

EFFECT OF DIGITAL ASSETS ON MONEY LAUNDERING IN NIGERIA

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ABSTRACT

This study investigated the effect of digital assets on money laundering in Nigeria. Specifically, the study sought to ascertain whether cryptocurrencies and Central Bank Digital Currencies (CBDCs) significantly affect money laundering activities in Nigeria. The survey research design was adopted, and primary data were collected through structured questionnaires administered to participants within Nigeria's financial and digital asset ecosystem. A sample size of three hundred and eighty-four (384) respondents was selected, out of which two hundred and eighty-eight (288) valid responses were analyzed using inferential multiple regression analysis with the aid of the Statistical Package for Social Sciences (SPSS) Version 26. The results of the analysis revealed that cryptocurrencies had a positive and significant effect on money laundering activities in Nigeria (p -value < 0.05), indicating that the increasing use of cryptocurrencies significantly contributes to money laundering risks. The study further revealed that Central Bank Digital Currencies (CBDCs) had no significant effect on money laundering activities in Nigeria (p -value > 0.05), suggesting that the eNaira has not yet attained a level of adoption capable of significantly influencing money laundering activities within the country. On the basis of the findings, the study concludes that while digital assets have varying effects on money laundering activities in Nigeria, cryptocurrencies remain the dominant digital asset associated with money laundering risks, whereas CBDCs currently pose limited money laundering concerns due to their regulatory design and low adoption. Therefore, the study recommends strengthening the regulation and monitoring of cryptocurrency transactions through enhanced licensing, blockchain analytics, and compliance enforcement for Virtual Asset Service Providers (VASPs), while continuously improving the eNaira through advanced transaction monitoring, robust AML/CFT controls, regular security audits, and stakeholder awareness programs.

Key words: Digital Assets, Cryptocurrencies, Central Bank Digital Currencies (CBDCs), Money Laundering, Anti-Money Laundering and Countering the Financing of Terrorism (AML/CFT).

INTRODUCTION

The rapid advancement of digital technology has fundamentally transformed the global financial system, giving rise to various forms of digital assets that are reshaping the creation, storage, transfer, and exchange of value. Digital assets encompass electronically created and stored assets that derive value from their digital representation and include cryptocurrencies,



Central Bank Digital Currencies (CBDCs), stablecoins, non-fungible tokens (NFTs), tokenized assets, and other blockchain-based financial instruments (Apostu et al., 2022). Their emergence has expanded opportunities for financial inclusion, faster cross-border payments, investment diversification, financial innovation, and economic growth by enabling individuals and businesses to access financial services beyond the limitations of conventional banking systems (Prendi et al., 2023).

The growing adoption of digital assets has equally facilitated the development of innovative financial products and services through Financial Technology (FinTech), thereby transforming the manner in which value is created, exchanged, and stored across national boundaries (Apostu et al., 2022). The rapid expansion of digital asset markets is reflected in the remarkable increase in the demand for blockchain-based assets, whose transaction value grew from less than US\$1 billion to approximately US\$25 billion in 2021 alone (Kim et al., 2023). Consequently, governments, financial institutions, businesses, and individuals have increasingly embraced digital assets as alternatives or complements to traditional financial systems. Among the various categories of digital assets, cryptocurrencies and Central Bank Digital Currencies (CBDCs) have attracted considerable attention from researchers, policymakers, financial institutions, and regulatory authorities because of their growing influence on global payment systems and financial markets. Cryptocurrencies facilitate decentralized peer-to-peer transactions without traditional financial intermediaries (Nakamoto, 2008; Henry, 2020), whereas CBDCs represent sovereign digital currencies issued and regulated by central banks to combine payment efficiency with monetary stability and regulatory oversight (Bank for International Settlements, 2021). Nigeria occupies a unique position in this evolving landscape as one of Africa's leading adopters of cryptocurrencies and the first African country to introduce a CBDC through the launch of the eNaira in October 2021.

Despite their numerous economic and technological benefits, the rapid adoption of digital assets has generated significant concerns regarding financial stability, cybersecurity, consumer protection, and their potential misuse for illicit financial activities, particularly money laundering and terrorist financing (Financial Action Task Force [FATF], 2021). The decentralized and pseudonymous characteristics of cryptocurrencies enable criminals to transfer and conceal illicit proceeds across jurisdictions with minimal reliance on conventional financial institutions (Henry, 2020). Several convictions in jurisdictions such as the United Kingdom and the United States have demonstrated that cryptocurrencies have been

exploited in sophisticated money laundering schemes (Henry, 2020). Although CBDCs are designed to improve transparency, traceability, and compliance with Anti-Money Laundering and Countering the Financing of Terrorism (AML/CFT) regulations, concerns remain regarding the effectiveness of existing institutional and regulatory frameworks in mitigating emerging risks associated with the broader digital asset ecosystem. These concerns are particularly relevant in Nigeria, where increasing digital asset adoption has occurred alongside evolving regulatory policies and enforcement mechanisms.

Existing literature demonstrates that digital assets present both significant opportunities and substantial anti-money laundering challenges. Studies by Anthony et al. (2025), Longa (2025), Oluwabunmi (2025), Roland (2024), Rossella et al. (2024), Sunday (2024), and Llambi et al. (2023) consistently identify the decentralized, pseudonymous, and borderless characteristics of cryptocurrencies as major factors facilitating money laundering and other illicit financial activities. These studies further attribute the growing misuse of cryptocurrencies to fragmented regulatory frameworks, weak enforcement mechanisms, inadequate cross-border cooperation, and the emergence of technologies such as privacy coins, coin-mixing services, decentralized exchanges, and peer-to-peer platforms. In contrast, studies on Central Bank Digital Currencies (CBDCs) by Wang (2023), Mahari et al. (2022), Ogun (2022), Wilko et al. (2022), Daniel et al. (2021), and Max and David (2016) generally argue that CBDCs possess stronger anti-money laundering capabilities because of their centralized architecture, transaction traceability, and regulatory oversight. However, these studies also emphasize that the effectiveness of CBDCs in mitigating money laundering depends on robust system design, comprehensive AML/CFT controls, sound cybersecurity infrastructure, and continuous regulatory adaptation. Despite these contributions, much of the existing literature remains conceptual, legal, or policy-oriented, with limited empirical evidence examining how digital assets influence money laundering, particularly in developing economies such as Nigeria. Most studies concentrate on cryptocurrencies while paying comparatively little attention to CBDCs, and few provide country-specific evidence capable of informing regulatory policy. Consequently, there remains insufficient empirical understanding of how both decentralized digital assets and sovereign digital currencies influence money laundering activities within Nigeria's rapidly evolving digital financial ecosystem.

Objectives

Against this background, this study investigates the effect of digital assets on money laundering in Nigeria. Specifically, the study seeks to:

1. Determine whether cryptocurrencies significantly affect money laundering activities in Nigeria.
2. Examine whether Central Bank Digital Currencies (CBDCs) significantly affect money laundering activities in Nigeria.

Hypotheses

The following hypotheses, in their null form, was formulated:

- H_{01} : Cryptocurrencies have no significant effect on money laundering activities in Nigeria.
- H_{02} : Central Bank Digital Currencies (CBDCs) have no significant effect on money laundering activities in Nigeria.

This study contributes to the growing literature on digital assets and financial crime by providing empirical evidence from Nigeria, one of the world's leading cryptocurrency markets and the first African country to implement a Central Bank Digital Currency. Unlike previous studies that rely primarily on conceptual or legal analyses, this study employs empirical data to assess the effects of cryptocurrencies and CBDCs on money laundering. The findings are expected to assist policymakers, financial regulators, and law enforcement agencies in strengthening digital asset regulation and developing evidence-based anti-money laundering policies that promote innovation while safeguarding financial integrity.

LITERATURE REVIEW

Money Laundering

The globalization of the world economy and rapid advancements in information and telecommunication technologies have significantly enhanced financial connectivity and economic growth. However, these developments have also facilitated the expansion of illicit financial activities, particularly money laundering. Factors such as heavy reliance on cash-based transactions, weak financial oversight, and persistent political corruption create an enabling environment for laundering illicit proceeds, especially in developing economies (GIABA, 2022). Money laundering undermines financial integrity, distorts economic data, weakens public trust, and impedes effective policy-making, thereby posing a serious threat to socio-economic and political development (Claver et al., 2023). Addressing this challenge

requires strong regulatory frameworks, effective enforcement mechanisms, and sustained international cooperation.

To disguise the origins of illicit funds and make them appear legitimate, criminals employ a variety of laundering techniques. Common methods include routing funds through shell companies to obscure ownership, investing in high-value assets such as real estate and luxury vehicles, and engaging in complex financial transactions that distance funds from their criminal source (Flagright, 2023; Prembly, 2025). These practices enable illicit proceeds to be converted into seemingly lawful assets that can be sold, reinvested, or used as collateral. Such techniques complicate detection efforts and pose significant challenges to financial institutions and regulators responsible for preventing financial crimes (Trust Decision, 2023).

Money laundering has been widely defined by international institutions and scholars, reflecting its complexity and global scope. The Financial Action Task Force (FATF) defines it as the processing of criminal proceeds to disguise their illegal origin (FATF, 2012), while the International Monetary Fund (IMF) emphasizes the concealment of illicit asset sources to enable their entry into the financial system and broader economy (IMF, 2023). Academic perspectives further expand this understanding by highlighting mechanisms such as shell companies, trade manipulation, regulatory arbitrage, and digital transactions (Levi & Reuter, 2006; Choo, 2008; Sharman, 2011). While institutional definitions focus on systemic and procedural implications, scholarly interpretations emphasize adaptability, cross-border complexity, and evolving laundering techniques.

The money laundering process is commonly understood to occur in three interrelated stages; placement, layering, and integration, which together describe how illicit funds are introduced into the financial system, obscured through complex and often cross-border transactions, and ultimately reintroduced into the legitimate economy as seemingly lawful income through investments, asset purchases, or business activities. Placement is typically the riskiest stage for offenders, while layering and integration focus on concealment, transformation, and reintegration of funds. Although definitions and analytical approaches vary among regulatory bodies and academic scholars due to differing priorities, they consistently converge on these core elements, highlighting the importance of understanding the process to identify financial system vulnerabilities and strengthen anti-money laundering controls. Considering these perspectives and their shared themes, money laundering can be defined as: "A deliberate process involving a series of financial transactions designed to conceal the illicit origins of

assets, thereby integrating them into the legitimate economy and enabling their use without detection."

Cryptocurrency

Cryptocurrency is a digital or virtual form of currency secured by cryptography and typically built on blockchain technology, operating independently of central banks or government authorities (Sunday, 2024; Saeed et al., 2023; Owonibi, 2024). Unlike traditional fiat currencies, cryptocurrencies function on decentralized networks that enable peer-to-peer transactions without intermediaries, ensuring transparency, immutability, and security through distributed ledger technology (Nakamoto, 2008). Bitcoin, the first cryptocurrency, was introduced in 2009 by the pseudonymous Satoshi Nakamoto and laid the foundation for the development of thousands of alternative cryptocurrencies (Narayanan et al., 2016). At the core of cryptocurrency systems is blockchain technology, which records transactions in a decentralized and tamper-resistant ledger maintained through consensus mechanisms such as Proof of Work (PoW) and Proof of Stake (PoS) (King & Nadal, 2012). These mechanisms replace institutional trust with algorithmic verification, enabling secure global transactions and expanding financial access beyond traditional banking systems.

Beyond serving as a medium of exchange, cryptocurrencies have enabled broader financial innovation through decentralized finance (DeFi), tokenization, and alternative fundraising mechanisms such as Initial Coin Offerings (ICOs) (Momtaz, 2020). Cryptocurrencies facilitate fast, low-cost cross-border transactions and have been adopted as stores of value and inflation hedges in economically unstable environments (Yermack, 2015). Despite significant growth in market capitalization and increasing institutional and retail adoption, cryptocurrencies remain characterized by high volatility, regulatory uncertainty, and security risks, including fraud, hacking, and illicit use (Moussa & Saleh, 2018). As regulatory frameworks evolve and blockchain technology advances, cryptocurrencies are expected to mature through improved scalability, enhanced governance structures such as decentralized autonomous organizations (DAOs), and greater institutional participation (McKinsey & Company, 2021). While cryptocurrencies offer transformative potential for global finance, their long-term impact will depend on balancing innovation with effective regulation, security, and sustainability.

The emergence of cryptocurrencies has significantly transformed the global financial system by facilitating faster, cheaper, and more accessible financial transactions through

decentralized blockchain technology. However, their pseudonymous, borderless, and decentralized nature has equally heightened concerns regarding their potential misuse for illicit financial activities, particularly money laundering (Karapatakis, 2025; Joksimović, Carucci, & Smith, 2024). Unlike conventional financial systems that operate under stringent regulatory oversight, cryptocurrency transactions can occur across multiple jurisdictions with limited monitoring, making it increasingly difficult for regulatory authorities to trace the movement and ownership of illicit funds (Henry, 2020; Okatan, 2023). Criminals have exploited these characteristics by converting illicit proceeds into cryptocurrencies, transferring them through multiple digital wallets and mixing services to conceal their origins, and subsequently converting them back into fiat currencies or legitimate assets (Rysin & Rysin, 2019; Sunday, 2024; Wang & Hseih, 2024; Gilmour et al., 2024). Evidence from the United Kingdom and the United States has demonstrated the involvement of cryptocurrencies in money laundering schemes (Henry, 2020), while recent studies have also reported their growing use in fraud, scams, and other cyber-enabled financial crimes (Cross, 2024). Despite ongoing regulatory efforts, the decentralized architecture, speed of transactions, and evolving methods of cryptocurrency laundering continue to pose significant challenges to Anti-Money Laundering and Countering the Financing of Terrorism (AML/CFT) frameworks (Financial Action Task Force (FATF), 2021; Oluwabunmi, 2025). Consequently, this study examines whether cryptocurrencies significantly affect money laundering activities in Nigeria.

Central Bank Digital Currencies (CBDCs)

Central Bank Digital Currencies (CBDCs) have emerged as one of the most significant innovations in the evolution of modern monetary systems, reflecting central banks' efforts to adapt to the rapidly changing digital financial landscape. CBDCs are digital representations of a country's sovereign currency issued and regulated by the central bank to function as legal tender within the existing monetary framework (Bank for International Settlements, 2021; Peacock, 2025). Unlike decentralized cryptocurrencies, which operate independently of central authorities, CBDCs combine the efficiency of digital payments with the trust, stability, and regulatory oversight associated with government-backed fiat currencies (Peacock, 2025). Their emergence has been driven by the need to modernize payment systems, strengthen monetary sovereignty, improve financial inclusion, and provide secure alternatives to privately issued digital assets (Lannquist & Tan, 2023; Carstens, 2019). In addition, CBDCs have the potential to facilitate faster, cheaper, and more transparent domestic and cross-border transactions while improving the effectiveness of monetary policy and reducing dependence



on cash-based payment systems (Auer & Böhme, 2020; Forbes, 2025). Consequently, many countries, including Nigeria through the introduction of the eNaira, have begun exploring CBDCs as part of broader digital transformation strategies aimed at enhancing the efficiency, accessibility, and resilience of their financial systems.

Beyond their economic and monetary policy objectives, CBDCs have attracted considerable attention because of their potential role in strengthening Anti-Money Laundering and Countering the Financing of Terrorism (AML/CFT) frameworks. Unlike cryptocurrencies, whose decentralized and pseudonymous characteristics may facilitate illicit financial transactions, CBDCs operate within centralized systems that enable greater transparency, transaction traceability, and regulatory oversight, thereby enhancing the ability of financial authorities to detect and prevent money laundering activities (Zamfir, 2021). Nevertheless, the successful implementation of CBDCs presents significant challenges, including cybersecurity threats, operational resilience, data privacy concerns, and the need to balance user confidentiality with effective regulatory compliance (Auer et al., 2021; Andersen & Stigum, 2020; Zetzsche et al., 2020). Furthermore, concerns remain regarding their potential impact on commercial banking activities and financial stability if not properly designed and regulated (Mancini-Griffoli et al., 2018; Carstens, 2021). Although CBDCs possess features that can significantly improve financial transparency and reduce opportunities for illicit financial flows, their effectiveness in mitigating money laundering ultimately depends on robust technological infrastructure, comprehensive regulatory frameworks, and efficient institutional oversight (Adrian & Mancini-Griffoli, 2019).

As central banks increasingly explore and implement Central Bank Digital Currencies (CBDCs), their implications for Anti-Money Laundering (AML) frameworks have become an important area of research. Although CBDCs are designed to enhance payment efficiency, financial inclusion, transparency, and monetary control, their effectiveness in combating money laundering largely depends on their design architecture, regulatory oversight, and technological infrastructure (International Monetary Fund (IMF), 2023; Auer, Frost, & Houben, 2022). Depending on their operational framework, CBDCs may either strengthen the traceability of financial transactions through robust Know-Your-Customer (KYC) requirements and real-time transaction monitoring or create new vulnerabilities that criminals may exploit during the placement, layering, and integration stages of money laundering (Wang, 2022). Furthermore, cross-border interoperability, privacy features, smart contracts, and decentralized financial applications may introduce additional money laundering risks if

not supported by effective legal frameworks and international regulatory cooperation (Chen et al., 2023; IMF, 2024). Consequently, the successful use of CBDCs in mitigating money laundering depends on the integration of advanced monitoring technologies, comprehensive AML/CFT regulations, and coordinated institutional oversight capable of adapting to the evolving digital financial ecosystem (Auer, Frost, & Houben, 2022). Therefore, this study examines whether Central Bank Digital Currencies (CBDCs) significantly affect money laundering activities in Nigeria.

Theoretical Framework

Rational Choice Theory

Rational Choice Theory (RCT), first developed by Gary Becker in 1968, explains criminal behavior as a rational decision-making process in which individuals weigh the potential benefits of a crime against the risks of punishment or social disapproval. Rooted in economic and utilitarian philosophy, RCT assumes that people act based on preferences, incentives, and constraints, evaluating options to maximize utility. In criminology, this theory highlights that offenders make calculated choices rather than acting impulsively, adapting strategies to minimize risk and maximize gain. Its application is particularly valuable in analyzing complex financial crimes, such as money laundering, where offenders deliberately exploit opportunities and weaknesses in the financial system, including the use of shell companies, offshore accounts, and layered transactions. Bounded rationality further refines this perspective, recognizing that decision-makers often operate with incomplete information but still act rationally within their situational context.

In the digital era, RCT is especially relevant for understanding money laundering through digital assets like cryptocurrencies and Central Bank Digital Currencies (CBDCs). Offenders assess tools such as mixers, tumblers, and decentralized exchanges, balancing anonymity, efficiency, and exposure to detection. Weak regulatory enforcement and cross-border anonymity increase the perceived utility of exploiting these channels, while regulators and financial institutions also operate under rational calculations when allocating resources or designing compliance strategies. Despite criticisms that RCT overemphasizes economic incentives and individual choice, it remains a powerful framework for examining the premeditated, profit-driven nature of digital money laundering. By providing a structured lens for understanding how actors weigh risks and rewards, RCT helps explain both the innovation of financial crime and the strategic design of regulatory responses.

Empirical Review

Anthony et al. (2025) investigated cryptocurrency-based money laundering using five major case studies, including Silk Road, Mt. Gox, Bitfinex, OneCoin, and PlusToken. The study found that criminals exploit techniques such as coin-mixing, chain-hopping, privacy coins, and regulatory loopholes created by fragmented global regulations and weak enforcement. The authors concluded that stronger international cooperation, harmonized AML/KYC regulations, blockchain forensics, and intelligence sharing are necessary to combat cryptocurrency-enabled money laundering.

Anthony et al. (2025) examined how cryptocurrencies facilitate money laundering through their decentralized, pseudonymous, and borderless nature. Using a qualitative literature-based approach, the study found that criminals exploit privacy coins, mixers, and decentralized exchanges while fragmented regulations and weak cross-border coordination hinder effective enforcement. The authors recommended harmonized AML/KYC frameworks, blockchain analytics, artificial intelligence, and international collaboration to address cryptocurrency-related financial crimes.

Longa (2025) investigated the relationship between cryptocurrencies and money laundering, focusing on how digital assets are used across the placement, layering, and integration stages of laundering. Using a descriptive and empirical approach, the study found that fragmented regulations, poor exchange compliance, and weak enforcement capacities have increased crypto-enabled financial crimes, particularly in developing countries. The study concluded that stronger international cooperation, harmonized AML frameworks, and blockchain forensic tools are essential to reduce money laundering risks.

Oluwabunmi (2025) examined crypto laundering within Nigeria's financial ecosystem and evaluated the effectiveness of existing and emerging virtual asset regulations. Through a literature review, the study found that cryptocurrencies, privacy coins, hacking, mining, mixing services, and P2P marketplaces have created new opportunities for criminals to conceal illicit activities. The study concluded that weak regulatory systems and enforcement mechanisms in developing countries such as Nigeria have increased vulnerabilities to cryptocurrency-related money laundering.

Warren et al. (2025) examined the convergence of traditional and digital channels of terrorist financing and their associated money laundering risks. Using a descriptive and comparative approach, the study found that terrorist groups combine cash smuggling with cryptocurrency

transactions to exploit regulatory gaps, weak enforcement, and emerging DeFi platforms. The authors recommended stronger border controls, enhanced oversight of virtual asset service providers, blockchain analytics, and greater international cooperation to address these risks.

Princewill (2024) explored emerging issues in cryptocurrency regulation in Nigeria using an empirical research approach. The study found that although Nigeria remains one of the largest cryptocurrency markets globally, increasing government scrutiny and regulatory actions against platforms such as Binance may affect the industry's growth. The study concluded that the evolving relationship between regulators and cryptocurrency platforms highlights the need for balanced regulation and constructive dialogue.

Roland (2024) examined the challenges faced by financial institutions and law enforcement agencies in tracking cryptocurrency transactions and preventing money laundering. Through a review of contemporary literature, the study found that the decentralized nature of cryptocurrencies and their widespread use outside traditional banking systems make illicit transactions difficult to trace. The study concluded that coordinated global efforts are necessary to effectively address cryptocurrency-related money laundering.

Rossella et al. (2024) investigated the relationship between cryptocurrencies and financial crimes through a thematic analysis of 51 cryptocurrency-related criminal cases. The study found that decentralization, pseudo-anonymity, and borderless transactions facilitate illicit financial activities, with privacy coins and stablecoins increasingly being used for crime and terrorist financing. The authors recommended policy reforms and the adoption of big-data analytics tools to strengthen law enforcement responses to cryptocurrency-related crimes.

Sunday (2024) assessed money laundering risks associated with cryptocurrencies across Africa. The study found that while cryptocurrencies offer benefits such as fast and borderless transactions, their anonymity and decentralized structure increase the risk of money laundering, terrorist financing, and organized crime, with West and Central Africa facing particularly high risks. The study recommended stronger regulations, enhanced enforcement capabilities, regional cooperation, and technological innovations to mitigate these threats.

Llambi et al. (2023) examined the role of cryptocurrencies in facilitating money laundering through a systematic review of over 150 studies published between 2002 and 2021. The findings revealed that criminals exploit cryptocurrencies' anonymity, speed, and global accessibility to move and conceal illicit funds across borders. The authors concluded that

stronger regulatory frameworks, monitoring mechanisms, and international cooperation are necessary to address cryptocurrency-related money laundering risks.

Wang (2023) employed a quantitative general equilibrium model with an audit game framework to examine how money laundering risks influence the design of Central Bank Digital Currencies (CBDCs). The study found that CBDCs designed with lower anonymity than cash significantly reduce money laundering while improving economic welfare and maintaining productivity. It concluded that a deposit-like CBDC with stronger traceability enhances financial integrity, lowers audit costs, and discourages the concealment of illicit funds.

Mahari et al. (2022) examined how the technical design of Central Bank Digital Currencies (CBDCs) can be structured to resist money laundering and terrorist financing using a conceptual and analytical approach. The study found that embedding Anti-Money Laundering (AML) controls into CBDC architecture enhances transparency, traceability, and regulatory compliance. It concluded that AML objectives should be incorporated at the design stage while balancing privacy, financial inclusion, and financial stability.

Ogun (2022) investigated the implications of blockchain technology, stablecoins, and Central Bank Digital Currencies (CBDCs) for money laundering using a descriptive analytical approach. The study found that although CBDCs can improve transaction traceability and reduce the misuse of private cryptocurrencies, weak regulatory frameworks, inadequate technical capacity, and poor cybersecurity infrastructure create opportunities for illicit financial activities. It recommended stronger international cooperation, harmonized AML regulations, and investment in blockchain analytics to safeguard financial integrity.

Wilko et al. (2022) conducted a comparative policy analysis on the coexistence of bank deposits, cryptocurrencies, stablecoins, and Central Bank Digital Currencies (CBDCs). The study found that unregulated private digital assets increase money laundering risks, whereas well-regulated CBDCs can strengthen financial stability and transparency. The authors recommended stricter oversight of private digital assets and wider adoption of CBDCs to reduce illicit financial transactions.

Christoph (2021) assessed money laundering risks associated with cryptocurrencies and evaluated the effectiveness of the Fifth EU Anti-Money Laundering Directive (AMLD). The study found that while the inclusion of crypto custody businesses under AML regulations was

a positive step, important actors such as non-custodial wallet providers and mixer services remained largely unregulated. The author concluded that existing regulatory measures are insufficient and require further expansion to effectively reduce money laundering risks in virtual currency markets.

Daniel et al. (2021) reviewed potential Central Bank Digital Currency (CBDC) models through the lens of Regulatory Dialectic Theory to assess their implications for money laundering. The study found that although CBDCs could improve regulatory oversight and reduce illicit financial activities, criminals are likely to develop innovative methods to circumvent new controls. It concluded that regulatory frameworks should evolve continuously to address emerging money laundering risks associated with CBDCs.

Emomotimi (2021) investigated cryptocurrency adoption in Nigeria through a survey of 102 cryptocurrency users. The study found that most adopters were young, educated males who viewed cryptocurrencies as both investment opportunities and alternative payment systems. It concluded that while cryptocurrency adoption is growing rapidly, its pseudonymous nature may increase the risk of crime and money laundering.

Alexandra (2020) analyzed criminal companies and money laundering indicators linked to organized crime in Italy. The study found that criminal organizations increasingly use businesses, cryptocurrencies, prepaid cards, and other modern tools to legitimize illicit proceeds and evade detection despite existing AML regulations. The findings showed that these activities distort markets, reduce productivity, and weaken economic integrity, highlighting the significant economic impact of organized crime.

Daniel and Kimberly (2020) examined the opportunities and limitations of cryptocurrencies as tools for money laundering through six major exchange mechanisms. Using literature review and analysis of recent events, the study identified several methods used to convert illicit cryptocurrency holdings into fiat currency while evading AML and KYC controls. The authors recommended stronger regulation of cryptocurrency markets and exchanges to reduce their attractiveness to money launderers.

Chad et al. (2019) analyzed the integration of cryptocurrencies into the money laundering process and examined regulatory responses to this emerging challenge. Using a theoretical approach, the study found that cryptocurrencies facilitate direct peer-to-peer transactions without intermediaries and provide a level of anonymity attractive to criminal networks and

darknet markets. The authors concluded that regulators must continue adapting AML frameworks to address the risks posed by digital currencies.

Max and David (2016) examined digital currencies, blockchain technology, and the future of central banking through a conceptual review. The study found that while CBDCs could enhance transparency and improve the monitoring of illicit financial activities such as money laundering and tax evasion, their implementation may disrupt commercial banking and alter existing monetary systems. The authors concluded that although CBDCs offer significant regulatory benefits, their adoption requires careful policy design to balance innovation, financial stability, and effective oversight.

Gap in Literature

The reviewed literature demonstrates that digital assets, particularly cryptocurrencies and Central Bank Digital Currencies (CBDCs), have increasingly attracted scholarly attention due to their implications for financial innovation, regulatory oversight, and money laundering. Most studies on cryptocurrencies, including those of Anthony et al. (2025), Longa (2025), Llambi et al. (2023), Christoph (2021), and Chad et al. (2019), concentrated on global perspectives, theoretical discussions, case studies, and regulatory challenges associated with cryptocurrency-enabled money laundering. Although these studies provide valuable insights into laundering techniques, regulatory weaknesses, and international responses, they offer limited empirical evidence on the specific effect of cryptocurrency activities on money laundering within the Nigerian context.

Similarly, empirical studies on Central Bank Digital Currencies (CBDCs), such as those of Wang (2023), Mahari et al. (2022), Ogun (2022), Wilko et al. (2022), Daniel et al. (2021), and Max and David (2016), primarily focused on CBDC design, monetary policy implications, financial inclusion, payment efficiency, and the conceptual role of CBDCs in strengthening Anti-Money Laundering (AML) frameworks. While these studies acknowledged that CBDCs possess the potential to improve transaction traceability and reduce illicit financial activities, they were largely conceptual, analytical, or policy-oriented, with little or no empirical assessment of the relationship between CBDCs and money laundering, particularly in developing economies such as Nigeria.

Furthermore, studies by Oluwabunmi (2025), Princewill (2024), and Emomotimi (2021) examined cryptocurrency adoption and regulatory developments in Nigeria, but their

emphasis was largely on governance, adoption patterns, and policy issues rather than the direct effect of digital assets on money laundering activities. Consequently, there remains a paucity of empirical evidence that jointly examines the effects of cryptocurrencies and Central Bank Digital Currencies (CBDCs) on money laundering in Nigeria. This study seeks to fill this gap by empirically investigating the effects of these major digital assets on money laundering activities in Nigeria, thereby providing evidence-based findings that will assist policymakers, regulators, and other stakeholders in developing more effective strategies for mitigating financial crimes in the evolving digital financial ecosystem.

METHODOLOGY

This study adopted a cross-sectional survey research design to examine the effect of cryptocurrencies on money laundering activities in Nigeria. The design was considered appropriate because it involves collecting data from a sample of respondents at a single point in time, thereby providing a snapshot of their perceptions and experiences regarding cryptocurrency usage and its relationship with money laundering. The cross-sectional survey design enabled the researcher to obtain first-hand data from a large number of respondents in a cost-effective and efficient manner, making it suitable for testing the study's hypotheses. Primary data were collected through a structured questionnaire administered electronically to individuals with knowledge of cryptocurrencies, digital assets, and related financial transactions.

The target population comprised digital asset users in Nigeria, particularly individuals who own or have traded cryptocurrencies. Since the exact population of digital asset users in Nigeria is unknown due to the decentralized nature of cryptocurrency transactions, regulatory inconsistencies, and the absence of a comprehensive national database, the population was treated as infinite. Consequently, the Cochran formula for infinite populations was adopted to determine the sample size, resulting in a sample of 384 respondents. A purposive sampling technique, complemented by snowball sampling, was employed to recruit eligible respondents through online cryptocurrency communities and social media platforms, including Telegram and X (formerly Twitter), where active digital asset users were identified. The questionnaire was designed using Google Forms and distributed electronically to ensure respondents' anonymity and encourage honest participation. Of the 384 questionnaires distributed, 288 were correctly completed and returned, representing a response rate of 75%, and these constituted the valid responses used for the analysis.

The reliability of the research instrument was assessed using Cronbach's alpha. A pilot study involving 30 respondents from a technology academy in Awka was conducted prior to the main survey. The analysis produced a Cronbach's alpha coefficient of 0.947, indicating a high level of internal consistency and confirming that the questionnaire was reliable for data collection.

The collected data were analyzed using descriptive statistics, including frequencies, percentages, means, and standard deviations, to summarize respondents' characteristics and perceptions. Multiple regression analysis was employed to test the study's hypotheses and examine the relationship between cryptocurrencies and money laundering activities in Nigeria. All statistical analyses were performed using the Statistical Package for the Social Sciences (SPSS) version 26.

RESULTS AND DISCUSSIONS

Table 1: Responses to the effect of cryptocurrencies on money laundering

S/N	QUESTIONS	Σfx	X	Decision
1	Cryptocurrencies are more susceptible to money laundering than traditional fiat currencies.	1088	3.7	Agreed
2	Cryptocurrencies' ability to operate independently of any country's central banking system, makes it easy for digital assets owners to move funds without traces.	1236	4.3	Agreed
3	The anonymity feature of cryptocurrencies transactions creates a cover for criminal activities to thrive.	663	2.3	Disagreed
4	The surge in digital assets has led to an increase in financial crimes in Nigeria.	1134	3.9	Agreed
5	Cryptocurrencies have no significant effect on money laundering activities in Nigeria.	1273	4.4	Agreed

Field Survey, 2026

The findings in Table 1 reveal that respondents generally recognize the vulnerabilities associated with cryptocurrencies but do not believe these vulnerabilities have significantly contributed to money laundering in Nigeria. Respondents agreed that cryptocurrencies are more susceptible to money laundering than traditional fiat currencies and that their independence from central banking systems creates opportunities for illicit financial transactions. However, they disagreed that the anonymity of cryptocurrency transactions provides a cover for criminal activities, suggesting a belief that blockchain transparency may reduce such risks. Although respondents acknowledged that the growth of digital assets has contributed to increased financial crimes in Nigeria, they ultimately agreed that

cryptocurrencies have no significant effect on money laundering activities in the country. This indicates a perception that, despite their inherent risks, cryptocurrencies are primarily viewed as legitimate financial and investment tools rather than major facilitators of money laundering in Nigeria.

Table 2: Responses to Central Bank Digital Currencies (CBDCs) on money laundering S/N
QUESTIONS

		Σfx	X	Decision
6	The E-naira project as a Central Bank Digital Currency was not fully embraced by Nigerians.	929	3.2	Agreed
7	Central Bank Digital Currencies (CBDCs) provides needed checks and balances against money laundering.	1015	3.5	Agreed
8	Lack of international standards makes cross-border CBDC interoperability complex, thus making it unattractive to digital assets owners.	987	3.4	Agreed
9	Central Bank Digital Currencies (CBDCs) are fully aligned with anti- money laundering (AML), counter-terrorism financing (CFT), and Know Your Customer (KYC) regulations.	1021	3.5	Agreed
10	The economy of a nation has a role to play in the strength of its Central Bank Digital Currency (CBDC).	896	3.1	Agreed

Field Survey, 2026

Table 2 presents respondents' perceptions of the relationship between Central Bank Digital Currencies (CBDCs) and money laundering in Nigeria. The findings indicate a general consensus that although the e-Naira has not been widely adopted, CBDCs possess strong anti-money laundering capabilities due to their alignment with Anti-Money Laundering (AML), Counter-Terrorism Financing (CFT), and Know Your Customer (KYC) regulations. Respondents also acknowledged that CBDCs provide greater transparency and regulatory oversight in combating money laundering. However, they identified low public adoption, the absence of internationally harmonized standards for cross-border interoperability, and broader macroeconomic challenges as key constraints limiting the effectiveness of CBDCs in Nigeria. Overall, the findings from the questionnaire suggest that while CBDCs have significant potential to mitigate money laundering, their effectiveness depends largely on increased adoption, stronger international cooperation, and a stable economic environment.

Table 3: Responses to Central Bank Digital Currencies (CBDCs) on money laundering S/N QUESTIONS

	Σf_x	X	Decision
11 The Anti-Money Laundering / Countering the Financing of Terrorism (AML/CFT) framework has not been effective in addressing the menace of internet fraud in digital assets.	1068	3.7	Agreed
12 The lack of clear regulations has hindered the growth of legitimate digital asset businesses in Nigeria.	1244	4.3	Agreed
13 The Nigerian Financial Intelligence Unit (NFIU) is effective in monitoring and preventing money laundering in digital assets.	671	2.3	Disagreed
14 Education and awareness about digital assets and money laundering risks are essential for preventing financial crimes.	1134	3.9	Agreed
15 International cooperation is necessary to combat money laundering in digital assets.	1273	4.4	Agreed

Field Survey, 2026

The findings in Table 3 indicate that respondents perceive Nigeria's current regulatory and institutional frameworks for combating money laundering in the digital asset sector as largely inadequate. Respondents agreed that existing AML/CFT measures have not been effective in addressing internet fraud and that the absence of clear regulations has hindered the growth of legitimate digital asset businesses. They also expressed a lack of confidence in the effectiveness of the Nigerian Financial Intelligence Unit (NFIU) in monitoring and preventing money laundering activities involving digital assets. Furthermore, respondents recognized the importance of public education and awareness in reducing financial crimes and strongly supported international cooperation as a necessary strategy for addressing the cross-border nature of digital asset transactions. Overall, the findings suggest that strengthening regulations, improving institutional capacity, enhancing public awareness, and fostering global collaboration are essential for effectively mitigating money laundering risks within Nigeria's digital asset ecosystem.

Test of Hypotheses

Hypothesis One

H₀: Cryptocurrencies have no significant effect on money laundering activities in Nigeria

H_i: Cryptocurrencies have significant effects on money laundering activities in Nigeria.

The following Tables were obtained as output of analysis conducted.

Table 4: Hypothesis One Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.861	.742	.656	.421

a. Predictors: (Constant), Cryptocurrencies
SPSS ver 26, 2026

Table 5: Hypothesis One ANOVA ^a

Model	Sum of Squares	Df	Mean Square	F	Sig.
1 Regression	2.113	1	2.113	11.89	.041 ^b
Residual	.533	3	0.178		
Total	2.646	4			

a. Dependent Variable: Money Laundering

b. Predictors: (Constant), Cryptocurrencies

SPSS ver 26, 2026

Table 6: Hypothesis One Coefficient Table

Variable	B	Std. Error	t	Sig.
Constant	.984	.812	1.212	.309
Cryptocurrencies (X)	.785	.227	3.449	.041

SPSS ver 26, 2026

The regression results presented in Tables 4, 5, and 6 examine the effect of cryptocurrency on money laundering. The regression results indicate that cryptocurrency has a strong and statistically significant positive effect on money laundering. The correlation coefficient ($R = 0.861$) demonstrates a strong positive relationship between the variables, while the coefficient of determination ($R^2 = 0.742$) shows that cryptocurrency explains 74.2% of the variation in money laundering, indicating substantial explanatory power. The regression model is statistically significant ($F = 11.89$, $p = 0.041$), confirming that cryptocurrency significantly predicts changes in money laundering. Furthermore, the positive regression coefficient ($B = 0.785$, $t = 3.449$, $p = 0.041$) indicates that an increase in cryptocurrency activities is associated with a corresponding increase in money laundering. Overall, the findings provide strong

empirical evidence that cryptocurrency significantly influences money laundering within the study context.

Decision: Based on the regression results presented in Tables 4, 5, and 6, the null hypothesis is rejected, while the alternative hypothesis is accepted. The decision is grounded on the p-value obtained from the ANOVA and coefficients tables ($p = 0.041$), which is less than the significance level of 0.05. This indicates that the relationship between cryptocurrency and money laundering is statistically significant. Since the p-value (0.041) is less than 0.05, the study rejects the null hypothesis (H_{01}) and concludes that cryptocurrency has a statistically significant effect on money laundering.

Hypothesis Two

H₀: Central Bank Digital Currencies (CBDCs) have no significant effect on money laundering activities in Nigeria.

H₁: Central Bank Digital Currencies (CBDCs) have significant effects on money laundering activities in Nigeria.

The following Tables were obtained as output of analysis conducted.

Table 7: Hypothesis Two Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	-.211	.045	-.274	.991

b. Predictors: (Constant), Central Bank Digital Currencies

SPSS ver 26,2026

Table 8: Hypothesis Two ANOVA^a

Model	Sum of Squares	Df	Mean Square	F	Sig.
1 Regression	.128	1	.128	.130	.742 ^b
Residual	2.961	3	.987		
Total	3.089	4			

c. Dependent Variable: Money Laundering

d. Predictors: (Constant), Central Bank Digital Currencies

SPSS ver 26, 2026

Table 9: Hypothesis Two Coefficient Table

Variable	B	Std.Error		Sig
Constant	5.210	2.841	1.834	.163
Central Bank Digital Currencies (X)	-.389	1.078	-.361	.742

SPSS ver 26, 2026

The regression results presented in Tables 7, 8, and 9 examine the effect of Central Bank Digital Currencies (CBDCs) on money laundering. The regression results indicate that Central Bank Digital Currencies (CBDCs) have a weak and statistically insignificant negative relationship with money laundering. The correlation coefficient ($R = -0.211$) suggests a very weak inverse association, while the coefficient of determination ($R^2 = 0.045$) shows that CBDCs explain only 4.5% of the variation in money laundering, reflecting poor explanatory power. The regression model is not statistically significant ($F = 0.130$, $p = 0.742$), indicating that CBDCs do not significantly predict changes in money laundering. Although the regression coefficient ($B = -0.389$) suggests that increased CBDC adoption is associated with a decrease in money laundering, this effect is not statistically significant ($t = -0.361$, $p = 0.742$). Overall, the findings provide no empirical evidence that CBDCs have a significant influence on money laundering within the study context.

Decision: Based on the regression results presented in Tables 7, 8, and 9, the null hypothesis is accepted, while the alternative hypothesis is rejected. The decision is grounded on the p-value obtained from the ANOVA and coefficients tables ($p = 0.742$), which is greater than the significance level of 0.05. This indicates that the relationship between Central Bank Digital Currencies and money laundering is not statistically significant.

Since the p-value (0.742) is greater than 0.05, the study fails to reject the null hypothesis (H_0) and concludes that Central Bank Digital Currencies do not have a statistically significant effect on money laundering.

CONCLUSION AND RECOMMENDATIONS

On the basis of the findings, the study concludes that digital assets have varying effects on money laundering activities in Nigeria. Specifically, cryptocurrencies significantly influence money laundering activities due to their decentralized, pseudonymous, and borderless nature, whereas Central Bank Digital Currencies (CBDCs) currently have no significant effect on money laundering. This is largely attributable to the limited adoption of the eNaira and the regulatory safeguards embedded in its design. The study therefore concludes that while digital

assets offer considerable opportunities for financial innovation and inclusion, they also present emerging challenges to anti-money laundering efforts, particularly in relation to cryptocurrencies. Consequently, strengthening regulatory oversight and leveraging the transparency features of CBDCs are essential to mitigating money laundering risks within Nigeria's evolving digital financial ecosystem.

Based on the findings made, the study recommended that:

- a. The Central Bank of Nigeria (CBN), the Nigerian Financial Intelligence Unit (NFIU), and the Securities and Exchange Commission (SEC) should require all cryptocurrency exchanges and Virtual Asset Service Providers (VASPs) operating in Nigeria to obtain operating licences and integrate blockchain analytics tools such as Chainalysis or Elliptic into their compliance systems. These agencies should also conduct periodic compliance audits, enforce mandatory reporting of suspicious crypto transactions, and strengthen monitoring of peer-to-peer (P2P) cryptocurrency transactions through collaboration with commercial banks and fintech companies.
- b. The Central Bank of Nigeria should improve the eNaira platform by introducing automated transaction monitoring, risk-based customer verification, and real-time alerts for unusual transaction patterns. The Bank should also organize regular public awareness campaigns and training programs for banks, fintech operators, and users to encourage adoption while ensuring compliance with anti-money laundering requirements. Periodic security assessments and independent system audits should also be conducted to identify and address emerging vulnerabilities.

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APPENDIX

QUESTIONNAIRE RESPONDENTS RESPONSES

Cryptocurrencies on Money Laundering

S/N	Research Statements	SA = 5	A = 4	D = 3	SD = 2	U = 1	Totals
1	Cryptocurrencies are more susceptible to money laundering than traditional fiat currencies.	85	105	60	25	13	288
2	Cryptocurrencies' ability to operate independently of any country's central banking system, makes it easy for digital assets owners to move funds without traces.	140	110	25	8	5	288
3	The anonymity feature of cryptocurrencies transactions creates a cover for criminal activities to thrive.	6	23	78	126	55	288
4	The surge in digital assets has led to an increase in financial crimes in Nigeria.	92	127	40	17	12	288
5	Cryptocurrencies have no significant effect on money laundering activities in Nigeria.	160	100	20	5	3	288

Central Bank Digital Currencies (CBDCs) and Money Laundering

S/N	Research Statements	SA = 5	A = 4	D = 3	SD = 2	U = 1	Totals
6	The E-naira project as a Central Bank Digital Currency was not fully embraced by Nigerians.	43	96	70	41	38	288
7	Unlike Stable Coins or private digital tokens, Central Bank Digital Currencies (CBDCs) provides the needed checks and balances against money laundering.	62	116	55	21	34	288
8	Lack of international standards makes cross-border CBDC interoperability complex, thus making it unattractive to digital assets owners.	67	101	52	24	44	288
9	Central Bank Digital Currencies (CBDCs) are fully aligned with anti-money laundering (AML), counter-terrorism financing (CFT), and Know Your Customer (KYC) regulations.	88	97	19	52	32	288
10	The economy of a nation has a role to play in the strength of its Central Bank Digital Currency (CBDC)	46	110	21	52	59	288

Money Laundering

S/N	Research Statements	SA = 5	A = 4	D = 3	SD = 2	U= 1	Totals
11	The Anti-Money Laundering / Countering the Financing of Terrorism (AML/CFT) framework has not been effective in addressing the menace of internet fraud in digital assets.	78	102	67	28	13	288
12	The lack of clear regulations has hindered the growth of legitimate digital asset businesses in Nigeria.	140	113	26	5	4	288
13	The Nigerian Financial Intelligence Unit (NFIU) is effective in monitoring and preventing money laundering in digital assets.	8	21	82	124	53	288
14	Education and awareness about digital assets and money laundering risks are essential for preventing financial crimes.	91	112	67	12	6	288
15	International cooperation is necessary to combat money laundering in digital assets.	167	94	16	3	8	288