



Economic Prospect of Cryptocurrency: Nigeria as a Case Study

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DOI: <https://doi.org/10.55248/gengpi.2023.4.33777>

ABSTRACT

The emergence of blockchain technologies has experienced rapid growth and generated lots of activities around the globe, where people use cryptocurrencies for transactions and as investments. Nigeria's cryptocurrency market is surging due to the devaluation of the naira and has caused local currency to depreciate. Cryptocurrencies and blockchain technologies are part of a broader wave of technologies that facilitate peer-to-peer (P2P) commerce, and personalisation of market products. The technology create money without central banks and facilitate payments without financial institutions. This study investigates the economic prospect of cryptocurrency with a focus on Nigeria as a case study. The study employed the use of qualitative data gathered using a structured online questionnaire. The result revealed that 69% of the participants were male, and 48.6% were between the ages of 25-34. Furthermore, 46.8% of the respondent are in support of cryptocurrency regulation by the Nigerian government, rather than the total ban placed on the technology. A large proportion (73%) of the respondents are not in support of Nigerian government prohibiting commercial banks from dealing with cryptocurrency. In addition, the majority (91%) of the participants had knowledge of cryptocurrency. The study concluded that the apex banks should deliberately adopt cryptocurrency and create a department that rolls out policies to control its value.

Keywords: Cryptocurrency, Blockchain, e-Naira, Nigeria, Sub-Saharan Africa

1. Introduction

Cryptocurrency has been viewed as the first and most developed application of blockchain technologies. It allows secure and anonymous digital transaction without the involvement of a third-party financial institution (Ardia, Bluteau&Ruede, 2019). Since the advent of the famous cryptocurrency (Bitcoin) in 2009, there have been a strong debate with some tagging this digital currency as fraudulent and the technology that supports illegal transactions (Krugman 2013; Popper, 2018). Others are, however, of the opinion that this new currency can replace money and further ease transactions and monetary policy (Rooney 2018; Chiu & Koeppl, 2019). Bitcoin has, however, been seen as one of the most popular and successful cryptocurrencies. The modern economy relies more on digital means of payment which has made trading in the form of e-commerce easier by generating a digital token and opt codes. What makes digital means of payment possible as strings of bits is the blockchain. However, these bits can easily be duplicated and used for further payments. This problem is curbed by trusting a third party who charges a fee to manage a centralized ledger and transfer balances by crediting and debiting. Some of the forms of cryptocurrencies are Bitcoin, Ethereum, Doge coin, Dogecoin, (2017)

The use of Bitcoin in Nigeria is rapidly on the rise as people, especially with the young adult using it as a medium of exchange in buying and selling. Recently the central bank of Nigeria (CBN) and Securities and Exchange Commission (SEC) warned financial institutions not to trade in digital currencies laying emphasis on the fact that financial institutions trading with virtual currencies do so at their own risks. Subsequent warnings were in 2017 and 2018, respectively. In furtherance of these warnings, the Nigerian deposit insurance corporation (NDIC) warned that they will not give customer protection or insurance when trading with cryptocurrencies. Despite these warnings, the volume of bitcoin in Nigeria has continued to be on the rise, with Nigeria having the world's third largest bitcoin holdings as a percentage of gross domestic product, Baker, (2018). It is nonetheless noteworthy that there has not been any litigation or court order regarding the warnings.

Africa in general and Nigeria in particular is not new to the use of digital platform for the transfer of money nor the rapid increase of the technology (blockchain). There are several e-payment platforms and local mobile monies that have seized the use of blockchain to create innovative means to transferring money other than the brick and mortar banking system. For instance, Kenya's M-Pesa which was launched publicly in 2007 allows

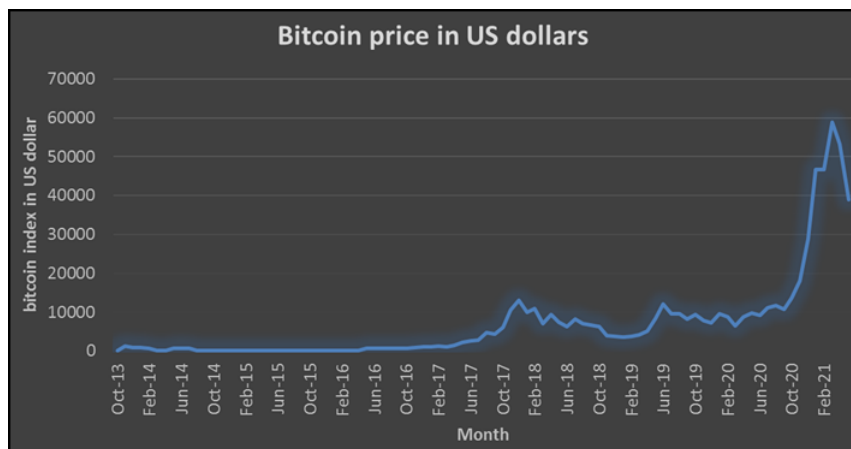
customers to send and transfer money through mobile phones, this e-payment system already accounts for about 25% of Kenya's GNP, leading to greater customer trust and confidence in financial technology Baker, (2018).

Sub-Saharan Africa is reported to have about 350 million unbanked adult (representing 17% of the world total) this create an ideal environment for new ways of moving money and present many challenges that the distributed ledger technology tries to solve. The big question now is, to what extent has Nigeria embraced cryptocurrency? The results are mixed. Whilst the private sector is blazing ahead in many countries, the governments have been apprehensive and reserved, and in some instances unreceptive. Countries such as Zimbabwe, Namibia and Zambia have prohibited the use of cryptocurrencies, South Africa, Senegal and Tunisia appeared to be a friendly and progressive zone. The regulation in Mauritius, for instance, demonstrates a progressive take on the general economic benefits that could follow a friendly, and even incentivized, approach to cryptocurrencies, this creates another dimension for the potential for African countries to develop regulations around blockchain and cryptocurrency, with an intention to attract Foreign Direct Investment (FDI). Some studies have examined the concept of cryptocurrency see (Hu, Parlour&Raian, 2018; Rooney, 2018 & Chiu *et al*, 2019) in other climes, but there is dearth of literature on the economic prospect of cryptocurrency in a region as large as sun-Sahara Africa. This study used Nigeria as a case study. Hence the lacuna for this paper.

2. Stylized Facts on Different Kinds of Cryptocurrencies

(i). Bitcoin is undoubtedly the most popular and prominent cryptocurrency, created by Satoshi Nakamoto in 2009. It uses cryptography to control its creation and transactions, rather than a central authority [3]. This decentralization means that the Bitcoin network is controlled and owned by all of its users, and as all users must adhere to the same set of rules, there is a great incentive to maintain the decentralized nature of the network. Bitcoin uses blockchain technology, which keeps a record of every single transaction, and the processing and authentication of transactions are carried out by the network of users [3]. Although the decentralized nature offers many advantages, such as being free from government control and regulation, critics often argue that apart from its users, there is nobody overlooking the whole system and that the value of Bitcoin is unfounded. In return for contributing their computing power to the network to carry out some of the tasks mentioned above, also known as "mining", users are rewarded with Bitcoins. These properties set Bitcoin apart from traditional currencies, which are controlled and backed by a central bank or governing body.

Bitcoin which is the first and most widely used form of cryptocurrency, its total value account for close to two-thirds of the industry as a whole. The price of bitcoin in May 2016 was around \$500, but as of May 2, 2021, the price of a single bitcoin's price was over \$38,000, that's a growth of about 7,500%



Source: Author compilation, 2023

Figure 1. Cryptocurrency Value.

From the figure above, the rapid increase in bitcoin was first noticed in 2017, as at the end of 2017, the value of bitcoin stood at \$13,062.15 as against \$921.35 in 2016. Since then, the price dropped drastically by 65% to \$6,905 in about two months, ever since, the value kept fluctuating over the years. Bitcoin was worth over \$60,000 between February and March 2021, recording its highest value since inception. This was due to the involvement of Tesla. Tesla purchased about \$15,000,000,000 worth of digital coins and this fueled massive interest in cryptocurrency. Its value noticed a down turn in April due to speculations of government regulation and ban.

(ii). Ethereum is both a cryptocurrency and a blockchain platform. Unlike Bitcoin, Ethereum has a smart contract application that automatically execute actions when certain conditions are met and non-fungible tokens (NFTs). Ethereum has also experienced jaw dropping growth, from a value of about \$11 in April 2016 to over \$2,700 in May 2022, increasing by almost 25,000%

(iii). Tether: Distinct from other forms of cryptocurrency, Tether is a stable coin, meaning it is supported by a fiat currency like Euro and the U.S. dollars and it keeps a value equivalent to any of these currencies. Since Tether is assumed to be more consistent than other forms of cryptocurrency, it is preferred by investors who are cautious of the extreme volatility of other digital coins.

(iv). **Binance Coin:** This is one of the largest crypto exchanges in the world, it can be used to trade and pay fees using the Binance application. Since inception in 2017, Binance coin has gone beyond merely facilitating trade on Binance's exchange platform, it can now be used for booking travels arrangements, payment processing and ecommerce. The value of Binance coin has also improved over the years, from a value of around \$0.10 in 2017 to over \$383 in May 2022, a whopping gain of approximately 350,000%

(v). **U.S. Dollar Coin:** Like Tether, USD coin is a stable coin, it is backed by the U.S. dollar and it can be used to complete global transactions.

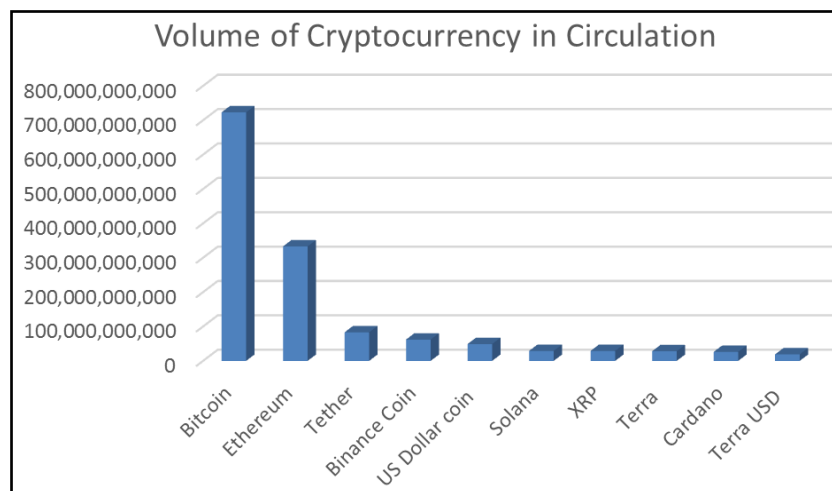
(vi). **Solana:** Solana was launched in 2020 to help power decentralized finance (DeFi) by using decentralized apps (DApps) and smart contracts, Solana runs on a unique hybrid proof-of-history and proof-of-stake mechanisms that help it process transactions quickly and securely. SOL, Solana's native token is used to power the platform. In 2020, SOL's price started at \$0.77. By May 1, 2022, its price was around \$87, a gain of more than 11,000%.

(vii). **XRP** was originally developed in 2012 and is the first global real-time gross settlement network (RTGS) which "enables banks to send real-time international payments across networks" (Ripple, 2017). XRP was created by the some of the founders as Ripple. The Ripple network is a blockchain network which incorporates a payment system, and a currency system known as XRP which is not based on proof-of-work like Monero and Dash. A unique property of Ripple is that XRP is not compulsory for transactions on the network, although it is encouraged as a bridge currency for more competitive cross border payments (Ripple, 2017). The Ripple protocol is currently used by companies such as UBS, Santander, and Standard Chartered, and increasingly being used by the financial services industry as technology in settlements. Compared with Bitcoin, it has advantages such as greater control over the system as it is not subject to the price volatility of the underlying currencies, and it has a more secure distributed authentication process. As of 2017, the value of XRP stood at \$0.006 but as at May 1, 2022 its price rose to \$0.59 which is equivalent to a growth of more than 9,800%

(viii) **Terra (Luna):** Terra is a blockchain payment platform for stable coins that depends on on keeping a balance between two types of cryptocurrencies. Terra-backed stable coins, such as TerraUSD, are tied to the value of physical currencies. Their counterweight, Luna, powers the Terra platform and is used to mint more Terra stable coins. Terra stable coins and Luna work in concert according to supply and demand: When a stable coin's price rises above its tied currency's value, users are incentivized to burn their Luna to create more of that Terra stable coin. Likewise, when its value falls compared to its base currency, this encourages users to burn their Terra stable coins to mint more Luna. As adoption of the Terra platforms grows, so too does the value of Luna. From Jan. 3, 2021, when its price was \$0.64, to the beginning of May 2022, Luna has risen over 12,400% to \$80.

(ix) **Cardano:** Cardano is prominent for its early embrace of proof-of-stake validation. This method speeds up transaction time and decreases energy usage and environmental impact by removing the competitive, problem-solving aspect of transaction verification present in platforms like Bitcoin. Cardano also works like Ethereum to enable smart contracts and decentralized applications, which are powered by ADA, its native coin. Cardano's ADA token has had relatively modest growth compared to other major crypto coins. In 2017, ADA's price was \$0.02. As of May 1, 2022, its price was at \$0.77. This is an increase of 3,750%.

(x) **TerraUSD:** Launched in September 2020 in partnership with Bittrex, TerraUSD is a stablecoin pegged to the US dollar. Terra also supported a Korean Won-pegged stablecoin called TerraKRW, which launched before TerraUSD. TerraUSD is available on the Ethereum and Solana blockchains.



Source: Author's computation from Forbes

Figure 2. Volume of cryptocurrency in circulation

Top 10 Cryptocurrencies and their volume in circulation include: Bitcoin- \$723,000,000,000; Ethereum-\$333,000,000,000; Tether: \$83,000,000,000; Binance coin-\$62,000,000,000; U.S. Dollar Coin-\$49,000,000,000; Solana-\$29,000,000,000; XRP-\$29,000,000,000 Terra-\$28,000,000,000; Cardano-\$26,000,000,000 and TerraUSD -\$19,000,000,000.

The crypto-industry seems to be unstable in value as seen from the figure above, however, it is noteworthy that it possesses some potential benefits. The traditional brick and mortar payment system undergo series of payment protocols and in the process incur cost such as cost of maintaining infrastructure and wage bill, with the decentralized payment feature of cryptocurrency operated through the internet, advocates of cryptocurrency are of the opinion that it proffers a less costly payment system, leading to economic efficiency. Also, for persons who do not find various financial institutions amply trustworthy, cryptocurrencies could provide a desirable alternative.

3. Cryptocurrency Regulations Around the World

In developed economies like the United State, digital currencies are not considered a legal tender but cryptocurrency exchange is legal and regulations varies by state and it is been regulated by Bank Secrecy Act (BSA). By implication, this means that cryptocurrency exchange service providers must register with the Financial Crimes Enforcement Network (FinCEN), submit their report to authorities and main appropriate records. FinCEN also proposed a new cryptocurrency regulation in December 2020. The regulation will impose the collection of data as a key requirement for crypto exchange and wallet. Similarly, In Canada, cryptocurrency is not considered a legal tender but cryptocurrency exchange is legal and its service provider must register with the Financial Transaction and Reports Analysis center of Canada (FinTRAC). Cryptocurrency can be used to buy goods online and offline in stores that accept them. In 2014, Canada brought about digital currencies act under the Proceeds of Crime (Money Laundering) and Terrorist Financial Act (PCMLTFA). In 2018, Canada's Central Banks described cryptocurrencies as securities and as such the Canadian tax laws apply to cryptocurrency transactions.

In Singapore, cryptocurrency is not a legal tender but its exchange is legal and its service provider are required to register with the Monetary Authority of Singapore. Tax authorities in Singapore treats Bitcoins as goods and as such applies goods and services tax on it. Australia and Japan treat cryptocurrency as property and it must be registered with Australian Transaction Reports and Analysis Center (AUSTRAC) and Financial Services Agency respectively. Australia has been progressive in implementing cryptocurrency regulations. Since 2018, AUSTRAC has mandated service providers to register, verify and identify users, keep records as well as comply with the center's regulations. Regulations in Japan are similarly progressive, in 2020, the Japanese Virtual Currency Exchange Association (JVCEA) was established of which all cryptocurrency exchange service provider is a member.

Digital currencies are not legal tenders in China and their exchange is illegal. In 2013, the People's Bank of China (PBOC) banned financial institutions from digital currency transactions and in 2017, a banned was placed on cryptocurrency exchange. Although domestic cryptocurrency exchanges are under a blanket ban in China, workarounds are possible using certain foreign platforms and websites that China's internet firewall doesn't catch. There are no indications that China will lift the ban anytime soon, however, China's central bank announced the introduction of e-CNY digital currency in 2021. The token has been developed to replace cash and coins and it can serve as a medium of exchange.

In Africa, the bank of Ghana does not recognize cryptocurrency as a legal tender and this is because approval has not been given by the to support cryptocurrency as a medium of exchange. However, a bill known as Payment Systems and Service Bill has been passed which will probably enable the regulation of cryptocurrency in Ghana. Cryptocurrency is also not a legal tender in South Africa, however South African Reserve Bank (SARB) in 2016 established an Intergovernmental Fintech working group to develop policies to regulate crypto-currencies, machine learning and other payment advice. However, South Africans keep trading with cryptocurrency. Other countries like Namibia, Mauritius and Kenya do not consider digital currency as a legal tender.

Tunisia on the other hand seems to have embraced cryptocurrency and has since been establishing friendly regulations. In 2015, the country launched her digital currency, the eDinar which is jointly owned by Tunisia and Saudi Arabia. Senegal in 2016 launched her digital currency, the eCFA which has the same value as the CFA franc. In 2015, the Cameroonian Government tested a digital currency called Trest. The test was successful, it was however abandoned due to high transaction cost.

The Central Bank of Nigeria Regulatory Role

The CBN issued a letter, dated February 5, 2021 prohibiting all deposit money banks (DBM), non-bank financial institutions (NBFI) and other financial institutions (OFI) from dealing in cryptocurrencies or facilitating payments for cryptocurrency exchanges [4]. The CBN also directed all DMBs, NBFIs and OFIs to "identify persons and/or entities transacting in or operating cryptocurrency exchanges within their systems and ensure that such accounts are closed immediately."

In the letter, the CBN stated that it wished to "remind regulated institutions that dealing in cryptocurrencies or facilitating payments for cryptocurrency exchanges is prohibited". The SEC which initially declared its intention to regulate digital asset such as cryptocurrencies said it will work with the CBN to proffer necessary regulations in the event that cryptocurrency transactions are permitted in the future. However, neither the CBN nor the SEC had previously prohibited dealing in cryptocurrencies or the facilitation of payments for cryptocurrency exchanges. Following its letter dated February 5, 2021, the CBN issued a Press Release titled, "Response to Regulatory Directive on Cryptocurrencies" [4]. In the Press Release, the CBN justified its "policy reminder" on several grounds which are considered individually below. It is however noteworthy that this letter is a simple circular and is not a law.

i. The first ground is that cryptocurrencies are issued by unregulated and unlicensed entities and their use in Nigeria goes against the key mandates of the CBN as the issuer of legal tender in Nigeria. In its letter, the CBN failed to define and/or categorise "cryptocurrency". This suggests that the CBN placed a blanket ban on facilitating payments for cryptocurrency exchanges, irrespective of the nature of cryptocurrency being traded on the exchange.

In other words, the CBN did not differentiate between cryptocurrencies used as a legal tender, those that have the features and characteristics of a security (security tokens) and those used to provide users with a product and/or service (utility tokens). The directive to close accounts of persons and/or entities dealing in cryptocurrencies and ban the facilitation of payments for cryptocurrency exchanges on the premise that cryptocurrencies are being used as legal tender, without proper categorization, is unjustifiable.

ii. The second ground for the cryptocurrency prohibition is that due to its “anonymity”, “obscurity”, and “concealment” cryptocurrencies have become well-suited for conducting illegal activities. Although certain privacy-focused cryptocurrencies like Monero and Zcash make transaction details and the amount of every transaction anonymous by disguising the addresses used by participants, the majority of cryptocurrency transactions are on a public, immutable ledger that can and is tracked. Coupled with the strict KYC/AML regulations that cryptocurrency exchanges are subjected to, assets like Bitcoin and Ethereum, previously thought to be ‘anonymous’ and ‘high risk’, can now be traced with relative ease. In addition, cryptocurrency has not been deemed illegal in Nigeria and the CBN cited the fact that some cryptocurrencies have become more widely used as speculative assets rather than as means of payment, thus resulting in significant price volatility that has threatened financial systems. The effect of the volatility of an asset on financial systems is an economic argument and economists are better suited to debate this issue. However, it is submitted that, as long as no crime is being committed, the volatility of an asset or the fact that it is being used speculatively is not a sufficient reason to direct the closure of accounts of persons and/or entities transacting in such assets. After all, most investment assets are speculative. Gold, real estate, stocks etc are bought in the anticipation of future price increase. As for volatility, the naira-dollar exchange rate has been perpetually volatile but this has not led to the prohibition of forex trading. Stocks are also volatile. Recently, the Gamestop stock price experienced a 72% drop in just two days following a price increase of over 2000% in less than 3 weeks. So, volatility and speculation are not peculiar to crypto assets.

iii. Lastly, although widely referred to as “cryptocurrencies”, regardless of use or function, utility and security tokens have various use cases that give them intrinsic value. For example, the WePower token that allows users to buy and sell electricity on the blockchain using smart contract represents a physical thing - it represents electricity. This is the reason why the SEC categorized virtual assets/instruments into: Crypto Assets (e.g. non-fiat virtual currency); Utility Tokens; Security Tokens; Derivatives and Collective Investment Funds of Crypto Assets, Security Tokens and Utility Tokens.

4. Estimation Techniques and Data Source

Table 1. Demographics of respondents

Variable	Category	Percentage (%)
Gender	Male	68.8
	Female	31.2
Age	15-24	26.1
	25-34	48.6
	35-44	19.8
	45-54	2.7
	55-64	1.8
	65 and above	1.8
Educational Background	HND/diploma	7.2
	Bachelor’s Degree	64.9
	Masters	18.9
	PhD	5.9
Occupation	others	10.3
	Civil/Public Servant	13.5
	Lecturing	14.4
	Self employed	22.5
Occupation	Student	22.5
	others	27

Table1 above shows the demographics of respondents, 68% of the respondent were male and 31% are females. This indicate that the male gender is more interested in cryptocurrency. Majority of the respondents were in the age range of 25-35 and they were matured enough to provide reliable information on cryptocurrency in Nigeria. Furthermore, 65% of the respondent had obtained a bachelor’s degree implying that the sample size consist of a large number of educated fellows who can provide adequate information on cryptocurrency research.

Table 2. Responses on the Regulation of Cryptocurrency by the Nigerian Government.

Variable	Percentage of response
Yes	46.8%
No	34.2%
Can’t say	18.9%
Total	100%

From the table, 46.8% of the respondent are in support of cryptocurrency regulation by the Nigerian government, rather than the total ban placed on it. While 34.2% are of the opinion that there shouldn't be regulations and about 18.9% were indifferent about it. From the data presented above, it can be said that it is appropriate for the government to regulate cryptocurrency.

Table 3. Responses on the issuance of the Nigerian Cryptocurrency for better regulation.

Variable	Percentage of response
Yes	55%
No	22.5%
Can't say	22.5%
Total	100%

Table 3 shows that majority of the respondent are of the opinion that the Nigerian government should issue her cryptocurrency so as to benefit from it.

Table 4. Responses on the commercial bank ban on dealing in Cryptocurrency.

Variable	Percentage of response
Yes	9.9%
No	73.9%
Can't say	16.2%
Total	100%

Result from table 4 shows that over 73% of respondent are not in support of the government prohibiting commercial banks from dealing with cryptocurrency. This connote that most individuals are interested in trading with cryptocurrency.

Table 5. Responses on the Knowledge of Cryptocurrency.

Variable	Percentage of response
Yes	91.8%
No	8.2%
Total	100%

The result in table 5 shows that over 91% of respondent have the basic knowledge about cryptocurrency and are in the best position to fill the questionnaire.

Table 6. Responses on the Knowledge of eNaira.

Variable	Percentage of response
Yes	73%
No	27%
Total	100%

When asked if respondent know about eNaira, 73% knew about eNaira while 27% are clueless about eNaira.

Table 7. Responses on if respondent have eNaira wallet.

Variable	Percentage of response
Yes	89.4%
No	10.6%
Total	100%

About 89% of respondent do not have eNaira wallet, this shows that majority of Nigerian do not make use of the eNaira wallet and when they were asked to give reasons, 46.3% said they preference other kind of digital currency.

5. Policy Implication of Findings and Recommendation

This paper presents the economic prospect of cryptocurrency with a focus on Nigeria as a case study. Qualitative data technique was deployed for the study using structured questionnaire. The results revealed that quite a good proportion of the participants have knowledge of cryptocurrency. The findings further show that a significant number of the respondents are in support of cryptocurrency guideline by the Nigerian government, rather than the total ban placed on the technology. In the same vein, it revealed that respondents are not in support of Nigerian government prohibiting commercial banks from dealing with cryptocurrency.

A number of important policy implication can be deduced from the findings. First, the Nigerian government should regulate the trading of digital currency and find a benchmarking protocol to convert the value of bitcoin to its own national currency. Secondly, control mechanism should be put in place to establish the value of cryptocurrency so as to remove unnecessary anxiety about the value since there is a high volume of trade which cannot

be neglected. The study suggest that the apex banks should deliberately adopt cryptocurrency and create a department that rolls out policies to control its value. Again, the eNaira has to be strengthen and the government can achieve this by creating a legal framework for cryptocurrencies in the nation in response to the CBN and SEC's initiatives and also encourage her citizen to trade with it both locally and at the international market.

Future research should focus on the effect of cryptocurrencies on the GDP of a country and what should government do to make it generally accepted.

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