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## FRAUD PREVENTION AND DETECTION IN NIGERIA: THE ROLE OF E-NAIRA

**MUAZU**, Abdullahi Muazu  
Department of Accounting  
Sule Lamido University Kafin-Hausa  
muazumuaz@gmail.com

**ABDULLAHI**, Sadiq Rabi  
Department of Accounting Bayero University Kano  
assadiqu2000@yahoo.com

### ABSTRACT

This study paper explores the capacity of e-naira to detect and prevent fraud in Nigeria. The paper looked closely at the relevance of e-naira in fraud detection and prevention. The paper serve as a basis for expanding relevance of e-naira. The evidence found in literature indicate that e-naira has in-built features and the capacity to prevent and detect fraud in Nigeria. The most beneficial aspect of e-naira is its ability to generally reduce opportunities for fraudulent activity, provides a secure platform for payment, and enable faster detection and investigation of fraudulent activities. This observation is important for policy makers, practitioners, and members of the scientific community in light of the increasing prevalence of fraud in Nigeria. However, further research is needed to explore the full potentials of e-naira in terms of its specific features and impact on Nigerian society.

**Keywords:** Central bank digital currency, CBN e-naira, crypto currency e-Naira

### INTRODUCTION

A Central Bank Digital Currency (CBDC) is fiat currency in the form of electronic currency issued by a central bank. Data base about CBDCs came into being as a result of the fast rise in private crypto currencies, such as Bitcoin, in 2019. Increased in the use of crypto currencies by citizens led to the creation of digital currencies by central banks. Some central banks of the world are at the stage of testing CBDC. China, Sweden, Bahamas, France, Philippines, Japan, Turkey, Switzerland and Ghana are testing their capability to issue a CBDC; while others, like the US, have not found the need to issue a CBDC yet (Aljazeera, 2021). Also, while some central banks issued, or plan to issue CBDC as a counter reaction to increased use of crypto currencies; others plan to issue CBDC as money equivalent to be used alongside paper money and any permitted private crypto currency such as Bitcoin.

Fraud involves false representation of facts, whether by intentionally withholding important information or providing false statements to another party for the specific purpose of gaining something that may not have been provided without the deception (James, 2021). Often, the perpetrator of fraud is aware of information that the intended victim is not, allowing the perpetrator to deceive the victim. At heart, the party committing fraud is taking advantage of information asymmetry; specifically, the resource cost of reviewing and verifying that information can be significant enough to create a disincentive to fully invest in fraud prevention. Both states and the federal government have laws that criminalize fraud, though fraudulent actions may not always result in a criminal trial. Government prosecutors often have substantial discretion in determining whether a case should go to trial and may pursue a settlement instead, if that will result in a speedier and less costly resolution. If a fraud case goes to trial, the perpetrator may be convicted and sent to jail.

Fraud detection refers to measures put in place to stop criminals from profiting under deceptive pretenses. Unscrupulous actors foul the business environment in a variety of ways; and business owners must take

measures to ensure that fraud is detected and prevented or halted before it impact their operations. The phrase "fraud prevention" refers to procedures put in place to lessen the negative effects that fraudsters may have on business operations after being identified. The first step in determining where the risk is located is fraud detection. Then, utilizing fraud detection software, Risk Ops tools, and other risk management techniques, fraud may be stopped manually or automatically.

The Central Bank of Nigeria (CBN) has issued regulatory guidelines for its digital currency (e-Naira) which allows for flexibility, enabling financial institutions to craft effective and appropriate controls, taking into account the relevance of expanding access to financial services as well as the diverse levels and types of risks posed by different products and supply channels (Channels Television, 2021). The challenge is finding the right level of protection for a particular financial environment. Therefore, the study investigates if e-Naira has the capacity to detect and prevent fraud in Nigeria's financial institutions. The following research question explores how the right balance can be found:

- 1) Does e-naira have impact on fraud detection in Nigeria?
- 2) Does e-naira have impact on fraud prevention in Nigeria?

In order to provide answers to these research questions, an extensive literature review was conducted on the subject. The succeeding section provides clarification on the concepts of e-Naira, e-Naira design and architecture, platform model, e-Naira wallet tiers and transaction limits and fraud detection and prevention mechanisms in the e-Naira.

### **Concept of e-Naira**

The e-Naira is a CBDC issued by the CBN. It is the digital equivalent of the Naira, and is intended to facilitate digital transactions. Ozili (2021) describes how the creation of a CBDC can lead to the collapse of private digital currencies; and showed that central banks will leverage on their monetary powers and the trust that citizens have in government-backed money. Davoodalhosseini (2021) investigates the optimal monetary policy when only cash, only CBDC, or both are available to agents in Canada; and reports that a more efficient allocation can be implemented by using CBDC than cash, if the cost of using CBDC is not too high.

Ozili (2021) presents the features, opportunities and risks of digital currency in Nigeria, thus contributes to literature by evaluating strengths and weaknesses of fiat digital currency. Antonios and Guenther (2019) evaluates benefits and drawbacks of CBDC. Prompted by technological advances and a decline in cash usage, many Central Banks are investigating whether it would be possible to issue a digital complement to cash.

Moritz and Phillip (2019) investigates impact of crypto currencies on developing countries. The study examined how decision-makers use crypto currencies to decrease developmental barriers. Klaus and Lamiae (2021) investigated household acceptance of CBDCs by drawing on the unified theory of acceptance and use of technology and institutional trust theory. The continuous adoption of CBDCs by households is highly probable and is fostered by its expected high performance, social recommendations and existence of facilitating conditions. Nevertheless, institutions' efforts to propose a flexible and understandable currency can benefit its adoption only if these institutions also strive to build households' trust in the currency's system.

### **E-Naira design and architecture**

In designing the e-Naira, the CBN took four key design elements into consideration, based on the recommendations of the World Economic Forum, Bank of International Settlement (BIS) and Coalition of Central Banks on CBDC implementation as they align with the overall objective of the e-Naira. The design elements according to Financial Action Task Force (2020) are: architecture, infrastructure, access, and interlinkages.

**Architecture:** The e-Naira will be a hybrid CBDC or a two-tiered CBDC architecture. With this architecture, the CBN will be responsible for issuing the e-Naira while it will leverage the existing financial system and actors such as the financial institutions in directing engagement with users for distribution of the CBDC, payment facilitation, dispute resolution and other roles as may be defined by the CBN. It is important to note that under this architecture, the CBN will retain control over the e-Naira payment system and will be responsible for issuing the digital currency, managing the wallet, and maintaining a central ledger of all transactions. The CBN will also be responsible for providing the overall framework for implementation, monitoring and driving further innovation.

**Infrastructure:** The e-Naira infrastructure is based on the distributed ledger technology (DLT) and this will support the two-tiered model architecture which the CBN has adopted. However, the core requirements of financial systems which include users to be identified based on underlying identity frameworks, payment networks to be permissioned to prevent intrusion, high transaction throughput performance, low latency of transaction confirmation and privacy and confidentiality of transactions and data pertaining to business transactions.

**Access:** Inclusion is a core objective of the CBN and is highlighted as one of the design principles for the e-Naira. To ensure inclusive access while also ensuring the integrity of the financial system, the account based CBDC model has been chosen for the e-Naira.

**Interoperability:** The e-Naira has broad use cases beyond the domestic market as it has the potential to avoid fragmentation and promote global cooperation in the long-term as well as support a more connected and inclusive world. Interoperability between the e-Naira and other CBDCs has been factored into the overall design of the e-Naira. This will help drive the business case for cross-border payments and could potentially address issues of dollarization of the economy which is a key issue that sub-Saharan African countries including Nigeria faces.

### **E-Naira Platform Model**

The design of the e-Naira follows a platform model which incorporates the CBN's design principles. The model entails building a technology platform and leveraging existing structures and roles in the payment system to deliver additional value for users. In this model, the e-Naira serve as a payment platform on which financial institutions and payment service providers can innovate and create layered payment services to enable broad use cases for e-Naira (Vanguard, 2021).

To implement this model, three key elements are provided: (1) a core ledger provided by CBN which serve as the core of the platform and enable transactions to be recorded and payments to be processed, (2) financial institutions suite that enable financial institutions distribute and enable payment services for users and (3) payment service providers module that enables organizations such as financial technology companies, mobile money operators to create additional payment functionality thereby building the e-Naira payment ecosystem.

### **E-Naira Wallet Tiers and Transaction Limit**

The e-Naira is an open system that is accessible to all Nigerians based on a tiered KYC structure as shown in Table 1:

**Table 1: Individual Wallet Tiers and Limit**

Tiers	Category	Requirement	Daily Transaction Limits (NGN)	Daily Transaction Balance (NGN)
0	Non-Bank Account holders	Telephone Number (Awaiting NIN Verification)	20,000	120,000
1	Non-Bank Account holders	Telephone Number (NIN Verified)	50,000	300,000
2	Bank Account holders	BVN	200,000	500,000
3	Bank Account holders	BVN	500,000	5,000,000

Source: Central Bank of Nigeria

Based on this tier structure, the Bank Verification Number (BVN) and the National Identity Number (NIN) will serve as unique identifiers. Each wallet is tied to a BVN or NIN depending on the tier and can only be used once to prevent duplicate identities and wallet creation on the e-Naira platform. Both individuals and corporate account holders will be able to create wallets and use the platform for transactions. Corporate account holders will create merchant wallets with no limits.

**Table 2: Merchant Wallet Limit**

Category	Requirement	Daily transaction limits (NGN)		Daily Cumulative Balance
		Send	Received	
Bank Account Holders	BVN, TIN and Bank confirmation	No Limits	No limits	No Limit (with auto sweep trigger)

Source: Central Bank of Nigeria

Transactions from merchant wallets may be transferred to the merchant bank accounts as there is no limit on the volume or value of transactions that can be transferred.

### E-Naira and Prevention and Detection of Fraud

E-naira as an online payment platform can be of tremendous help in deterring/preventing and detecting fraud. The CBN's regulatory guidelines on the eNaira, Regulation 5.4 and 8.1 provides the following as measures in the e-naira that can detect and prevent fraud:

- a) Two-factor authentication: requiring users to provide multiple forms of identification to authenticate their transactions.
- b) Fraud detection algorithms: using machine learning to monitor transactions and identify unusual behavior that may indicate fraud.
- c) Address verification: checking the billing address provided by the cardholder against the address on file with the issuing bank.
- d) Card verification code: requiring users to enter the three-digit code on the back of their card to verify their identity.
- e) Payment gateway security: using encryption and secure communication protocols to safeguard sensitive user information.
- f) Monitoring transaction patterns: The system keeps track of the transaction history of users and flags any unusual patterns or amounts that do not fit the user's usual spending behavior.
- g) Users' identification: e-Naira may use biometric authentication or other identity verification methods to prevent unauthorized access to user accounts and prevent fraudsters from using stolen credentials.
- h) Real-time monitoring: The system constantly monitors transactions in real-time to detect any suspicious behavior or signs of fraud.
- i) Machine learning algorithms: These algorithms can analyze large amounts of data to detect patterns and anomalies that may indicate fraudulent activity.

- j) Industry standard security protocols: e-Naira may use secure encryption protocols and other cyber security measures to protect user information and prevent data breaches that can lead to fraudulent activities.

### CONCLUSION

This paper critically analyzed the impact of e-naira on fraud prevention and detection in Nigeria. The paper identify monitoring of transaction patterns, users identification, real-time monitoring, machine learning algorithms, industry standard security protocols two-factor authentication, fraud detection algorithms and payment gateway security as parameters in the e-Naira that has the capacity to deter and prevent fraud. The article has provided information, from which the CBN can learn, and improve the e-Naira's capabilities to make it better and more efficient for use in the Nigerian economy.

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