



BLOCKCHAIN TECHNOLOGY AND ANTI-CORRUPTION MEASURES IN THE SETTING OF PUBLIC ADMINISTRATION IN NIGERIA

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ABSTRACT: *This paper analyzes the junction between blockchain technology and anti-corruption measures in the setting of public administration in Nigeria. The research is inspired by the continuous difficulties of corruption within the space of Public Administration in Nigeria and the rise of blockchain technology as a possible technical solution. The theoretical framework gives a foundation for comprehending corruption within public administration, offering a basis for quantifying its effect. An analysis of existing anti-corruption efforts in Nigeria sets the foundation for analyzing the strengths and limits of present techniques. The literature critically evaluates worldwide trends and case studies linked with the use of blockchain technology in public administration and public service delivery. This section goes into the possible advantages and hazards connected with employing blockchain technology to fight corruption. Drawing on theoretical and practical insights, the study attempts to give a complete understanding of the revolutionary potential of blockchain technology within the Nigerian environment. Analysis is given via an examination of perceptions of corruption in public administration in Nigeria and an evaluation of the efficacy of existing anti-corruption efforts. The research also explores the knowledge of blockchain technology and its potential for anti-corruption applications, addressing problems and impediments to adoption. An in-depth examination of the possible effect of blockchain technology on transparency, accountability, and efficiency is undertaken, considering the legal and regulatory context for blockchain technology adoption in Nigeria. The discussion and suggestions section formulates solutions for resolving concerns and managing dangers related with blockchain technology-based anti-corruption tools. Policy and legal frameworks are suggested to facilitate safe and transparent blockchain technology transactions within the area of public administration. Emphasis is made on institutional capacity development and public awareness activities to promote a complete grasp of blockchain technology and its anti-corruption applications. The study finishes by summarizing significant results, detailing implications for policy and practice, and adding to the current discourse on transparency and accountability in public administration via the creative lens of blockchain technology.*

KEYWORDS: Blockchain Technology, Bitcoin, Public Administration, Corruption, Nigeria.



INTRODUCTION

In the contemporary landscape of Nigerian public administration, the formidable challenge of corruption persists, undermining the effective functioning of governmental institutions (Adam & Fazekas, 2021). It is crucial to situate the significance of this study within the broader framework of combating corruption in the Nigerian public sector.

Nigeria's public administration grapples with systemic corruption, marked by embezzlement, bribery, and a dearth of transparency (Adam & Fazekas, 2018; Page, 2021). These challenges obstruct the country's socio-economic development and corrode public trust in government institutions (Adam & Fazekas, 2018). Existing anti-corruption measures, though implemented with good intentions, exhibit limitations in effectively curbing corrupt practices (Page, 2021).

Blockchain technology has garnered considerable attention for its potential to offer transparency, security, and accountability across various sectors. In the context of Nigeria's public administration, blockchain emerges as a potent tool in the fight against corruption and the promotion of good governance (Sanka & Cheung, 2019). The decentralized nature of blockchain facilitates the creation of immutable and tamper-proof records, rendering it challenging for corrupt practices to evade detection. By harnessing blockchain technology, public administration in Nigeria has the potential to establish a more transparent and accountable system, thereby facilitating efficient service delivery and reducing corruption. This paper delves into the benefits and challenges associated with implementing blockchain technology as an anti-corruption measure in the context of public administration in Nigeria.

Blockchain's decentralized ledger ensures the irrevocability of recorded transactions, providing an auditable trail of financial activities (Swan, 2015). This inherent transparency can substantially mitigate corruption risks by diminishing opportunities for fraudulent practices and embezzlement (Tapscott & Tapscott, 2016). Furthermore, the cryptographic nature of blockchain ensures the security and integrity of data, fortifying defenses against unauthorized tampering (Mougayar, 2016; Lánský, 2021).

However, blockchain technology has emerged as a promising avenue for addressing corruption in public administration in Nigeria. With its decentralized nature and advanced encryption techniques, blockchain technology offers a secure and transparent platform for financial transactions, making it difficult for corrupt individuals to manipulate or embezzle funds. Moreover, the use of blockchain technology ensures that all transactions are recorded on a public ledger, making it easier to trace and prevent fraudulent activities. The implementation of anti-corruption measures in public administration, combined with the adoption of blockchain technology, has the potential to revolutionize governance and promote transparency in Nigeria. However, there are challenges and limitations associated with the use of blockchain technology in combating corruption, including regulatory concerns, technological barriers, and the risk of money laundering. This study explores the potential benefits and challenges of utilizing blockchain technology as an anti-corruption measure in public administration in Nigeria.



Research Objectives and Significance

The research objectives are multifaceted, aiming to explore the feasibility and implications of integrating blockchain technology into Nigerian public administration as an anti-corruption measure. By evaluating the potential benefits and risks, understanding current perceptions of corruption, and assessing the legal and regulatory landscape, this study aspires to contribute valuable insights to the ongoing discourse on transparency and accountability.

The significance of this research lies in its potential to inform policymakers, practitioners, and scholars about the transformative role that blockchain technology can play in reshaping public administration dynamics. These findings however will be instrumental in shaping future policies, fostering public awareness, and advancing the understanding of innovative solutions to age-old challenges in governance.

LITERATURE REVIEW

Understanding Blockchain Technology

Blockchain Technology, as a decentralized and distributed ledger allowing simultaneous access to a synchronized database, holds significant promise for revolutionizing public administration in Nigeria. The cryptographic verification of each transaction ensures security and transparency, eliminating the need for intermediaries. This technology has the potential to provide an immutable and incorruptible system, addressing issues such as fraud, lack of accountability, and enhancing transparency in Nigeria's public administration.

Theoretical Framework: Corruption and Public Service Delivery in Nigeria

As we delve into the theoretical underpinnings of our research, it is crucial to establish a comprehensive framework for defining and measuring corruption in the context of Nigerian public administration. Corruption, a complex phenomenon, requires a nuanced understanding to formulate effective anti-corruption strategies (Adam & Fazekas, 2021).

Scholars such as Rose-Ackerman (1999) stress the importance of distinguishing between different forms of corruption. Petty corruption, involving small-scale bribery and facilitation payments, may manifest differently than grand corruption, characterized by high-level embezzlement and abuse of public office for personal gain. Recognizing these distinctions is crucial in devising targeted interventions addressing specific challenges within the Nigerian public administration landscape.

Moreover, the theoretical framework should incorporate the institutional perspective, as institutions play a pivotal role in shaping the prevalence of corruption (Mauro, 1995). The Institutional Theory posits that corrupt practices are influenced by the design and functioning of formal and informal institutions within a society (North, 1990). In the Nigerian context, the legacy of historical institutions and socio-cultural factors may contribute to the persistence of corrupt practices within public administration.

To measure corruption, scholars often rely on quantitative and qualitative indicators. Transparency International's Corruption Perceptions Index (CPI) is a widely recognized quantitative measure assessing perceived corruption levels globally. Qualitative methods, such



as case studies and in-depth interviews, offer nuanced insights into contextual factors influencing corruption within specific administrative processes (Doig & McIvor, 2006).

By aligning this research with an established theoretical framework, the paper aims to contribute to the ongoing academic discourse, providing a nuanced knowledge within Nigerian public administration. Drawing on a rich theoretical foundation, our study seeks to inform the development of targeted anti-corruption measures addressing the specific manifestations of corruption in this context.

Perceptions of Corruption in the Public Administration Sector in Nigeria

Understanding the perceptions of corruption in Nigerian public administration is pivotal in designing effective strategies to counter it. Koroye (2023) highlights the transformative potential of blockchain technology in promoting transparent public administration, particularly in developing nations. The study by Mutungi, Baguma, Ejiri, and Janowski (2021) introduces a digital anti-corruption typology for enhancing public service delivery, emphasizing the role of technology in combating corrupt practices. Moreover, Remeikienė and Gaspareniene (2023) underscore the detrimental effects of economic and financial crimes on government budgets and public services, advocating for robust measures to address such challenges.

Several studies, including Mbalaka and Ojo (2019), focus on the role of e-governance in the anti-corruption agenda within African contexts. Aluko and Aderinola (2019) shed light on the impasse between e-governance and corruption in Nigeria, emphasizing the need for developmental strides in this domain. Furthermore, Jimoh, Longe, and Ndunagu (2018) advocate for information dissemination through electronic governance as a powerful tool to combat corruption.

Incorporating insights from Mutungi (2023), Koroye (2023), and other scholars, it is evident that emerging technologies like blockchain and the integration of e-governance principles are instrumental in curbing corruption within Nigerian public administration. These advancements present opportunities to enhance transparency, accountability, and service delivery, underscoring the multifaceted approach needed to tackle corruption effectively.

Existing Anti-corruption Measures in Nigeria: Strengths and Limitations

Examining the landscape of existing anti-corruption measures in Nigeria is crucial to contextualize the potential impact of incorporating blockchain technology solutions. The country has implemented various strategies to combat corruption, including legal frameworks, anti-corruption agencies, and international partnerships (Ibrahimi, Norta, & Normak, 2023). While these efforts signify a commitment to addressing corruption, there are inherent strengths and limitations.

Strengths of the current measures include the establishment of institutions such as the Economic and Financial Crimes Commission (EFCC) and the Independent Corrupt Practices and Other Related Offences Commission (ICPC), which play pivotal roles in investigating and prosecuting corruption cases (Transparency International, 2020). Additionally, legal frameworks like the Corrupt Practices and Other Related Offences Act provide a legislative foundation for anti-corruption efforts (Page, 2021).



However, these measures face notable limitations. The enforcement of anti-corruption laws can be inconsistent, and the legal process may be protracted, allowing room for corrupt practices to persist (Page, 2021). Moreover, the effectiveness of these measures is hindered by a lack of transparency in financial transactions and a pervasive culture of impunity (Uzochukwu et al., 2019). It is essential to critically assess these strengths and limitations to inform the design of more robust anti-corruption strategies.

Potential Benefits and Risks of Blockchain Technology in Reducing Corruption

Blockchain Technology as an agent of Globalization, holds promise as a disruptive force in the fight against corruption. Its potential benefits lie in its ability to introduce transparency, immutability, and decentralization to financial transactions (Mutungi, 2023). Blockchain's decentralized ledger ensures that transactions are recorded in a tamper-resistant manner, reducing the risk of corruption through fraudulent practices (Ojo, 2019). Blockchain technology, being digital and borderless, can also facilitate faster and more secure cross-border transactions, mitigating the potential for corrupt practices related to international financial transactions.

However, the integration of blockchain technology in anti-corruption measures is not without risks. Blockchain technology is often used in money laundering, as the pseudonymous nature of transactions can provide anonymity to users (Foley, Karlsen, & Putniņš, 2019; Mutungi, 2023). Moreover, the volatility of blockchain technology prices poses a risk to the stability of financial transactions within the spheres of public administration (Mutungi, 2023).

As we navigate the potential benefits and risks of blockchain technology, it is imperative to strike a balance between leveraging the technology's strengths and addressing its vulnerabilities. Crafting a regulatory framework that addresses these risks while harnessing the transformative potential of blockchain technology is essential for effective integration into Nigeria's anti-corruption efforts.

Several case studies underscore the success of blockchain technology adoption in anti-corruption measures, with Ukraine's implementation of blockchain technology in its e-governance system serving as a notable example. The National Agency for Prevention of Corruption (NAPC) initiated the "E-Declaration System," employing blockchain to store and verify asset declarations of public officials. This approach ensured data integrity and expedited verification processes, contributing to a more efficient and trustworthy anti-corruption mechanism. The NAPC's experience offers valuable insights and a potential model for countries globally dealing with corruption challenges.

Globally, the interest in leveraging blockchain technology within public administration is burgeoning. Governments and organizations recognize its potential for enhanced transparency, efficiency, and citizen engagement. Various pilot projects have emerged, including Estonia's secure e-voting through blockchain, Dubai's exploration of a blockchain technology-powered land registry, and Honduras' digital identity documents instantiate deployment of blockchain technology in public administration. However, regulatory uncertainty persists, with governments navigating issues like taxation, data privacy, and anti-money laundering measures in this evolving landscape.

Case studies from around the world illustrate the transformative power of blockchain technology in public administration. Estonia's X-Road system, built on blockchain, streamlines



data exchange between government agencies and citizens, reducing bureaucracy. Dubai's "Smart City" initiative integrates blockchain into land registry, transportation, and healthcare to create a more efficient and transparent government ecosystem. Georgia's National Land Agency employs blockchain for secure and immutable land registry data, significantly reducing fraud and disputes, enhancing trust, and promoting transparency.

These global trends and case studies offer essential lessons for Nigeria as it contemplates blockchain technology integration in public administration. Pilot projects, akin to those in Estonia and Ukraine, can allow Nigeria to assess feasibility and effectiveness before widespread adoption. Collaboration between government agencies, technology experts, and civil society organizations is pivotal for successful implementation. Addressing regulatory challenges through proactive development of clear and comprehensive regulations is crucial, ensuring responsible blockchain technology use in public administration (Mutungi, 2023; Remeikienė, & Gaspareniene, 2023; World Bank, 2018).

Challenges and Barriers to Adopting Blockchain Technology in Public Administration

The adoption of blockchain technology in public administration heralds a transformative potential; yet, it is essential to critically assess the challenges and barriers that may impede its seamless integration into the bureaucratic landscape.

One significant challenge revolves around the regulatory uncertainty surrounding blockchain technology. Governments globally, including Nigeria, are grappling with the development of clear and comprehensive regulations to govern blockchain technology usage in public administration (Remeikienė & Gaspareniene, 2023). The absence of a well-defined regulatory framework poses a barrier to widespread adoption, as stakeholders may hesitate to engage in blockchain technology transactions without a legal foundation.

Moreover, the volatility of blockchain technology prices introduces another layer of complexity. The fluctuation in the value of blockchain technology, such as Bitcoin, poses a risk to financial stability within public administration (Remeikienė & Gaspareniene, 2023). Public funds, when converted into blockchain technology, may experience substantial value variations, leading to potential financial instability and unpredictability in budgeting.

Security concerns constitute another significant barrier to the adoption of blockchain technology in public administration. While blockchain, the underlying technology of most blockchain technology, is praised for its security features, the actual implementation and usage of blockchain technology may expose vulnerabilities (Adam & Fazekas, 2018). Cybersecurity threats, hacking attempts, and potential misuse of blockchain technology for illicit activities present substantial challenges that need to be addressed.

It is crucial to acknowledge the skepticism and resistance that may arise from various stakeholders within the public administration ecosystem. Bureaucratic inertia, resistance to change, and a lack of understanding about the technology may hinder the adoption process (Adam & Fazekas, 2021). Effective communication strategies and stakeholder education are imperative to overcoming these barriers and fostering a conducive environment for the adoption of blockchain technology.

Furthermore, the digital divide within society poses an ethical challenge to the widespread adoption of blockchain technology. Access to technology and digital literacy may be unevenly



distributed, potentially excluding certain segments of the population from participating in blockchain technology-based public services (Adam & Fazekas, 2018). Policymakers must address this digital divide to ensure inclusive and equitable adoption.

The potential benefits of adopting blockchain technology in public administration are significant; it is crucial to recognize and address the challenges and barriers inherent in this process. Policymakers, regulators, and technology experts must work collaboratively to develop a regulatory framework, enhance security measures, and implement effective communication strategies to overcome these challenges and ensure a smooth and responsible integration of blockchain technology into public administration.

The introduction of blockchain technology has the potential to significantly enhance transparency and accountability in public administration. Blockchain technology operates on decentralized networks, utilizing blockchain technology, which allows for a transparent and verifiable transaction process (Foley, Karlsen, & Putniņš, 2019). By incorporating blockchain technology into public administration, financial transactions can be recorded on a public ledger, providing a secure and tamper-proof record of all transactions. This transparency can help in detecting and preventing corrupt practices, as any suspicious activities can be easily identified and investigated. Additionally, the use of blockchain technology can reduce the reliance on intermediaries, such as banks, thereby minimizing the opportunities for bribery and embezzlement (Mutungi, 2023). The inherent characteristics of blockchain technology, such as immutability and transparency, make it a powerful tool in promoting accountability and combating corruption in public administration.

Legal and Regulatory Landscape for Blockchain Technology Usage in Nigeria

The legal and regulatory landscape remains a daunting obstacle course in the exploration of integrating blockchain technology into the arsenal against corruption within Nigerian public administration. This uncharted territory demands a nuanced understanding of existing frameworks, potential loopholes, and the imperative need for tailored regulations.

In the current scenario, Nigeria grapples with a regulatory vacuum as there exists no comprehensive legal framework explicitly governing blockchain technology usage. The Central Bank of Nigeria (CBN) took a decisive step in 2017 by issuing a circular prohibiting financial institutions from facilitating blockchain technology transactions, essentially halting mainstream adoption (Central Bank of Nigeria, 2017). The existing piecemeal approach, exemplified by the Securities and Exchange Commission (SEC) regulations, attempts to categorize and regulate crypto-assets based on functionalities. However, this approach lacks clarity, leaving significant gray areas open to interpretation and potential exploitation (Securities and Exchange Commission, 2020). Furthermore, the global regulatory landscape for blockchain technology remains uncertain, adding complexity to the challenge of crafting effective regulations in Nigeria.

Challenges and concerns loom large in this uncharted regulatory territory. The perceived anonymity of blockchain technology transactions raises fears of money laundering and criminal activity, potentially eroding public trust in its use in public administration (UN Office on Drugs and Crime, 2019). In order to enhance consumer's protection due to the volatile nature of blockchain technology and absence of investors, a more careful consideration is necessary (Nigeria Financial Stability Board, 2020). Moreover, the rapid evolution of blockchain



technology outpaces existing regulatory frameworks, creating vulnerabilities that could be exploited for illicit purposes.

Looking ahead, the development of a robust legal and regulatory framework for blockchain technology usage in Nigerian public administration demands a multifaceted approach. Collaborative policymaking, involving government agencies, technology experts, legal professionals, and civil society organizations, is paramount to crafting regulations that balance innovation with risk mitigation. A risk-based approach is crucial, tailoring regulations to address specific risks associated with different blockchain technology usages. It is essential to equip regulatory bodies with technical expertise to keep pace with the evolving landscape of blockchain technology and crypto-assets. Learning from global best practices and experiences can provide valuable insights for navigating the regulatory minefield of blockchain technology.

By adopting a proactive, collaborative, and risk-based approach, Nigeria can overcome the legal and regulatory hurdles, creating a framework conducive to responsible and transparent blockchain technology usage in anti-corruption efforts within public administration. This strategic approach can pave the way for a more accountable and efficient government system that aligns with the needs of its citizens.

CONCLUSION

The adoption of blockchain technology and the implementation of anti-corruption measures in public administration have the potential to significantly impact Nigeria's fight against corruption. Blockchain technology offers a decentralized and transparent platform that can enhance accountability and reduce opportunities for corruption. However, it is crucial to address the challenges and risks associated with blockchain technology, such as money laundering and terrorism financing. Additionally, effective anti-corruption measures, including robust regulatory frameworks, strong enforcement mechanisms, and comprehensive training programs, are essential to ensure the successful integration of these technologies in public administration. By leveraging blockchain technology and implementing anti-corruption measures, Nigeria can strengthen its governance structures and contribute to a more transparent and accountable public sector.

RECOMMENDATIONS

To effectively integrate blockchain technology in public administration and combat corruption in Nigeria, several recommendations can be made. Firstly, it is crucial to establish comprehensive regulations and guidelines for the use of blockchain technology in public transactions. This includes licensing and registration requirements for blockchain technology exchanges and wallets, as well as strict anti-money laundering and know-your-customer procedures. Additionally, government agencies should collaborate with blockchain technology experts to develop secure and transparent systems for tracking and recording all blockchain technology transactions. Furthermore, public officials should receive specialized training on the risks and benefits of blockchain technology to ensure they can make informed decisions and detect potential corruption schemes. Lastly, public awareness campaigns should be conducted to educate citizens about the benefits of blockchain technology and how to use it



safely. By implementing these recommendations, the Nigerian government can leverage the potential of blockchain technology to strengthen public administration and combat corruption.

IMPLICATIONS FOR POLICY AND PRACTICE

The implications of integrating blockchain technology into anti-corruption measures within Nigerian public administration extend beyond technological adoption. Policymakers must recognize that effective implementation requires more than regulatory adjustments. Clear, comprehensive regulations tailored to the unique challenges and opportunities presented by blockchain technology usage are imperative (Mutungi, 2023). Policymakers should engage in proactive collaboration with diverse stakeholders, including technology experts, legal professionals, and civil society organizations. The creation of a regulatory framework that addresses concerns related to money laundering, consumer protection, and technological advancements is essential to ensuring responsible and transparent blockchain technology usage (UN Office on Drugs and Crime, 2019; Financial Stability Board, 2020).

Moreover, a risk-based approach should guide regulatory efforts, acknowledging the specific risks associated with various blockchain technology usages in public administration. Policymakers must strike a delicate balance between fostering innovation and mitigating risks to avoid stifling responsible adoption (Swan, 2015). The development of technical expertise within regulatory bodies is crucial for keeping pace with the evolving landscape of blockchain technology and crypto-assets (Tapscott & Tapscott, 2016). The recommendation is for policymakers to prioritize ongoing education and collaboration to enhance the effectiveness of blockchain technology regulations.

The integration of blockchain technology into anti-corruption measures provides a transformative lens through which public administration can be reimagined. Blockchain's immutable and transparent nature can enhance accountability and trust within government processes (Swan, 2015). However, this reimagining necessitates a holistic understanding of the broader implications, not just within regulatory frameworks but also in reshaping public perceptions.

Blockchain technology usage can lead to increased citizen engagement, as transparent and accountable governance fosters trust (Eragbhe et al., 2020). Public relations strategies should be crafted to communicate the benefits and risks effectively, addressing concerns related to money laundering and technological advancements. The decentralized and borderless nature of blockchain technology also opens avenues for citizens' direct participation in decision-making processes, further strengthening democratic ideals (Narayanan et al., 2016).

The integration of blockchain technology into anti-corruption measures within Nigerian public administration is a complex yet promising endeavor. It requires a strategic and collaborative effort from policymakers, technology experts, legal professionals, and civil society. The dialogue on transparency and accountability should extend beyond regulations to encompass broader societal considerations.



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