuracy of data (Gandhi et al., 2018). Block chain is a digital database or a ledger that is distributed among the nodes of a peer-to-peer network. Marketing data or other data are kept in blocks within the blockchain database which are connected by links. Because you cannot remove or change the chain without the network's approval, the data is consistent across time. Blockchain can be considered a revolutionary development. It is defined as a distributed record of digital events stored across all participating computers in a linked chain (Davidson, De Filippi & Potts, 2018). Due to the properties of blockchain in various fields; its revolution' has touched numerous areas, including industry (Idress & Nowostawski, 2022). Significantly, the marketing discipline

especially in the field of consumer behaviour, supply chain management, advertising, digital marketing and even others areas of business, accounting and finance have been benefitting from the transparency and traceability which block chain technology provides (Dionysis, Chesney & McAuley, 2022). Interestingly, blockchain has remained as a disruptive technology that transforms the way people interact, trace transactions, and automate payments, among others. Indeed, blockchain has opened the door of opportunities that enables the direct transference of value between its users in a secure and trusted manner (Casino, Dasaklis & Patsakis, 2019). Moreover, with the execution of smart contracts, the checking of approvals and compliances are simplified through blockchain. Notably, it is a shared database that is designed to be synchronized across multiple sites (Al Kemyani, Raisi, Kindi, Al Mughairi & Tiwari (2022). Also, in the field of business and accounting, the relevance of blockchain technology cannot be over emphasized. Pertinently, the main properties or features of blockchain technology marketing are; immutability of data entries, decentralization of records, cryptographic security, consensus-driven transparency, confidentiality as well as traceability (Idress & Nowostawski, 2022). Significantly, blockchain applications have attracted the interest of investors across a wide range of industries such as marketing, accounting, banking, insurance, communications, entertainment, transportation, healthcare, education, and public services (Menon & Mendy, 2022). Furthermore, blockchain technology can be deployed to allow research firms record customers' activities and Associate these activities with micropayments. These payments can go directly to customers based on their online activities such as a click of a button, answering a survey, watching an ad, reading a report and so on. The technology allows information to be protected from modifications and to be shared directly between users in a secure manner (Hadianfar & Maleki, 2023). This presents an opportunity to exchange relevant and accurate information allowing the marketing of products, services, and programs to be more relevant to each user (Li, Jiang, Chen, Luo & Nen, 2020). Therefore, organizations or companies implement blockchain technology to strengthen their marketing, accounting as well as financial transactions (Menon & Mendy, 2022). Pertinently, blockchain technology is a decentralized, immutable ledger that records transactions in a secure, transparent, and time-stamped manner. In accounting, blockchain can be used to automatically record journal entries, prevent fraud and error through immutability, enable real-time audits and facilitate regulatory compliance (Tapcoott & Tapcott, 2016; Zyskind, Nathan & Pentland, 2015).

Purpose/Objective of the Study

The main aim of this research is to examine how sustainable data transparency, accountability and security in marketing organizations in Nigeria are enhanced through blockchain technology.

Significance of the Study

This meta-synthesis study is expected to have very significant implications on the consumers, policy makers, manufacturers, marketers, scholars or future researchers, channel intermediaries and other stakeholders in Nigeria. The findings on this study is expect of immense relevance to marketing organizations and other business entities. This study serves a source of information about blockchain technology and how it foster data transparency, data accountability and data security to marketing organizations that use it in Nigeria. However, this study serves as a source material for anyone who intends to carries out related study on study on blockchain technology. In addition, the study is expected to be of great benefits to the academics and even future researchers. This study will be beneficial to both government and nongovernmental organizations .in their decision making process. The study will be a

source of secondary data to future researchers who wish to conduct similar studies on the same or related subject matter or topics. The study provides relevant information for policy makers, development agencies, marketers, entrepreneurs, and small business managers to help seek better ways to increase small businesses, and appropriate strategies to improve the business sector in Nigeria. This study will be of great relevance to extant literature and also provide significant contributions to the existing body of knowledge on the subject matter. Also, this study is expected to offer fresh lens for studying trust, privacy, and digital transformation. Helps future-proof marketing strategies and embrace digital innovation. Promotes digital inclusion, transparency, and competitive marketing ecosystems in blockchain technology.

LITERATURE REVIEW

Blockchain technology was first introduced by Satoshi Nakamoto in 2008 to help achieve consensus on the authenticity of a particular transaction and also helps to maintain trust between various entities involved (Zyskind et al., 20215; Appasani et al., 2022). It was first recognized as a decentralized ledger for Bitcoin but now has been applied in various areas ranging from marketing, banking and so on (Jain et al., 2021). Blockchain is seen as an incorruptible digital ledger of transactions that can be programmed to record not just financial transactions but virtually everything of value". It is a trusted decentralized peer-to-peer network of shared ledgers (Meno & Mendy, 2022). However, the features of blockchain include; decentralization, consensus, immutability of data entries, and cryptographic security (Bohmeeke-Schwafert et al., 2022). Importantly, an unchangeable or immutable record for monitoring orders, payments, accounts, and other transactions can be made using blockchain technology. The common picture of these transactions is consistent and the system contains built in safeguards against unauthorized transaction submissions. Blockchain is a database that cannot be manipulated and hacked and it is also called distributed ledger technology. Database is knotted with the computer. The components of this database are blocks and pages. Each block contains a cryptographic signature at the end. This signature summarizes all the information in the block, and any trivial change in the data in the block causes the signature to be completely different. Bitcoin orders transactions and groups them in a constrained-size structure named blocks sharing the same timestamp (Li et al., 2020). Block chain technology is used to execute contracts without intermediaries and preserving data with confidentiality and dependability that is unmatched in several economic processes. Blockchain technology can be used as a promotional tool. The advantages of blockchain are widely recognized as undeniable in practitioner literature. Blockchain technology is based on peer-to-peer networks, which can either shake up business as usual by fostering direct marketing or save money by cutting out the need for intermediaries when dealing with trustworthy data sources. These two advantages are both valuable. Thus, owing to the fact that blockchain technology creates a permanent and shared data repository, it has the potential to boost system reliability and speeds up data access. Blockchain is a stack of technologies that uses the internet and smart contracts (Androulaki et al., 2018). The core of a blockchain-based platform is a distributed ledger that records all the transactions that take place in the supply chain (Wang et al., 2019). Blockchain can be used to cryptographically capture and store an immutable record of the interactions among supply chain members (Felin and Lakhani, 2018, Dutra et al., 2018). Cole et al. (2019) maintained that blockchain is more powerful at managing complex supply chain networks with multiple echelons, complex product flows and many different suppliers. Collaboration (Hastig and Sodhi, 2020) and the interorganizational processes (Sabeti et al., 2018) between supply chain members have also been identified as critical in blockchain adoption. Second, studies show

that a firm's capability and practices affect the implementation of blockchain. For example, Du et al. (2019) argue the implementation of blockchain is more likely to be successful when a firm focus on incremental changes and avoids large amounts of data and transactions. Researchers also argue that the successful adoption of blockchain depends on a firm's systems and technological capabilities, such as storage capacity and scalability, and throughput and latency issue (Sabeti et al., 2018, Wang et al., 2019a, Hastig and Sodhi, 2020), complementary assets such as the digital network (Ehrenberg and King, 2019) and platform development (Yang, 2019), and the intraorganizational and operational processes (Wang et al., 2019a, Sabeti et al., 2018).

The lack of understandings about blockchain, including its technical limitations, costs and return on investment of implementing the technology and how to integrate blockchain into existing processes, hinders the adoption of blockchain (van Hoek, 2019b, Zhao et al., 2019). In addition, product features, such as the need for traceability (Kumar et al., 2020) and the importance of product safety, quality failure and counterfeiting to consumer wellbeing (Cole et al., 2019) also affect the decisions on blockchain adoption. Researchers reported that the implementation of blockchain benefits supply chains by improving transparency and traceability. Blockchain can provide indisputable, verifiable and immutable evidence in each touchpoint of the supply chain network for customers, governments and enterprises, prove the origin and authenticity of products, and hence firms can manage and respond to risk in a responsive and documented way (Chang et al., 2019, Deloitte, 2017). In addition, blockchain can also improve the visibility of supply chain processes and advance the information and product security and safety, which enhance product quality management and facilitate anti-counterfeiting in supply chain (Kumar et al., 2020, Zhao et al., 2019). It increases consumers' confidence (Cole et al., 2019) and the implementation of blockchain allows supply chain members to secure information sharing and build trust (Wang et al., 2019). Blockchain helps to improve customer order management (Martinez et al., 2019), supply chain coordination, operational efficiency and sustainable performance (Hastig & Sodhi, 2020). Blockchain technology improves the user experience by increasing data and information openness as well as strengthening security and privacy. It is possible because of the possession of the decentralized ledger features it offers. Consequently, it allows for the abundance of potentially valuable client loyalty goods (Sun & Park, 2021). Furthermore, blockchain technology is a digital ledger that combines the best features of the early internet and modern social media. The widespread adoption of blockchain technology in marketing makes its application in promotional campaigns a real possibility. Since, blockchain is a continuously expanding set of documents, that links together in a distributed ledger but it does not rely on any central authority to verify their accuracy. The public's familiarity with blockchain stems from its role as the underlying technology behind Bitcoin (Adiguzel, 2021). Accordingly, blockchain technology enables the verification and recording of all transactions. However, marketers can use the positive aspects of technology that modern consumers value, such as openness and privacy. Indisputably, block chain technology enhances openness in marketing and data collection. Moreover, due to the effectiveness of blockchain technology, numerous industries are experiencing rapid transformations. Many people are curious about how marketers can use blockchain technology. It is even used in advertising. Pertinently, blockchain technology marketing allowed for new methods of data collection and utilization by marketers, allowing them to understand better and meet the needs of their target audiences and manage their advertising campaigns (Igwe & Ewim, 2024; Anetoh et al., 2025).

Blockchain Technology in Marketing

According to the World Economic Forum, by 2025, 10% of the world's GDP may be on the blockchain System. As marketing practitioners comprehend the value of the technology and it becomes embedded in various spheres of marketing (Menon & Mendy, 2022). Blockchain has an impact on the practice of marketing because investing in innovative technologies such as blockchain, is dependent on the added value derived from them. Undeniably, investments in marketing automation and technology solutions have had positive influences on customer engagements. Blockchain technologies provide and foster disintermediation, combating click fraud, reinforcing trust and transparency, enhancing privacy protection, empowering digital marketing security and enabling creative loyalty programs (Treiblermalder & Gorbunov, 2022). In addition, the applications of blockchain in marketing improves the interactions between a customer and businesses. Blockchain brings the value of multiple technologies and most important of all, a distributed ledger of transactions carried out by parties involved in the blockchain network. The basic objective of blockchain technology focuses primarily on authentication of assets with the flexibility for application in other business activities especially in Marketing (Jain et al., 2021). Blockchain technology determines various strategies in the field of marketing. For instance, marketing security reaches customers through different channels and the blockchain deployment can lead to radical disruption in marketing communications (Davidson et al., 2018). Nevertheless, blockchain has an impact on the practice of marketing. With blockchain technology features like disintermediation, transparency, and immutability, not only can marketers and brands avoid ad frauds and save money, but also build a strong connection with their customers, regain their trust and loyalty, and design more effective marketing campaigns and for long-term strategies based on direct communication with consumers. In addition, blockchain technology helps to increase the authenticity of product information which can increase their confidence about the product. Blockchain also facilitates product traceability, transparency (Li et al., 2020; Kshetri, 2022). On a similar development, the marketing program may deploy blockchain for digital payments such as cryptocurrencies and so on in order to perform transactions with both customers and suppliers.

Blockchain technology ensures speed and security of transactions, creating trust between the participating parties. Moreover, the elimination of middlemen will reduce operating and financial costs, increasing profit margins for each transaction (Madhani, 2022). Blockchain helps to power a digital marketing platform, a marketing research platform, a cloud-based digital commerce platform, and a supply chain platform, among many others (Casino et al., 2018). Marketing can also benefit from blockchain's ability to reduce costs by disintermediation, tokenization of tangibles/intangibles, increase efficiency using smart contracts and secure payments, authenticate transactions by verifying customer data. Blockchain embodies the revolutionary relationship between marketing and technology (Menon & Mandy, 2022). Madhani (2022) maintained that various benefits of blockchain technology deployment in marketing are as follows: greater trust, fostering disintermediation, effective marketing communications, better loyalty program, enhancing data security, protecting customer privacy, increased transparency, automatic execution with smart contracts. Consequently, blockchain technology has helped to enhance security, trust, privacy in marketing-oriented organizations in Nigeria (Casino et al., 2019, Anetoh et al., 2025).

Blockchain Technology for Sustainable Data Transparency

Abiodun Akinoso et al. (2024) highlighted blockchain technology applications in marketing as follows; it is used to trace product origin and supply chains so as to verify authenticity. It enables secure consumer data

management, enhancing privacy and trust. It combats ad fraud via immutable audit trails. Contributing, Bernadus (2024) maintained that blockchain technology increases consumer trust, reduces fraud and misreporting in ad metrics. Ozor, Okafor et al. (2024) examined blockchain's application in e-invoicing among multinational corporations in Nigeria. They reported that blockchain transparency, immutability, and cryptography can improve verification of invoices; securing of financial data against tampering; and enhancement of accountability across marketing vendors and agencies. In addition, blockchain technology in business is used to improve trust, transparency and efficiency across marketing and business operations (Ozor et al., 2024). It replaces centralized systems with decentralized, tamper-proof ledgers and also enables more reliable data sharing, contract execution as well as asset tracking (Onah & Eyo, 2025).

Blockchain Technology for Sustainable Data Accountability

Nsisong Louis Eyo-Udo et al. (2025) maintained that blockchain technology ensures immutable financial records for audits; offers automated compliance via smart contracts and provide solid foundation for trustworthy marketing-data practices. Owa Fredrick et al. (2024) analyze how blockchain in accounting within Nigerian MNCs can decrease tax evasion. The immutable ledger supports complete audit trails for marketing expenditures; data integrity and regulatory compliance; and enhanced oversight by tax authorities and auditors. Oladipupo (2024) highlighted that blockchain technology is seen as an anti-corruption technology that is used in Nigerian accounting and public establishments, advocating tools based on smart contracts and auditability to improve public accountability. Contributing, Akaba et al. (2020) stated that blockchain-based e-procurement systems in Nigeria is used to combat fraud. In addition, smart contracts enhance transparency, auditing, and citizen oversight of government contracts. Also, blockchain provides smart-contract invoicing with automated payments upon verification. Secure consumer data platforms where consent is managed transparently. Automated audit logs for all third-party engagements, satisfying compliance bodies like NCC or CBN. In addition, auditors can access live data directly from the blockchain and this ensures transparency and reduces audit time and costs.

Blockchain Technology for Sustainable Data Security

Blockchain data security refers to the protection of digital information recorded on a blockchain network. It ensures that the data cannot be altered (immutability). Blockchain ensures that data is only accessible to authorized parties (Li et al., 2020). It ensures that data are traceable and auditable as well as securely by executing only predefined logic. Furthermore, blockchain technology provides resistance to data loss. It is hard to manipulate records once added to the blockchain. The sustainability of data security is enhanced because blockchain technology ensures that the history of any data or transaction are easily tracked. In addition, through blockchain technology, the users are in control of their personal or business data encrypted. Blockchain is a powerful tool for ensuring data security by offering integrity, confidentiality, authentication, and non-repudiation through its decentralized, cryptographic, and consensus-driven structure (Casino et al., 2018). The use of blockchain ensures that every block has a unique hash or digital fingerprint. Thus, changing any block's data alters the hash, alerting the network. Transactions are signed using private keys, ensuring authentication and non-repudiation. Only the data owner can initiate a transaction using their digital signature. Blockchain ensures that each node has a complete copy of the ledger. No central database means better resilience to attacks. In addition, blockchain uses auto-enforce access controls for data processing. It also prevents unauthorized actions (Davidson et al., 2018). In

addition, the feature, benefits and some marketing organizations that use block chain technology are depicted on table 1 in the form of meta-synthesis summary as presented by Anetoh et al., 2025).

Meta-Synthesis of Blockchain Technology in Nigerian Marketing Organizations Data Objective
Blockchain Mechanism Impact on Marketing Organizations

	Immutable ledgers, smart Verifiable ad spend, data origin, invoicing
Transparency	contracts integrity
	Cryptography, decentralized
Security	Protection of consumer data, secure auditing,
storage	
Accountability	Public/shared audit trails Better regulatory compliance; reduced fraud

Meta-synthesis of Some Features of Blockchain Technology and Benefits

Feature	Business Benefit
Immutability	Prevents fraud and unauthorized changes
Transparency	Builds trust with partners, regulators, customers
Smart Contracts	Automates agreements, reducing costs and delays
Security	Encrypts data and uses consensus for validation
Decentralization	Eliminates single points of failure or manipulation
Accountability	Offers immutable financial and accounting records.
Benefits	Explanation
Increased Efficiency	Reduces paperwork, delays, and intermediaries
Cost Reduction	Automates processes and prevents fraud
Improved Trust	Transparent data builds credibility with partners
Better Compliance	Automatic recordkeeping and audit trails
Interoperability	Integrates multiple systems seamlessly

Meta-Synthesis of Some Marketing Firms that Use Block Chain Technology in Nigeria Organization

Blockchain Role	Marketing Relevance
Loyalty tokens	Reward-driven campaigns via tokenized
BeepMagnet	
(BMCToken)	incentives
Blockchain App	Crypto ICO support and community-driven
Crypto marketing agency	
Factory	engagement
OMNI & Digital	campaign

Content, social, and SEO for blockchain brands

GuerrillaBuzz providers

Position blockchain apps in search via content

AdHang Crypto SEO specialist

& backlinks

AI + NFT + Smart

Ojamu Platform

Automated, AI-powered campaign planning

contracts

Afex

Blockchain receipts

Trust-focused messaging in agri-finance

Cross-border payment Messaging efficiency in payments for

Interswitch/Afex

system

marketing campaigns

Source: Compiled by Anetoh et al. (2025).

CONCLUSION

The uniqueness of blockchain technology lies on its ability to record data seamlessly and flawlessly as well as to enhance data transparency, data accountability and data security. This conceptual study has provided comprehensive insights on the relevance of blockchain technology in fostering sustainable data transparency, accountability and security in Nigerian marketing organizations as well as other business organizations. Blockchain system is designed to be robust consistent and rigid to resist the unauthorized changes and enhance the trust and confidence. The comprehensive advantages include a single point of contact for data, distributed ownership thereby eliminating the central authority needed to validate transactions, allowing decisions based on total supply chain information and enabling collaboration with partners. Blockchain technology is imperative in this contemporary era, due to its strong pillars of distribution, decentralization, encryption, immutability and tokenization. It has a growing scope in various sectors of the economy. Blockchain technology, brands can limit or remove costs and eliminate non-value adding activities at the intermediation layer. Marketing organizations should incentivize their customers to disclose and share information through blockchain technology channels and tools. Blockchain technology strengthens the direct relationship between brands and marketing organizations. In conclusion, the unique features or characteristics of the blockchain technology are decentralization, distribution, immutability and tokenization. Blockchain is not only a great investment to create trust with our customers, but also to protect our collective online privacy and cut down on fraud and theft. Conclusively, blockchain offers more secured and trustworthy digital experience. Marketing managers need to understand the possibilities of blockchain technology as a disruptive innovative communication tool that marks the transition from the Internet of information to the Internet of value and trust. Conclusively, blockchain ensures data security and transparency, enables us to manage data. In conclusion, in the field of accounting, blockchain technology has redefining accounting by moving from double-entry to triple-entry systems, ensuring that each transaction is verified by a third, immutable ledger. This transformation has led to more trustworthy, efficient, and secure financial practices. Therefore, this study concludes that blockchain technology is a powerful enabler of sustainable data security. It is proved to be a tamper-proof, decentralized, and cryptographically secured technology which offers a sustainable robust and resilient alternative to

conventional centralized systems especially in the field of marketing. This study recommended that block chain technology must be prioritized and sustained.

SUGGESTIONS FOR FURTHER RESEARCH

This study is not all inclusive owing to the fact that it dwells on conceptual literature analysis. Therefore, we suggest that future studies will focus on empirical studies in relation to blockchain technology usage in these areas in Nigeria so as to contribute to knowledge;

1. The Impact of Blockchain technology on consumer trust in digital advertising in Nigeria.
2. Token-Based Loyalty Programs: Adoption and Effectiveness in Emerging Markets.
3. Blockchain as a Tool for Influencer Marketing Transparency and ROI Optimization.

CONFLICT OF INTEREST: the researchers have no conflicting interests or issues to declare.

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