The Growth and Regulatory Challenges of Cryptocurrency Transactions in Nigeria

Accepted for publication in David Crowther, Shahla Seifi (Eds.) (2022). The Complexities of Sustainability. Science, Technology and Sustainability: Volume 1. World Scientific.
https://doi.org/10.1142/12902

The Growth And Regulatory Challenges of Cryptocurrencies Transactions in Nigeria

Victor Ediagbonya[1] Tioluwani Tioluwani[2]

Abstract:
There have been various concerns about the regulation of cryptocurrencies in this era of modern technology. The quest for its regulation has been becoming increasingly topical amongst various stakeholders because of the possibility of using cryptocurrencies for money laundering. The Central Bank of Nigeria (CBN) had recently barred banks and financial institutions from dealing in or facilitating transactions in cryptocurrencies such as bitcoin, warning that banks that fail to act will face severe sanctions. Similarly, the Securities and Exchange Commission (SEC) has also suspended its plans to regulate cryptocurrency transactions in Nigeria. Both regulators have argued that impending risks are associated with dealing in unregulated digital currencies and not legal tender. This chapter argues that besides the risk of such transactions on the ordinary individual who transacts in cryptocurrencies, it can also be a channel for corrupt individuals to launder stolen monies.

Keywords: Money laundering, Cryptocurrencies, Regulation, Banking, Crypto-laundering.

1. INTRODUCTION

The exchange of goods and services has taken place through different means in human history; some of the methods are frequently tangible, such as the use of coins or paper money (Ayomikun & Omowunmi, 2019). The real foundation of money is still untraceable; however, paper money and coins dating back to the seventh century B.C. (Mundell, 2002). The substance of money facilitates transactions and has evolved since the seventh century; now, there are debit cards, internet banking and cryptocurrency. Undoubtedly, the global financial community is incorporating the latest technological transformation from real currencies to virtual currencies. Polillo (2011) introduced an interesting theory regarding the creation of currencies; the idea suggests that general social processes grant various kinds of organisations the right to generate currencies. Also, he argued the principle of money as multiple currencies and that through social practices, societies constantly change money in creative ways to better suit their needs. Cryptocurrencies, one of these creative ways, is defined as a digital record-keeping system that uses balances to keep track of trading commitments and is accessible to all traders.

[1]Victor Ediagbonya, School of Law, University of Essex, Colchester, England, CO4 3SQ. v.ediagbonya@essex.ac.uk
[2] Tioluwani Tioluwani, School of Law, University of Essex, Colchester, England, CO4 3SQ. tt17127@essex.ac.uk

Cryptocurrencies as a form of currency allow direct peer-to-peer transactions by eliminating banks or other intermediaries when carrying out these financial transactions (Peters, Panayi & Chapelle, 2015). This peer-to-peer system is based on blockchain, allowing transactions to take place directly between users without the need of an intermediary; it makes the transactions a secret between parties and as such, parties will not be privy to each other's identity (Hameed & Farooq, 2016). This form of secrecy has allowed the black market to grow as cryptocurrencies have allowed individuals to make illegal financial transactions that are difficult and, in some cases, impossible to track (Heilman, Baldimtsi & Goldberg, 2016). This form of anonymity poses serious threats as criminals could exploit it for laundering illicit funds, thereby weakening financial systems.

There have been various concerns about the regulation of cryptocurrencies in this era of modern technology. The pseudonymous and decentralised structure makes them especially suitable for criminal activities. The quest for its regulation has become increasingly topical amongst various stakeholders because of the possibility of using cryptocurrencies for money laundering, also known as crypto-laundering. The Central Bank of Nigeria (CBN) had recently barred banks and financial institutions from dealing in or facilitating transactions in cryptocurrencies such as bitcoin, warning that banks that fail to act will face severe sanctions. Similarly, the Securities and Exchange Commission (SEC) has also suspended its plans to regulate cryptocurrency transactions in Nigeria. Both regulators have argued that impending risks are associated with dealing in unregulated digital currencies and not legal tender. This chapter argues that besides the risk of such transactions on the ordinary individual who transacts in cryptocurrencies, it can also be a channel for corrupt individuals to launder stolen monies.

2. Conceptual and theoretical overview of cryptocurrencies and AML

Research has shown the link between the concepts of digital currency, virtual currency and cryptocurrency. Digital currency is a type of virtual currency that is electronically created and stored. They are also assets with zero intrinsic value, whose value is determined by the forces of demand and supply as in other commodity money like gold (Salawu & Malaoi, 2018). In 2012, the European Central Bank defined virtual currency as 'a type of unregulated, digital money which is issued and usually controlled by its developers, and used and accepted among members of a specific virtual community' (Rose, 2015). Baron et al. (2015) described virtual currency as a digital representation of value that people accept as a means of payment.

However, it is neither issued by a public authority nor necessarily ascribed to an acceptable currency.

On the other hand, offering an acceptable definition of cryptocurrency is complex and challenging. In 2008, a programmer named Satoshi Nakamoto published a paper titled Bitcoin: A Peer to Peer Electronic Cash System describing digital currencies and the year after the Bitcoin network was founded (Temitope & Folorunso, 2020). The first cryptocurrency was Bitcoin, which started trading in January 2009. After which, other cryptocurrencies have been created using the same innovations that Bitcoin introduced but changing some of the specific parameters of their governing algorithms (Temitope & Folorunso, 2020). One similarity between these currencies is that they are not issued by any central authority and are independent of traditional banks. Bitcoins were launched at the peak of the global economic meltdown of 2007 – 2009 when various central banks and other regulatory and supervisory bodies, with all their policies, were almost considered incompetent, and the confidence of the investors in the ability of the government to sustain the economy was affected (Raskin & Yermack, 2016). Thus most researchers suggest that Nakamoto appeared to give an answer to the economic crunch and from the authoritative power of the Government and banking institutions (He, 2018). Over the past decade, Bitcoin and other forms of cryptocurrencies have reformed the financial world by developing a stable form of currency that is not controlled by the government and permits encoded, unidentified transactions (Swartz, 2018). The arrival of cryptocurrency has its root in cryptographic technology with online distributed accounting books that appear to have introduced the finance industry into another phase of development. This phase is a blend of both the Central Bank functions and accounting functions as it produces and manages the supply of virtual currencies and produces and manages the record of transactions concurrently (Ahamad, Nair & Varghese, 2013). Although cryptography is present in traditional banking services, it plays a different role in both systems.

Therefore, cryptocurrency functions at the entry point of traditional banking services and is also at the core of the system. Cryptocurrency is built around certain cryptographic functions, which can also protect the system from insiders. In addition to this technical definition, cryptocurrency also relies on some specific and formal definitions of global institutions and regulatory agencies. Despite the challenges, it is argued that cryptocurrency has particular benefits compared to the traditional banking system. It added to the global payment industry

and the economy in the following ways: privacy, low transaction costs, rapid transfers, immunity to inflation, and scalability due to the refusal to represent traditional financial institutions.

Like the physical currency, cryptocurrency is also prone to several challenges such as lack of solid anonymity, scams; terrorism financing, and money laundering. Nakamoto (2008) acknowledged the tragic consequences of handing over the strategic decisions of custodians and recipients of investment income and transaction control to greedy attackers who could steal their payments, disrupt the system, and deceive people based on their technical expertise without considering the legitimacy of their wealth. The loopholes in this coin mining system are enough to reward fraudsters who arbitrarily break the rules, inevitably cause social disobedience, and deceive innocent and inexperienced participants (Nakamoto, 2008).

Reid and Harrigan argue that Bitcoin transactions, including cryptocurrency's centralised offerings inclusive of exchanges and pockets, are not entirely anonymous (Reid & Harrigan, 2011). Venkatakrishnan, Fanti and Viswanath (2017) argued that cutting-edge flooding protocols used within the Cryptocurrencies community no longer sufficiently protect a person's anonymity. Main scams had been perpetrated globally and domestically through rip-offs which have been termed excessive-yield wealth programs. These online Ponzi schemes promised excessive hobbies price on deposits, as victims made Bitcoin deposits into rip-off wallets. Notwithstanding the risks that have been associated with cryptocurrency, the way it grows is fascinating. With this growth, the government are powerless as to the control of the currency. Research has shown that there is no consensus at both the national and international levels regarding cryptocurrency's regulation, especially since it was not the governments that created them (Hughes & Middlebrook, 2015). Bitcoin possesses specific attributes that need to be examined; these attributes make it appealing to customers to adopt it. The next section evaluates four of such characteristics which might be taken into consideration when adopting Bitcoins. They include anonymity, low service charge, global acceptance and finally, the absence of significant control.

Low Service charge

Utilising a cryptocurrency account is considered to be low since the services of experts like bankers who act as intermediaries are not needed to confirm any transactions as seen in the regular banking systems (Salawu & Malaoi, 2018). Although this low service charge has been

argued not to be sustainable in the future, it is considered to be a cheaper option than the traditional banking systems (Salawu & Malaoi, 2018).

Anonymity

Under this feature, the parties do not know the real identity of whom they are transacting with. Most times, this characteristic is considered the main strength of using cryptocurrency. The feature complicates any chance of identifying individuals who engage in illegal transactions and other criminal activities (Zamani & Babatsikos, 2017). On the other hand, individuals who use the single wallet address for various transactions risk having their details exposed to a hacker who can quickly identify the user's alphanumeric password. Also, if the account owner dies suddenly, the wealth automatically goes into extinction as no one will be able to access the wealth. Though one advantage of using Bitcoins is that it can safeguard wealth from hackers; however, unlike the traditional banking system, it does not allow the deceased's next of kin to claim the wealth in the virtual world as this does not form part of the estate of the dead.

Absence of Central Control

This is an inherent feature of the currency that indicates there is no single supervisor or body specifically in charge of cryptocurrency administration. Parties that use the technology are self-governing. The technology does not enforce any central authority. The network is distributed to all members, and each computer mining bitcoins is a part of the system. Thus the central authority has no power to dictate rules for owners of bitcoins (Nica, Piotrowska & Schenk-Hoppp, 2017).

Global Recognition

In contrast to the traditional banking system, cryptocurrency promotes a cashless environment and removes the difficulties posed by cash. This technology is easily accessible to anyone and removes any territorial boundary that might come with any transaction. The ease of transaction that this technology pose makes it attractive to everyone globally. However, according to the IMF, the currency does not enjoy full global acceptability as a medium of exchange. Some

nations[3] do not accept the use of cryptocurrency as a means of currency transactions and would sanction anyone who engages in the use (Nica, Piotrowska & Schenk-Hoppp, 2017).

2.2 Money Laundering

Money laundering can be defined as channelling illicit funds through outside financial channels to make the funds appear legitimate (MacDowell, 2001). The term originated from activities carried out by organised crime, which used laundry cleaning business to cover up 'launder,' large amounts of cash earned through blackmail, prostitution, gambling and piracy.

Money Laundering is a global problem as the criminal acts of individuals, illegal businesses and corporations, get their funds from illegal and unethical sources such as fraud, corruption, trafficking, prostitution, drugs, sales of illegal weapons and terrorist activities. Thus money laundering damages the well-being and functioning of the global economy (Buchanan, 2004). The money laundering process is made up of three main steps, which are achieved in one merged transaction or in three different transactions (MacDowell, 2001). The first process is placement; a large amount of illegal funds goes into the financial system, used to purchase high-value goods or smuggled out of the country. The idea is to convert cash into other types of assets as soon as possible to avoid the risk of exposure. The next step in the process is layering, and this step is where the source of the illegal funds are hidden, which is done by creating complex levels of financial transactions to hide audit trails and disguise who the funds really belong to. Some of the preferred methods used are the Electronic Funds Transfer (EFT), conversion into monetary instruments, investments in legally owned businesses and buying real estate. Finally, the last step is the integration, and under this step, the newly laundered money is integrated into legitimate businesses, thereby making the monies untraceable to illicit activities (Buchanan, 2004).

In the past, money laundering was only done through these established processes using small businesses or even large businesses. However, after the arrival of the internet, the money laundering process has evolved into a digital state. The money laundering process has gone worldwide, and efforts to tackle money laundering are usually expensive and ineffective. There is a need to curb this as this could lead to a lack of confidence in the global financial system and affect government bodies worldwide (Schneider, 2008). When funds are transferred to

[3] Nigeria: On 5 February 2021, the CBN issued a circular directive that prohibited all transactions in bitcoins and other virtual currencies. Since 19 June 2021Thailand declared dealings in cryptocurrency illegal. Vietnam banned trading in cryptocurrencies in 2014, while Colombia banned transactions in cryptocurrencies since 2016.

offshore accounts, it will not be easy to track and can be moved across multiple banks to hide the origins of those funds (Picard & Pieretti, 2011).

2.3 Crypto-Laundering

Cryptocurrencies are good options for money laundering activities for many reasons. First, they can be used to move money pseudonymously or sometimes incognito (Haffke, Fromberger & Zimmermann, 2019). Second, transactions are carried out through decentralised blockchain transactions. This is because the transactions are not automatically inspected for illicit activities by any supervisory control. Third, the currency can be transferred worldwide without territorial boundaries or checks (Haffke, Fromberger & Zimmermann, 2019). Generally speaking, there are two ways to use cryptocurrency to launder money: On the one hand, money can come from outside, monies gotten from illicit activities are converted to tokens, preferably in a country with lower or non-existent Anti-Money Laundering regulations. Similarly, illegally obtained assets, for example, stolen assets, can also be traded for tokens. There is also the possibility of the tokens been acquired illegally.

The three-stage money laundering process discussed above also applies to crypto-laundering, but the workings related to each stage are integrally different. For example, through a process called chain hopping, money laundering is carried out firstly in the placement stage; funds are transferred from a regular bank to an account with a cryptocurrency exchange service to buy primary coins. Then in the next stage, the layering stage, the primary coins are exchanged for altcoins to muck up the electronic paper trail, which makes it hard for law enforcement to track the route of the funds (Fruth, 2018). Then in the integration stage, the money can be converted from altcoins to primary coins and finally to traditional money (Fruth, 2018). Although this description was a bit overly simplified, the description shows a well-devised scheme that avoids many of the warnings anti-money laundering regulators would look for.

Another means of laundering through cryptocurrency is smurfing, which involves different parties which carry out transactions on behalf of the primary money launderer. The concept behind this is that different people make small transactions at various locations in other to avoid suspicions and been tracked by enforcement agencies. This is not new to money laundering; however, it has become pronounced upon the advent of cryptocurrencies as it is easy to move the currency across borders without restrictions. This scheme originated with criminals located in Spain, where the criminals were involved in getting and splitting the proceeds from illicit

drug activities into one hundred and seventy-four bank accounts. Moving to Colombia, the criminals will withdraw the money from accounts using the ATM and cards linked to the accounts. In carrying out these acts, the criminals realised that their transactions could be tracked. The scheme was upgraded to utilising bitcoins and other cryptocurrencies in place of using cash (Fruth, 2018). Thus the criminals did not have to withdraw the money physically from the accounts where the dirty money was deposited. The criminals used the exchange to convert their illicit proceeds into bitcoins, then change the cryptocurrency into Colombian pesos and deposit it into Colombian bank accounts on the same day (Europol, 2018).

Enforcement authorities eventually discovered the above scheme through the cryptocurrency exchange location (Europol, 2018). Another scheme is the mixing and tumbling method. This is different from the traditional money laundering methods, as new technologies have been utilised to launder cryptocurrencies and make illegal monies look legitimate. One of the most deceitful methods is known as mixing, which is also known as tumbling. The scheme is similar to the concept of mutual funds, whereby different parties collectively gather funds for the general good of the group through investments. However, instead of investing the funds pooled, the money is transferred between exchanges, thus making it very difficult to track the trail of the specific transactions (Ciphertrace, 2019).

An example of the use of the Bitcoin cryptocurrency for illegal activities is the successful use and disguise of the Silk Road website. This was the most prominent virtual market for trading drugs. All the transactions on the website could only be carried out through Bitcoins, which is done anonymously. This was made possible through the TOR software, which made all users anonymous on the Dark web (Small, 2015). The Dark web is a part of the internet that is indexed by search engines and can be used for anything, including the purchase of usernames, passwords to hacking services and illegal porn. Based on the anonymity of the website, bitcoin was made the main form of currency (Small, 2015).

The blockchain is a public ledger that enables all users to use all the previous bitcoin transactions, which is presumably advantageous to law enforcement. Bitcoin transactions are interconnected due to the blockchain structure. Thus, every entry is unavoidably the result of the last transaction. This poses a risk to cybercriminals because their transactions are interconnected and can be traced back to illegal sources (Wegberg, Oerlemans & Deventer, 2018). The dark web provides services to further anonymise bitcoin to help money laundering.

There are two facets to bitcoin money laundering. First, there are bitcoin mixers or toggle switches, a service designed to separate Bitcoin from illegal sources; second, there is a bitcoin exchange, which attempts to convert Bitcoin into real currencies anonymously (Wegberg, Oerlemans & Deventer, 2018).

The mixing service breaks the funding trail of bitcoin transactions. The customer receives a newly generated bitcoin address to make a deposit. After deducting the mixing fee, the mixing service pays bitcoin from its reservation to the designated address to ensure greater anonymity. The payment is dispersed over time. It also introduces an aspect of the unpredictability of the divided amount. A mixer is an anonymiser that confuses the blockchain transaction mixer by linking all transactions to the same bitcoin address and sending these transactions together to send from different addresses. The mixer sends a complex series of fake transactions, so it is difficult to match coins with any particular transaction. Once a bitcoin portfolio is created, it is almost impossible to trace it back to an illegal source (Wegberg, Oerlemans & Deventer, 2018).

Once the bitcoins have been successfully mixed, the exchange services are utilised. With this in mind, the exchange is committed to receiving bitcoins in exchange for any other currency so that users can buy and sell bitcoins online. The changed currency belongs to the user which is ensured through outputs platforms like Luno.[4] Usually, these exit platforms require an effective and active account as an exit strategy. This provides an extra layer of protection for detecting and prosecuting suspicious criminal activities and crimes. Accounts can be purchased on the dark web, creating a mechanism for erasing all connections to criminal users (Wegberg, Oerlemans & Deventer, 2018). Criminals can use the exchange services provided on the dark web or exchange currency through bitcoins ATMs, provided that the amount is low enough not to cause suspicion or trigger authentication requirements (Hyman, 2015). The Silk Road was working as a peculiar bitcoins' bank, wherein each user must have an account for carrying out transactions through the website. There may be at least one Silk Road bitcoins address are associated with the user. The account on the website is stored on the server that controls the Silk road. To purchase, users send the mined bitcoins to the Silk Road bitcoin address associated with their account on the website.

[4] Luno is a bitcoin-related company with its headquarters in the UK. It facilitates bitcoin storage and transactions, including buying, selling and paying through the bitcoin wallet services. It also operates exchanges between fiat currencies and Bitcoin.

After the purchase, the user's currencies are transferred to the escrow system until the transaction is completed, and then the customer's bitcoins are transferred from the escrow account to the bitcoins address of the Silk Road merchant. Also, a toggle switch was utilised for any buyer who sends all payments through a complex series of almost random fake transactions, almost removing the link the payment has to any bitcoin sent from the website (Sat et al., 2016). This system of criminal activity was later uncovered and terminated, leading to the prosecution of the parties involved in this illicit act.

3. Legal, regulatory and institutional framework of Cryptocurrencies Regulation and AML in Nigeria

The Nigerian Crypto Assets Market ("Crypto Assets Market") is estimated to be worth about $350 bn (Mesele, 2021). It is therefore important to have a standard framework for regulating this market set out with clarity. SEC has provided pointers for the regulation of the Crypto Assets Market; however, there are numerous facets of the Crypto Assets Market that are not similar to the Capital Market, so the regulation of the Capital market will not be applicable to the Crypto Assets Market. The advent of the need for cryptocurrency laws in Nigeria is linked to the notorious Ponzi scheme, Mavrodi Mundial Moneybox ('MMM'). After MMM momentarily shut down in December 2016, the platform stated it would adopt bitcoin (Vanguard, 2017). When cryptocurrency attracts Nigerians' attention, the Nigeria Deposit Insurance Commission (NDIC) and the CBN in 2016 took a look into the emergence of bitcoin (Vanguard, 2017). SEC, the primary regulator of the Nigerian capital market, advised Nigerians against investing in cryptocurrency. It stated that none of the persons, companies or entities promoting cryptocurrencies had been recognised or authorised by it or by other regulatory agencies in Nigeria to receive deposits from the public or to provide any investment or other financial services in or from Nigeria (SEC 2017).

It also advised that there is no legislation to protect users or investors if the cryptocurrencies fail or the companies trading in these currencies go bankrupt (CBN, 2017). Also, CBN issued a national circular to all the banks, warning about virtual currencies and emphasising the point that cryptocurrency is not a recognised legal tender in Nigeria (CBN, 2017). The circular also specified that the banks and other reporting financial institutions, while awaiting substantive legislation or policy by the CBN, must be cautioned by ensuring that they do not use, support and/or conduct any virtual currency transactions; it also directed those existing customers as virtual currency changers have effective AML/CFT control measures to enable them to comply

with the identification, review and monitoring of customer transactions, If the bank or other financial institution is not satisfied with the control imposed by the virtual currency customer/exchange, the relationship must be terminated immediately, furthermore, the CBN has directed that all suspicious transactions of these customers should be reported to the Nigerian Financial Intelligence Unit with immediate effect (NFIU).

This was a commendable attempt by the regulators of the capital market as cryptocurrency is a volatile currency. There was no effective regulation to protect the users if it fails or the companies engaging in it go out of business. The SEC also released a circular advising the public to take caution with regard to the cryptocurrencies as a means of investing, advising that there is no legal protection in the event the companies operating them fails and go out of business. In 2018, CBN issued another press release confirming that cryptocurrencies are not legal tender and that cryptocurrency exchanges are not authorised or regulated by it. CBN also reiterated its warning that there is a risk of loss when investing in cryptocurrencies. This was a commendable attempt by the regulators of the capital market as cryptocurrency is a volatile currency. There was no effective regulation to protect the users in the event that it fails or the companies go out of business. However, as evidenced by the fundraising for the EndSAR protest in October 2020, with the growth and popularity of cryptocurrency trading, the market has clearly ignored these warnings (Handagama, 2020). The financial year ending in 2020 revealed that Nigerians had transacted about $400m worth of cryptocurrencies (Kene-Okafor, 2020). However, one would argue that this does not reflect the total amount of cryptocurrency transactions that had taken place in that financial year. This is because not all the transactions in cryptocurrencies are documented, so the amount accruing from the total transactions will be more significant than what is stated above.

In general, the use of cryptocurrency as legal tender for the exchange of goods and services in Nigeria has never been fully approved. Due to the dominance of Nigerians investing in cryptocurrency and the recommendations of the Cryptocurrency Regulatory FinTech Roadmap Committee in September 2020, SEC classified crypto assets as securities that need to be regulated (SEC, 2019). Its overall goal is to ensure that technology and innovation are not encumbered or subdued. The SEC sought to develop standards to promote ethical practices in cryptocurrency trading and promote fair trade and efficient market (SEC, 2019). The SEC stated that unless the issuer or sponsor proves otherwise in the initial valuation application, all virtual encrypted assets are securities. Thus, requiring the registration of all Digital Assets

Token offerings, Initial Coin Offerings (ICOs), Security Token ICOs, and other blockchain-based offers of digital assets in Nigeria,

Nigeria's digital asset products can trade these securities on investment exchanges. In addition, the wit the possibility of trading these securities on an investment exchange. Also, the SEC has decided to supervise individuals and companies involved in blockchain-related and virtual digital asset services, such as management, investment consulting, custody or nominee services. Arguably, SEC's position on cryptocurrencies has created much-needed clarity for the future of cryptocurrencies and the role of fintech companies as cryptocurrency exchanges. However, in February 2021, CBN changed the direction of cryptocurrencies and issued another circular that its typical ambiguity would not characterise. This time, CBN will completely prohibit any form of cryptocurrency transactions supported by Nigerian financial institutions. CBN reiterated that financial institutions are cautioned on the use of cryptocurrencies, prohibiting financial institutions from transacting or engaging in cryptocurrency exchanges. Additionally, the CBN directed financial institutions to identify individuals and companies that conduct cryptocurrency transactions on their systems and ensure that such accounts are closed immediately.

Since CBN imposed new restrictions, financial institutions immediately began to close accounts that were found to be using cryptocurrencies. Cryptocurrency exchanges like Binance have suspended all Naira deposits. The reaction of Nigerians, especially its negative impact on the fast-growing Nigerian cryptocurrency market and fintech industry, is unfavourable. Additionally, the CBN issued a press release explaining and certifying that its policy statement is correct, that it is not new to prohibit financial institutions from using, storing, trading and/or processing cryptocurrencies as they had been warned about this previously. CBN stated that cryptocurrencies are not recognised legal tender in Nigeria, that they hinder supervision, accountability and regulation, making them vulnerable to criminal activities such as money laundering, tax evasion, drug trafficking, terrorism, and covering up illegal purchases of weapons and ammunition. The volatility of cryptocurrencies threatens the stability of some countries' financial systems (Sofola, Eraga & Omowunmi, 2021).

Reactions Towards CBN’s Restrictions on Cryptocurrencies

There have been several criticisms about the CBN stance on cryptocurrencies. Firstly, the circular contradicts the SEC provisions, which provides that all crypto-assets are securities until proven otherwise. Consequently, the later directive by CBN negates the statement earlier released by SEC. Also, according to SEC, they are the only regulatory body that has jurisdiction over cryptocurrency transactions in Nigeria. However, on the other hand, it can be argued that the CBN also has the right to issue directives to financial institutions to fulfil its objective under the CBN Act to advance financial stability in Nigeria. Therefore there is a degree of regulatory overlap between the CBN and SEC in Nigeria.

Furthermore, it has been argued that the CBN did not expressly clarify what 'cryptocurrency' refers to or constitute. This shows that CBN ambiguously banned cryptocurrency transactions, regardless of the type of cryptocurrency traded on the exchange. In other words, CBN did not distinguish between cryptocurrencies used as legal tender, cryptocurrencies with security functions and features (securities tokens), and cryptocurrencies used to provide users with products and/or services (utility tokens) (Sofola, Eraga & Omowunmi, 2021).

Another criticism is that the CBN's Circular did not provide any sanctions on the exchange of cryptocurrencies. The CBN only prohibits banks and financial institutions which it regulates from transacting in cryptocurrencies or dealing in cryptocurrency transactions. The CBN circular does not criminalise the use and dealing in cryptocurrency. Therefore, engaging in cryptocurrency transactions does not constitute an illegal act because for a person to be arrested, detained or prosecuted for a criminal offence, there must be a written law where the offence is defined and must a penalty must be prescribed (S.36(12) CFRN 1999). There is no specific regulation in Nigeria that has declared cryptocurrency trading illegal or attempted to criminalise it.

Nevertheless, the CBN's circular has had some negative impacts on many Nigerians. One noticeable impact of the CBN policy on closing the accounts of individuals and legal entities that conduct cryptocurrency transactions has other implications: the restriction actually closes the door to the possibility of a cryptocurrency exchange for goods and services in Nigeria, but doing so will unknowingly promote the speculative use and trading of cryptocurrencies, which runs counter to the global trend of cryptocurrency regulation and business practices. For example, in the United States, Tesla recently submitted a $1.5 billion bitcoin acquisition application to the U.S. Securities and Exchange Commission and announced that it would accept cryptocurrency as a regular payment in the future (Kovach, 2021). Furthermore,

although the restrictions prohibit cryptocurrency transactions in Naira, it has not affected secondary market peer-to-peer trading, where most of the dealing in cryptocurrency in Nigeria occurs. Therefore users of cryptocurrencies can still carry out transactions on their own and make payments into their cryptocurrency wallet (Babatunde, 2021).

Nigerian Anti-Money Laundering Legal and Regulatory Framework

The regulatory framework constitutes laws that adopt the global standards of anti-money laundering within the country. The first of these happened in 1995, with the enactment of the Money Laundering Decree No.3 of 1995, which criminalised money laundering with definite offences limited to drugs and drug-related crimes. This was followed by the Money Laundering (Prohibition) Act, 2004, which criminalised laundering of the profits of crime or any unlawful act; incorporated and defined designated non-financial institutions and delegated regulatory responsibility to the Federal Ministry of Commerce (now the Federal Ministry of Industry, Trade and investment. The adoption of this regulation was effective towards the first attempts at the campaign against financial and economic crimes in Nigeria despite the evidence of substantial loopholes which affected some aspects of the campaign against money laundering (Giaba, 2008). This loophole was later amended in Money Laundering (Prohibition) Act in 2012. According to Adeseyoju, no country in West Africa has done more than Nigeria to combat money laundering in the country (Adeseyoju, 2012). The regulatory framework for AML/CFT in Nigeria comprises the regulators and supervisors authorised by the establishing law and other AML/CFT laws to regulate the entry and operation of their respective operators, including the issuance of industry-specific regulations and guidelines. Regulators are responsible for overseeing financial institutions and designated non-financial institutions.

Since introducing the anti-money laundering/counter-financing of terrorism system, Nigeria has established strong institutions to implement government measures and guidelines to reduce money laundering activities against terrorist financing. Some of the institutional frameworks include the Nigerian Financial Intelligence Unit (NFIU), the Economic and Financial Crimes Commission (EFCC), the Independent Corrupt Practices Commission (ICPC) and all other agencies established by law to tackle the 21 predicate offences of money laundering.

The Nature of Money-Laundering Activities in Nigeria

Despite all the laudable efforts, there are still evidence various instance of Money Laundering in Nigeria (Abiola, 2014). This was brought to light by the U.K. and US AML agencies. Some

academics have stated that prosecutions and some other factors hinder the implementation of anti-money laundering laws and regulations. It is argued that prosecution is an essential tool in an instrumental conception of law; it is a means to reduce the occurrence of illegal acts or criminal offences (Abiola, 2014). However, in Nigeria, the prosecution in light of money laundering is ineffective as several factors impede its effectiveness, including delay in prosecution, ineffective judicial system, lack of profound and detailed investigation, lack of funding, ineffective laws, and lack of political will.

Olatunde, Ajibolade and Omolehinwa (2012), in their work, stated that the enactment of anti-money laundering laws and agencies had not shown professional transparency and ethical conduct. This possibly explains why money laundering is still prevalent in Nigeria. This situation can also be attributed to the advent of technology, according to Sieber (1998)

> *The problems caused by computer crime are bound to intensify in the future. Increasing computerisation, particularly in the administration of deposit money, in the balancing of accounts and stock-keeping, in the field of electronic funds transfer systems, and in the private sector, as well as new computer applications such as electronic home banking, electronic mail systems, and other interactive videotext systems will lead to increase in the number of offences and losses.*

Although this statement was made about two decades ago, it has proven quite accurate. Money laundering has spread across the country with far-reaching impacts. Aluko and Mahmood (2012) asserted that amongst the financial crimes in Nigeria, money laundering had infiltrated the economic and political spheres, leading to economic digression and political unrest. Although there are Anti-money laundering laws in Nigeria, the implementation of these laws are not effective. The critical question is if these regulations and regulatory institutions are strong enough to carry out the purpose for which they were established. In order to record success with the implementation of these regulations, there is a need for an institutional synergy will, political will, and international cooperation (Aluko & Mahmood, 2012). However, in Nigeria, there is no indication of these sects to curb money laundering. As seen in the Guaranty Trust Bank case, the bank failed to take proper precautions and controls against money-laundering, screen customers against sanction lists, and revise high-risk accounts' activity. The then Financial Conduct Authority fined Guaranty Trust Bank (UK) Ltd the sum of £525000 for failings in its anti-money laundering controls for high-risk customers as the act was

considered severe and led to an unacceptable risk of handling of the proceeds of crimes (Binham, 2013).

4. Challenges of Anti-Money Laundering Implementation in Nigeria

In a speech, the former Governor of CBN, Sanusi Lamido, described his experience as the apex regulator for Nigeria banks. He states that a particular CEO took over $1bn from her bank (Sanusi, 2012) to purchase properties in different parts of the world; while he and the EFCC were able to secure a conviction and retrieved assets procured by the ill-gotten funds, they encountered many difficulties when they filed a lawsuit against another CEO who stole over N142 billion from the bank under his watch which he used it to purchase shares of his bank, which he transferred them overseas to purchase real estate properties. Sanusi (2012) further stated that concerning the second CEO, he stated they finished the case; however, two weeks before the closing statements were made, the judge was miraculously promoted to the Federal Court of Appeal after three years of trial. The Governor expressed his disappointment with the banking reform and the political environment thus:

> *We were dealing with chief executives that in 2009 had become invincible. They were in the seat of power. They had economic power, and they had bought political protection. They were into political parties, they had financed elections of officers, and they believed that nobody could touch them. (Sanusi, 2012).*

It is clear that there is a form of exemption from the law or disregard for the law by directors and politicians who have evaded prosecution or are discharged by some corrupt judges even if they are eventually prosecuted. Therefore, implementing anti-money laundering laws in Nigeria has numerous challenges as there is either delay with the prosecution or use of political and/or economic power to avoid prosecution.

5. The Rationale for a Crypto-laundering Ban in Nigeria

The use of cryptocurrencies is the preferred means of exchange for different cyber-attacks that target computer systems, some of which includes hacking, purchasing illicit weapons or fake identity credentials on the dark web. According to Interpol, this has increased financial crimes, especially money laundering (Interpol, 2021). The use of cryptocurrency for money laundering has been considered cheaper by cybercriminals (Wegberg, Oerlemans & Deventer, 2018). Nigeria is one of the countries with the highest use of cryptocurrency, with the high use of the

internet, growth in the youth population and high use of mobile money markets. However, this increases the threat of laundering money through cryptocurrency, and it should not be ignored, which is why the ban on cryptocurrency is, to a large extent, right (Chilen, 2021).

According to the CBN, the reason for the ban on cryptocurrency is that it has a been used to finance various illegal activities, including terrorism and money laundering. The Cryptocurrency markets are possibly susceptible to a wide range of criminal activities and financial crimes, including money laundering. Most of these threats appear not only on the blockchain itself but also in the surrounding ecosystem of issuers, VCE's and wallets that support consumer access to DLT. Enabling these systems will make it difficult for law enforcement and financial institutions regulators subject to Anti-money laundering requirements to learn about the new criminal activities. As observed in previous sections, the anonymity of cryptocurrency makes it easy to perpetrate money laundering. Cryptocurrency allows for anonymity by allowing users to transfer wealth without disclosing personal information as in the traditional banking system.

Even though Bitcoin exchanges are stored on blockchain records which acts as digital records that serve to recognise a sender and a recipient's digital identities, lawbreakers have the resources to alter their computerised personality from utilising virtual private organisations, intermediary network addresses by basically utilising another person's account or even, making an invented pseudonymous online personality practically making their acts untraceable. Cryptocurrencies enablement of money laundering is through its convention's anonymity, ease in executing and flexibility of use. The failure to connect a bitcoin account to a recognisable client following the placement, layering, and incorporation of laundered assets would be difficult for Anti Money Laundering implementation (Iyoyojie et al., 2021).

Cryptocurrencies allow their users to exchange or move funds anonymously without the traditional paper trail, which could easily be tracked through payment intermediaries. The ability to exchange bitcoins freely for other currencies and transfer through an infinite number of accounts to conceal the origin and trail affects anti-money laundering laws. Thus, cryptocurrencies, including bitcoins, make it easy for money launderers to move illicit funds quicker, cheaper, and anonymously without any form of suspicion (Iyoyojie et al., 2021). Many other countries have banned the use of cryptocurrency; for example, China banned cryptocurrencies, and so did Venezuela, amongst others. The ban of cryptocurrencies in

Nigeria is, to an extent, justified as it will curtail developing dangerous trends capable of destroying Nigeria's Anti-money laundering and Counter-Terrorist (AML/CFT) gains (Chibuzor, 2021).

6. Recommendations

Cryptocurrency has forced countries to pick either between banning, tolerating or cooperating with technological innovations (Raskin & Yermack, 2018). These are different regulatory approaches that will have different effects on the market. China banned cryptocurrency in their country; however, this regulatory approach has proved inefficient. This was an effort by its government to sustain existing regulatory consistency and preserve institutional assets (Cohn & Miao, 2018). The United States, on the other hand, did not ban cryptocurrency but instead maintained a balance between the protection of investors and financing technological innovations, presuming a practical and competent capital market (Cohn & Miao, 2018). Both approaches have their advantages and disadvantages, but there are lessons to pick from the approaches. Crypto-laundering should be a focus of the government of Nigeria. Although cryptocurrency has been banned in Nigeria, it has not stopped Nigerians from trading with it. The reasons for banning cryptocurrencies in Nigeria might seem straightforward; however, it will not completely purge the country of money laundering activities through cryptocurrencies.

It is also clear that applying the Nigerian anti-money laundering legislation is ineffective against secretive organisations like the dark web. Thus there is a need for the legislature to regulate exchanges and wallet services. Although there are still no clear plans on regulating cryptocurrencies in Nigeria, it may be helpful for the legislature to deliberate on how to provide policies in regulating cryptocurrencies, especially since the country is currently developing its own. In seeking to regulate it, it is essential that the Nigerian authorities first make sure that the regulation will be proportional to the risks. The risks associated with the currency must be identified and dealt with appropriately.

This chapter recommends that the Nigerian government develop regulations translated into codes through the help and cooperation of relevant regulatory agencies, particularly CBN and SEC and other relevant stakeholders. Nigeria is already creating its own cryptocurrency, which might have already adopted regulations through codes to reduce the risk of anonymity in traditional accounts. Therefore, it is proposed that the government encourage cooperation

between the above stakeholders to create a regulatory framework that will govern the trades and dealings in cryptocurrencies in Nigeria.

There is also a need for uniform international regulations on cryptocurrencies. Money laundering through the use of cryptocurrencies is not a problem restricted to Nigeria, it is a global issue. Regulatory organisations already exist which has the capability to deal with this task. Therefore, it is recommended that the United Nations Commission on International Trade Law (UNCITRAL) or the Organisation for Economic Co-operation and Development (OECD) develop an ideal law that controls cryptocurrencies on a global scale.

7. Conclusion

Cryptocurrencies are relatively new technological advancements, but they have quickly taken over the global market. Consequently, cryptocurrencies have been abused in various illegal ways. Criminals have used the currency to launder money through different methods. Whilst the stages of money laundering still apply, the anonymity and the absence of standard global policies governing the currency have created new methods for money laundering. Although the Nigerian government has attempted to address the problem and find lasting solutions, this chapter has shown that the Nigerian anti-money laundering laws do not regulate cryptocurrencies. The wording is, at best, unclear when applied to crypto-laundering; ultimately, as recommended, more needs to be done at both the national and international levels to curb this problem as local approaches might not suffice.

Reference

Abiola, J. (2014) 'Anti-Money Laundering In Developing Economy: A Pest Analysis of Nigerian Situation,' 3 (6) Review of Public Administration and Management Nnadi Azikiwe University

Adeseyoju, A. (2012) ‘Anti Money Laundering: FATF Moves Against WMDs’ Financial Africa: New Playground For Crypto Scams And Money Laundering - <https://issafrica.org/iss-today/africa-new-playground-for-crypto-scams-and-money-laundering>

Ahamad, S. Nair, M. and Varghese, B. (2013) ‘A Survey on Crypto Currencies,’ A Survey on Crypto Currencies. In Proc. of Int. Conf. on Advances in Computer Science, AETACS, pp. 42–48

Aluko, A. and Bagheri, M. (2012) 'The Impact Of Money Laundering On Economic And

Financial Stability And On Political Development In Developing Countries15 Journal of Money Laundering Control

Ayomikun, A. S. and Omowunmi, I. E. (2019) Cryptocurrency and its Implications on Nigeria Banking Operations, a paper presented at the Banking Digital Conference Held On Thursday, 25th July 2019 At Babcock University, Ilisan, Ogun State, available at <http://apbe-cibn.org.ng/wp-content/uploads/2020/06/APBE-Papers-2019-Preliminary-FA.pdf>

Babatunde, G. (2021) 'Bitcoin Vendors Cash in as P2P Trading Volume Swells By 16% Since CBN Ban,' available at: <https://technext.ng/2021/02/11/nigerias-crypto-vendors-cash-in-as-p2p-trading-volume-swells-by-16-since-cbn-order/>

Baron, J. O'Mahony, A. Manheim, D. Dion-Schwarz, C. (2015) 'National Security Implications of Virtual Currency: Examining the Potential of Non-State Actor Deployment, Rand Publisher California, U.S.A

Binham, C. (2013) 'FCA fines Nigeria lender for inadequate money laundering checks' The Financial Times 9 August, available at:< https://www.ft.com/content/4ba16f82-00fa-11e3-8918-00144feab7de>

Buchanan, B. (2004) 'Money Laundering—A Global Obstacle' 18 (1) Research in International Business and Finance.

CBN, (2017) 'Circular To Banks And Other Financial Institutions On Virtual Currency Operations in Nigeria,' Ref No: FPR/DIR/GEN/CIR/06/010', available at: https://www.cbn.gov.ng/out/2017/fprd/aml%20january%202017%20circular%20to%20fis%20on%20virtual%20currency.pdf

CFRN, (1999 as amended) Section 36 (12)

Chibuzor, O. (2021) 'Weighing The Ban On Cryptocurrency Transactions,' available at: <https://www.thisdaylive.com/index.php/2021/02/16/weighing-the-ban-on-cryptocurrency-transactions/>

Chilen, R. (2021) 'Africa: New Playground For Crypto Scams And Money Laundering,' available at: <https://issafrica.org/iss-today/africa-new-playground-for-crypto-scams-and-money-laundering>

Ciphertrace (2019) 'Cryptocurrency Anti-Money Laundering Report – Q4 2018,' available at <https://ciphertrace.com/cryptocurrency-anti-money-laundering-report-q4-2018/>

Cohn, S. R. and Miao, Y. (2018) 'The Dragon and the Eagle: Reforming China's Securities IPO Laws in the U.S. Model, Pros and Cons,' 17 Wash. U. Global Stud. L. Rev.

Dumas, C. (2015). China-paper money. Four Rivers Charter (Online), as cited in Ayomikun,

A. S. and Omowunmi, I. E. (2019) 'Perception Of Cryptocurrency Traders On Traditional Transactional Cost and Risk Associated with Cryptocurrency Trading in Nigeria' 5 (1) Journal of Association of Professional Bankers in Education.

Europol, (2018) 'Illegal network used cryptocurrencies and credit cards to launder more than eight million Euros from drug trafficking' Presse Release 9 April available at: www.europol.europa.eu/newsroom/news/illegal-network-used-cryptocurrencies-and-credit-cards-to-launder-more-eur-8-million-drug-trafficking

Fruth, J. (2018) 'Crypto-Cleansing:' Strategies To Fight Digital Currency Money Laundering and Sanctions Evasion,' available at: <https://www.reuters.com/article/bc-finreg-aml-cryptocurrency-idUSKCN1FX29I>

Gandal, N. and Halaburda, H. (2014) 'Competition in the cryptocurrency market. Bank of Canada,' Working Paper No.4, pp.1-33, available at: <https://www.bankofcanada.ca/wp-content/uploads/2014/08/wp2014-33.pdf>

Giaba, (2008) 'Mutual Evaluation Report Anti-Money Laundering and Combating The Financing of Terrorism,' available at:< https://www.giaba.org/media/f/299_Mutual%20Evaluation%20Report%20of%20Nigeria.pdf>

Haffke, L. Fromberger, M. and Zimmermann, P. (2019) 'Cryptocurrencies And Anti-Money Laundering: The Shortcomings of the Fifth AML Directive (EU) and how to address them,' 21 Journal of Banking Regulation

Hameed, S. and Farooq, S. (2016) 'The Art of Crypto Currencies,' 7 (12) International Journal of Advanced Computer Science and Applications.

Handagama, S. (2020) 'Protests show Bitcoin Adoption is Accelerating in Nigeria – available at: <https://www.coindesk.com/nigeria-bitcoin-adoption>

He, D. (2018) 'Monetary policy in the digital age: Crypto assets may one day reduce demand for central bank money'. (2018). 55(2) A Quarterly Publication of the International Monetary Fund

Heilman, E. Baldimtsi, F. and Goldberg, S. (2016) 'Blindly Signed Contracts: Anonymous On-Blockchain and Off-Blockchain Bitcoin Transactions.' IACR Cryptol. ePrint Arch. 56, available at < https://eprint.iacr.org/2016/056.pdf>

Hughes, S. J. and Middlebrook, S. T. (2015) 'Advancing A Framework for Regulating Cryptocurrency Payments Intermediaries,' 32(2) Yale Journal of Regulation, pp.495-507

Hyman, M. (2015) 'Bitcoin ATM: A Criminal's Laundromat for Cleaning Money,' 27 St.

Thomas Law Review

Interpol (2021) 'Financial crime threatens people in every aspect of their lives: at home, at work, online and offline.,' available at: <https://www.interpol.int/en/Crimes/Financial-crime>

Iyoyojie, L. D. Edeh, O. J. Erinne, U. and Umezurike, C. (2021) 'Cryptocurrency: The Search For A Legal Framework As A World Currency,' 9 International Journal of Business & Law Research

Kene-Okafor, T. (2021) 'In 2020, Nigerians Traded More Than $400M Worth of Crypto on Local Crypto Exchange Platforms,' available at: <https://techpoint.africa/2021/01/06/nigerians-traded-more-than-400m-worth-crypto-2020/>

Kovach, S. (2021) 'Tesla Buys $1.5 Billion in Bitcoin, Plans to accept it as Payment,' available at <https://www.cnbc.com/2021/02/08/tesla-buys-1point5-billion-in-bitcoin.html>

Luno (2021) available at: https://www.luno.com/en/about

MacDowell, J. (2001) 'The Consequences of Money Laundering and Financial Crime, Money Laundering-Economic Perspective-State Department,' 6 (2) An Electronic Journal of the U.S. Department of State

Mesele, O. (2021)' Framework for the Regulation of the Nigerian Crypto Assets Market – Law Allianz, available at: <https://www.lawallianz.com/articles/framework-for-the-regulation-of-the-nigerian-crypto-assets-market/>

Mundell, R. (2002) 'The Birth of Coinage,' Discussion Paper #:0102-08 Department of Economics Columbia University New York, available at: <https://core.ac.uk/download/pdf/161436657.pdf>

Nakamoto, S. (2008) 'Bitcoin: A Peer-To-Peer Electronic Cash System' available at: <https://bitcoin.org/bitcoin.pdf>

Nica, O. Piotrowska, K. and Schenk-Hoppp, K. R. (2017) 'Cryptocurrencies: Economic Benefits and Risks,' University of Manchester, FinTech working paper No.2, available at: < https://ssrn.com/abstract=3059856>

Otusanya, O. J. Omobola, A. S. and Omolehinwa, O. E. (2012) 'The Role of Financial Intermediaries in Elite Money Laundering Practices: Evidence from Nigeria,' 15(1)Journal of Money Laundering Control

Picard, P. M. and Pieretti, P. (2011) 'Bank Secrecy, Illicit Money and Offshore Financial Centers,' 95 (7) Journal of Public Economics.

Peters, G. W. Panayi, E. and Chapelle, A. (2015) 'Trends In Crypto-Currencies And

Blockchain Technologies: A Monetary Theory And Regulation Perspective,' 3 (3) Journal of Financial Perspectives.

Polillo, S. (2011) 'Money, Moral Authority, and the Politics of Creditworthiness,' 76 (3) American Sociological Review; Washington.

Raskin, M. and Yermack, D. (2018) Digital Currencies, Decentralised Ledgers, and the Future of Central Banking, in Conti-Brown, P. and Lastra R. (eds) 'Research Handbook on Central Banking, pp.474 - 486

Reid, F. and Harrigan, M. (2011) 'An Analysis of Anonymity in the Bitcoin System,' IEEE Third International Conference on Privacy, Security, Risk and Trust and IEEE Third International Conference on Social Computing, pp.1318-1326, doi: 10.1109/PASSAT/SocialCom.2011.79

Rose, C. (2015) 'The Evolution of Digital Currencies: Bitcoin, A Cryptocurrency Causing A Monetary Revolution' 14 International Business & Economics Research Journal

Salawu, M. and Malaoi, T. (2018) 'Benefits of Legislating Cryptocurrencies: Perception of Nigerian Professional Accountants,' 22 Academy of Accounting and Financial Studies Journal.

Sat, D. M. and others, (2016) 'Investigation Of Money Laundering Methods Through Cryptocurrency' 83 (2) Journal Of Theoretical And Applied Information Technology

Sieber, U. (1998) 'Legal Aspects of Computer-Related Crime in the Information Society, COMCERIME Study, A Report Prepared for the European Commission

Small, S. (2015) 'Bitcoin: The Napster of Currency' 37 Houston Journal of. International Law.

Sanusi, L. S. (2012). The Banking Reform and its Impact on the Nigerian Economy. A public lecture delivered at the University of Warwick's Economic Summit, Warwick, 17 February. Available at: <https://www.bis.org/review/r120320d.pdf>

Schneider, F. (2008) 'Money Laundering and Financial Means of Organised Crime: Some Preliminary Empirical Findings,' 10 (3) Global Business and Economics Review.

SEC, (2017) Public Notice on Investments in cryptocurrencies and other virtual or digital currencies,' 12 January, available at: http://sec.gov.ng/public-notice-on-investments-in-cryptocurrencies-and-other-virtual-or-digital-currencies/

SEC, (2019) 'Report of The Fintech Roadmap Committee of The Nigerian Capital Market,' available at: <https://sec.gov.ng/report-of-the-fintech-roadmap-committee-of-the-nigerian-capital-market/>

Sofola, K. Eraga, R. and Omowunmi, I. (2021) Cryptocurrencies in Nigeria: An Overview of

A Regulatory Framework' available at: <http://kslegal.org/wp-content/uploads/2021/04/Cryptocurrencies-in-Nigeria-.pdf>

Swartz, L. (2018) 'What Was Bitcoin, What Will It Be? The Techno-Economic Imaginaries Of A New Money Technology,' 32(2) Cultural Studies

Temitope, J. F. and Folorunso, O. F. (2020) 'Digital Currencies and National Development: Prospects and Challenges for Adoption,' 4 International Journal of Academic Accounting, Finance & Management Research.

Vanguard, (2017) "MMM prepares to return, dumps Naira for Bitcoin" The Vanguard Newspaper 9 January, available at: http://www.vanguardngr.com/2017/01/mmm-prepares-to-return-dumps-naira-for-bitcoin/

Venkatakrishnan, S. B. Fanti, G. Viswanath, P. (2017) 'Dandelion: Redesigning The Bitcoin Network For Anonymity' (Publish Illinios) available at: <http://publish.illinois.edu/science-of-security-lablet/files/2016/07/Dandelion-Redesigning-BitCoin-Networking-for-Anonymity.pdf>

Wegberg, R. V. Oerlemans, J. and Deventer, O. V. (2018) 'Bitcoin Money Laundering: Mixed Results? An Explorative Study on Money Laundering of Cybercrime Proceeds using Bitcoin' 25(2) Journal of Financial Crime

Zamani, E.D., Babatsikos, I. (2017). The use of Bitcoins in light of the financial crisis: The case of Greece. The 11th Mediterranean Conference on Information Systems (MCIS), Genoa, Italy.