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| RESEARCH ARTICLE

The Nigerian Cryptocurrency Market: Risks, Opportunities And Challenges

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| ABSTRACT

This study examined the Nigerian crypto currency markets with emphases on the challenges, risks and opportunities provided in the markets. The need for this study stem from the increasing rate of adoption of crypto currencies across Nigeria and its associated growing popularity which have attracted significant attention from Governments, the Central Bank and other financial and educational institutions. Similarly, there is a great deal of uncertainty surrounding the acceptance and use of crypto currency as alternative currency in the country, with much fear about the implication of this innovative digital currency on the economic, organizational and social structure of the country.

The authors posited that the cruptocurrency market in Nigeria was characterized by some risks, among which are: the greater possibility of data loss or theft among cryptocurrency traders in Nigeria and recommended the need to improve governance, performance, monitoring and transparency of the market.

| KEYWORDS

Risks, Opportunities, Challenges, Cryptocurrency Market; Nigeria

Introduction

The evolution of the cryptocurrency market in across the globe, which is today driven by the rapid advancement of technology and increasing demand of consumers for flexible, time- and cost-efficient transactions, has resulted in an increasing growth of digital or virtual currencies (Abadi and Brunnermeier, 2018). Cryptocurrency is a digital representation of value that works as a medium of exchange using strong cryptography to secure financial transactions, control formation of extra units, and verify transfer of assets (Jermann, 2018). However, despite the Nigerian government's prohibition of cryptocurrency, cryptocurrency use is widespread in Nigeria and the prohibition has little effect. Rather, the Nigerian crypto-community has resorted to peer-to-peer trading, or exchanging money directly with one another (Uba, 2021).

There are however a number of criticisms leveled at cryptocurrencies in Nigeria, the most common is the link to criminal activities associated with its use (Saleh, 2018). Unfortunately, for law enforcement agencies, cryptocurrencies are built on the idea of decentralization, which means that they are intentionally designed in a way that prevents them from being controlled by a central authority. While banks and other financial institutions are banned in Nigeria from trading in cryptocurrencies, cryptocurrency is not illegal, but it is unregulated. The cryptocurrency regulatory challenge may be ascribed to a lack of understanding of how cryptocurrency actually works and how criminals are beginning to use it (Uba, 2021). It is therefore critical to raise awareness among law enforcement agencies and then create tools that can aid them in regulating cryptocurrency in Nigeria.

Nigeria has traded 60,215 bitcoins worth more than $566 million in the last five years, making it the highest volume on Paxful, the world's largest peer-to-peer bitcoin marketplace, in the United States. According to **Coin-Dance statistics (2020)**, bitcoin trade in Nigeria rose by at least 19 percent every year with the greatest volume (20,504.50) exchanged in 2020 at the height of the pandemic. Paxful recorded a 137 percent rise in new registrations in Nigeria between January and September, 2020.
Nigeria is currently the number one country in the world in terms of people searching for "Bitcoin" and "Crypto" keywords on Google, with over 6.3 percent of the entire population owning at least one type of **cryptocurrency**. In the **Chainalysis 2021 Global Crypto Adoption Index**, Nigeria is ranked sixth out of the top 20 countries in terms of cryptocurrency adoption. A few important variables, according to Chain analysis, are driving increased adoption in Nigeria, Kenya, and other emerging countries. It is stated that Nigerians utilize the peer-to-peer cryptocurrency exchanges as their major gateway into cryptocurrencies, due to a lack of access to centralized exchanges; and that Nigerians also use cryptocurrencies to protect their funds against currency depreciation, send and receive remittances, and conduct commercial transactions (Gilbert, 2021). Meanwhile, the dollar volume of cryptocurrency received by Nigerian users has been steadily increasing in 2020 and 2021, which might be connected to previous years bull stock market (Uba, 2021).
The increasing rate of adoption of cryptocurrencies across the globe and its associated growing popularity have attracted significant attention from Governments, Central Banks and other financial and educational institutions who are still finding it difficult to decide on what status to give the new financial technology and virtual currency (Gilbert, 2021). This level of dilemma among global authorities including that of Nigeria, on the subject of cryptocurrency is a good justification for exploring the implication of adopting cryptocurrency as an alternative currency. Recent survey in 2021 found Nigeria to be globally leading in the crypto ownership rate at 24.2%, followed by Malaysia and Australia (Zimwara, 2021). This means that daily, more people in Nigeria are trading and investing in cryptocurrency than in any other country.
There is a great deal of uncertainty surrounding the acceptance and use of cryptocurrency as alternative currency in countries across the globe, with much fear about the implication of this innovative digital currency on the economic, organizational and social structure of states. Such concern is even more severe for developing countries like Nigeria, which already have struggling economies and dysfunctional social systems (Saleh, 2018). With a growing curiosity, interest and ownership of cryptocurrency in some developing countries, the problem of uncertainty and fear of acceptance and use of cryptocurrency as alternative currency needs to be clarified by laying the cards down on the risks and opportunities, and making a material decision on what the status of cryptocurrency should be in countries. There is fear, there is uncertainty and yet there is much excitement among others; what is it going to be, should cryptocurrency be accepted as an alternative currency in Nigeria? What does this mean to the economic, social, organizational and governmental sphere of the country, especially as a developing economy? What risks and what are the opportunities associated with this? This issue is a critical problem to address because of how the problem directly affects the outcome of financial safety and integrity in the economies of affected countries.

Objectives of the Study

The following are the objectives of the study.

1. To examine the risks the use of cryptocurrency poses to the economy of Nigeria

2. To evaluate the current challenges that militates against the adoption of cryptocurrency as a payment method in Nigeria.
3. To identify the opportunities of cryptocurrency to the economy of Nigeria

Literature Review

The Concept of Cryptocurrency

A cryptocurrency is an encrypted data string that denotes a unit of currency (*Tourianski, 2022)*. It is monitored and organized by a peer-to-peer network called a blockchain, which also serves as a secure ledger of transactions, e.g., buying, selling, and transferring. Unlike physical money, cryptocurrencies are decentralized, which means they are not issued by governments or other financial institutions (Dirk, Filippo, Douglas, Kerry, and Ross, 2020).

Cryptocurrencies are created (and secured) through cryptographic algorithms that are maintained and confirmed in a process called mining, where a network of computers or specialized hardware such as application-specific integrated circuits (ASICs) process and validate the transactions (Dirk, Filippo, Douglas, Kerry, and Ross, 2020). The process incentivizes the miners who run the network with the cryptocurrency (*Krugman, 2018).* Bitcoin, Ether, Litecoin, and Monero are popular cryptocurrencies.

A cryptocurrency is also defined as a virtual or digital currency that is secured by a cryptographic electronic payment system, which makes it transparent, discrete and almost fool proof (Bianchi, 2017). The cryptography base on which cryptocurrency platforms are created is the Blockchain. First created in 2008 by Satoshi Nakamoto, Blockchain technology is "a distributed ledger enforced by different network of computers" (Jermann, 2018). In a study of the Blockchain technology, the researchers discovered that although there may be different versions of how a Blockchain platform is implemented, they all share some three key features (Sockin and Xiong, 2019). The first of the features is the ledger, which contains a public piece of information or transactions in a series of blocks. This way, the ledger is shared with several record keepers so that transaction information does not get lost or become outdated. The second feature is the presence of a user protocol, which is the basis for users' mutual communication on the platform. This protocol ensures that transaction information within the ledger are transparent and unambiguous (Borri, 2019).

The last feature is that cryptocurrency provides many advantages over the traditional fiat currencies issued by central banks. Notable among them is the absence of a sovereign entity over currencies, making its use fully anonymous and unregulated (Gilbert and Loi, 2018). The other popular advantage is the decentralization of the system, which means users or investors can deal directly with partners rather than having to deal through a centralized exchange. There is also transparency with no back office (Gilbert and Loi, 2018).

According to the European Central Bank (2020), the decentralization of money offered by bitcoin has its theoretical roots in the Austrian school of economics, especially with Friedrich von Hayek in his book *Denationalisation of Money: The Argument Refined*, in which Hayek (1976) advocates a complete free market in the production, distribution and management of money to end the monopoly of central banks (*Pernice and Scott, 2021)*

The legal status of cryptocurrencies varies substantially from country to country and is still undefined or changing in many of them. At least one study has shown that broad generalizations about the use of bitcoin in illicit finance are significantly overstated and that blockchain analysis is an effective crime fighting and intelligence gathering tool *(Lansky, 2021)*. While some countries have explicitly allowed their use and trade others have banned or restricted it. According to the Library of Congress (2018), an absolute ban on trading or using cryptocurrencies applies in eight countries: Algeria, Bolivia, Egypt, Iraq, Morocco, Nepal, Pakistan, and the United Arab Emirates; while an implicit ban applies in another 15 countries, which include Bahrain, Bangladesh, China, Colombia, the Dominican Republic, Indonesia, Iran, Kuwait, Lesotho, Lithuania, Macau, Oman, Qatar, Saudi Arabia and Taiwan. In the United States and Canada, state and provincial securities regulators, coordinated through the North American Securities Administrators Association, are investigating "bitcoin scams" and ICOs in 40 jurisdiction (Law, Sabett and Solinas, 2017).

Theoretical Framework

The Theory of Concurrent Currency

Friedrich Hayek is attributed with the emergence of the theory of concurrent currency. Hayek (1976), advocated for concurrent, competitive currencies. Similarly, he is accredited with initiating a resurgence of research in the area of concurrent currencies for which he was heavily criticized by his peers such as Milton Friedman, Stanley Fischer, and others from the outset (Luther, 2011). Hayek (1976), based his theory of concurrent currencies on the belief that a new and a more stable monetary system would spontaneously emerge if private currencies are allowed to float along with public currencies. The emergence of private currency to be floated along with government currencies would create competition in the monetary system that would eventually lead to efficient markets and economy. Though his theory failed to gain any significant support among academic economists or the population in general (Luther, 2011). It was the belief of Hayek (1976) that competition for customers would force issuers of particular currencies to maintain a stable exchange rate and desist from engaging in reckless monetary practices. According to Hayek, what the issuer of a competitive currency has to offer his customers is the assurance that its value will be kept stable (or otherwise made to behave in a predictable manner).

In others words, issuers of notes would be careful to maintain a constant price between a predetermined basket of goods and their currency in order to retain current, and gain new, customers. Issuers who fail to maintain a stable exchange rate are then expected to lose market share. Hayek contended that the maintenance of exchange rates in the quest for market share would better regulate monetary value than a central bank.

Although Friedman (1990), supported the changes in legislation sought by Hayek. He was however very much less optimistic that such a system would lead to a money of constant purchasing-power and of high quality. Money users according to Freidman are not hypersensitive to changes in purchasing power (Luther, 2011). However, in today’s world, the concurrent currency system is gradually becoming a norm as cryptocurrency is becoming better-known and more popular throughout the entire world, but, still relatively new.

Research Methodology

The research design is the framework and guide in collecting and analyzing data for the study. Avwokeni (2016), defined research design as the structure and strategy of investigation, which is concerned with obtaining answer to research question and control of variables. The three main research designs to be adopted for the purpose of this study are descriptive, exploratory and explanatory (Coghlan, 2019). This will enable us gather meaningful data on the phenoapproach menon for the purpose of reliability and generalization.

Data Collection Method

The researcher will utilize the narrative qualitative or narrative textual case study (NTCS) in collecting relevant information for the study. The narrative qualitative method or narrative textual case study method will be used by appraising inputs of respondents (primarily in other researches) or secondary data sourced from relevant texts, journals, news magazines, the internet etc, about the risks, opportunities and challenges associated with the use of cryptocurrency as alternative currency in Nigeria. This study is therefore not an empirical study.

Analytical Process

The data obtained will be analyzed using the Joanna Briggs Institute (JBI) Data Extraction form. Afterwards, content analysis technique will be applied to decipher the discoveries made based on the research questions. As per Wilson (2016), content analysis is a strategy for investigating patterns of communication, which help the researcher to zero in on respondents' words, subjects, and ideas in a secondary data type.

Data Presentation and Analysis

The narrative qualitative method or narrative textual case study method was used by appraising inputs of respondents (primarily in other researches) or secondary data sourced from relevant texts, journals, news magazines, the internet etc, about the risks, opportunities and challenges associated with the use of cryptocurrency as alternative currency in Nigeria. This

Analysis of Risks Involved in using Cryptocurrency in Nigeria

Nigeria has the highest GDP out of all the African countries, but over 40% of its population lives below the poverty line (Tiara, 2021). The country's struggling economy primarily relies upon oil exports, accounting for more than half of government revenue. The use of cryptocurrency in Nigeria is proving to be a beneficial solution to help lift people out of poverty. However, the use of cryptocurrency in Nigeria like every other countries where cryptocurrency is used, pose some risks to the users and the economy at large (Uba, 2021). The extent to which the financial system and the economy may be exposed to crypto-asset risks depends on the following according to Alo and Ishola (2019):
i) holdings of crypto-assets, ii) investment vehicles, and iii) retail payments which represent the main linkages between the crypto-asset market on the one hand and the financial systems and the broader economy on the other hand.

In their study on the risks associated with the use of cryptocurrency in Nigeria, Alo and Ishola (2019), adopted the use of primary data which were reformed for SPSS statistical analysis. The study found out the following:

1. Data loss or theft is a major risk faced by cryptocurrency traders in Nigeria.
2. There is the tendency for cryptocurrency business to increased cybercrimes and online frauds in the country.
3. There is also the possibility of price manipulation which affects the market negatively.

Graf (2013) found that Bitcoin's price has been volatile since its creation in 2009, subject to sharp appreciations and steep depreciations in value because of speculative users who hoard Bitcoins expecting a rise in the price of Bitcoin. Further, Graf (2013) observed that because the supply is capped in the long run, widespread use of Bitcoin would mean that the demand for Bitcoin would likely outstrip supply, causing Bitcoin's price to steadily increase. The consequence of that increase is that the Bitcoin price of goods and services would steadily fall causing deflation. He concluded that faced with deflation, there was a strong incentive for users to hoard Bitcoins and not spend them, causing the current level of transactions to fall.

In the same vain, Afolabi, Eki and Waziri (2022), identified the risks associated with the use of cryptocurrency in the third world as follows:

Business risk

Loss of confidence in digital currencies: the nascent nature of the currencies is subject to a high degree of uncertainty. Online platforms have generated a large trading activity by speculators seeking to profit from the short-term or long-term holding of digital currencies.

Cyber/Fraud risk

Since cryptocurrency is essentially a cash currency it has attracted a large set of the criminal community; these criminals can break into crypto exchanges, drain crypto wallets and infect individual computers with malware that steals cryptocurrency. As transactions are conducted on the internet, the hackers target the people, the service handling and storage areas, through means such as spoofing/phishing and malware.

Operational risk

With a centralized clearinghouse guaranteeing the validity of a transaction comes the ability to reverse a monetary transaction in a coordinated way; no such ability is possible with a cryptocurrency. This lack of permeance is further demonstrated as Bitcoin accounts are cryptographically secured, access to monies contained in an account almost certainly cannot be restored if the "keys" to an account are lost or stolen, and subsequently deleted from the owner.

Regulatory/compliance risk

Some countries may prevent the use of the currency or may state that transactions break anti money laundering regulations, notwithstanding the global implications. Due to the complexity and decentralized nature of the Bitcoin and the significant number of participants — senders, receivers (possibly launderers), processors (mining and trading platforms), currency exchanges, a single AML approach does not exist.

Market risks

The market risks are idiosyncratic as the currency trades only on demand. There is a finite amount of the currency which means that it can suffer from liquidity concerns and limited ownership may make it susceptible to market manipulation. Further risks would include the costs involved in mitigation with respect to regulatory risk compliance, anti-money laundering and privacy laws, would have to be complied with on an individual business level as well as a global level, involving a myriad of balances and checks. The taxation risk is that institutions and individuals can seek to circumvent tax regulations like the FBAR (Report of Foreign Bank and Financial Accounts) submission by storing monies abroad anomalously.

Analysis of Challenges Involved in using Cryptocurrency in Nigeria

According to Parma et al (2021), the major challenges associated with cryptocurrency use in emerging economies and developing countries include governance challenges which emanates from the decentralized nature of the currency, in addition to challenges associated with integrity due to volatility and related risks of trading in the currency. Other challenges identified include the availability and reliability of data in addition to challenges that emanate from cross-border activities. The major challenge that gave birth to other challenges according to Alo and Ishola (2019), is the decentralized nature of cryptocurrency which has gone beyond governmental control and regulations. Following the above and other factors, Alo and Ishola (2019), concluded on the major challenges facing the cryptocurrency market to include: the promotion of transnational crimes and funding of terrorism; the possibility of price manipulation that may not reflect the actual value of the currency; the loss and theft of data and network and the possibility of cyber-crime and online frauds.

Similarly, the cryptocurrency market fundamentally thrives on speculation, and its relatively small size and high demand for the coin, its utility and scarcity makes it more vulnerable to price fluctuations. That in turn can wreak havoc to the value of the coins. As a matter of fact, most cryptocurrencies evolve from private blockchain firms. So, the value of such cryptos will stem from the company's image, perceived value and project viability (Fauzi, Pariman and Oathman, 2020).

In Nigeria, there are a number of criticisms leveled at cryptocurrencies, the most common is the link to criminal activities associated with its use. Unfortunately for law enforcement agencies, cryptocurrencies are built on the idea of decentralization, which means that they are intentionally designed in a way that prevents them from being controlled by a central authority (Uba, 2021). Therefore, the cryptocurrency regulatory challenge may be ascribed to a lack of understanding of how cryptocurrency actually works and how criminals are beginning to use it. It is therefore critical to raise awareness among law enforcement agencies and then create tools that can aid them in regulating cryptocurrency in Nigeria.

Omon (2021), concluded in his study on cryptocurrency use in Nigeria that due to internal security concerns and its appeal on the black market**, cryptocurrency has been associated with crimes in Nigeria.** The service's near-anonymity, uncertain legal status, and global reach, makes it an apparent and appealing option for money launderers and criminals alike according to Omon (2021). And as a result, cryptocurrencies have been linked to a variety of crimes, including assassinations, business attacks, child exploitation (including pornography), corporate espionage, counterfeit currencies, drugs, fake IDs and passports, high yield investment schemes (Ponzi schemes and other financial frauds), sexual exploitation, stolen credit cards and credit card numbers, and weapons due to their anonymous nature.

To Uba (2021), many crimes involving **cryptocurrency** are not new, such as buying and selling illegal narcotics and, in addition, criminals are increasingly utilizing crypto's characteristics to further and hide unlawful activities. Similarly, criminal actors have started using the currency to perpetuate crimes in the country such as:

1. participate in financial transactions related to criminal conduct, such as purchasing and selling narcotics or weapons on the dark web, leasing servers to perpetrate cybercrime, or soliciting donations to assist terrorist activity;
2. participate in money laundering or conceal otherwise lawful activities from **tax**, reporting, or other legal obligations;
3. or conduct crimes that directly affect the **cryptocurrency** marketplace, such as stealing bitcoin from exchanges by hacking or defrauding unwary investors with the promise of cryptocurrency (Uba, 2021).

According to Fauzi, Paiman and Othman (2020), cryptocurrency operation has been hampered by a lot of challenges in developing economies, among which are lack of regulatory laws and appropriate governance, huge energy mining cost, lack of an efficient market where past information is available that can fully reflect the prices of its history to enable investors to take informed decision and its open the door to manipulation and forgery.

Analysis of Opportunities Involved in using Cryptocurrency in Nigeria.

According to Tiara (2021), the use of cryptocurrency in Nigeria is proving to be a beneficial solution to help lift people out of poverty. A 2021 survey indicates that 32% of Nigerians participate in buying and trading cryptocurrency. In 2020, Nigeria accounted for $400 million worth of cryptocurrency transactions, ranking it third globally in trading volume. Cryptocurrency in Nigeria has so far positively enriched the lives of impoverished citizens. For example, a Nigerian cryptocurrency investor, Tola Fadugbagbe, credits cryptocurrency for lifting him out of poverty. Initially struggling to survive on minimum wage odd jobs, Fadugbagbe now earns enough money from cryptocurrency trading to build his own house and purchase a farm (Tiara, 2021).

A lot of Nigerians do not want to miss out on the opportunities that cryptocurrency offers. This makes the number of people looking to trade on the currency in Nigeria surge on daily basis according to Premium Times (2021), as a lot of people in the country have turned to bitcoin for foreign transactions and inter-border transfer taking advantage of the decentralized nature of the currency. Also, a lot of Nigerians use cruptocurrency to hedge against inflation as naira continues to lose its value, so crypto traders and investors continue to find ways to buy the currency in Nigeria inspite of the government stance against its use.

Nigeria is ranked 6th in the global crypto adoption index with an index score of 0.26 according to Akamo (2021). Nigerians, especially the youths, have turned to the cryptocurrency industry in search of greener pastures which is majorly attributable to the high level of unemployment plaguing the nation. According to a March 2021 Bloomberg report, Nigeria's unemployment rate stood at 33.3%. As a result of this growing unemployment problem, many Nigerians have turned to the cryptocurrency industry in search of an opportunity to earn from the massively growing industry which global capitalization stood at $2.51 trillion. The report further lists the growing adoption of cryptocurrencies *to preserve their savings in the face of currency distortion and devaluation* by emerging economies as a major contributor to this growth.

The most common way that many Nigerians make money from the cryptocurrency space involves buying cryptocurrency assets and holding onto them on a short, medium or long term basis with the hope that the price at which they are ready to sell, will be more than what they initially bought it (Akamo, 2021). According to him staking is another way of earning passive income in the cryptocurrency space, which many Nigerians are warming up to. Staking involves holding coins in a live wallet, thus allowing you to earn additional coins for securing and participating in that particular crypto network.

Others opportunities available for Nigerians to tap in the crypto market according to Tiara (2021), include:

1. Yield farming, which involves lending crypto assets in order to generate high returns or rewards in the form of additional cryptocurrency. Yield farming, according to Coinmarketcap, is one of the biggest growth driver of the still-nascent DeFi sector, helping it to balloon from a market cap of $500 million to $10 billion in 2020. Nigerians involved in farming also see it as a way to earn passive income on their long term cryptocurrency holdings, as the process involves incentivizing liquidity providers (LP) to stake or lock up their crypto assets in a smart contract-based liquidity pool, in which they get in return, a percentage of transaction fees, interest from lenders or a governance token.
2. The futures and options trading market, which started long before the advent of cryptocurrencies. Before cryptos became mainstream, Nigerians participated in the commodities and currencies market through futures and options and it was popularly termed 'forex trading. They are both high-risk investments that involve providing individuals who are looking to reduce future risk with their investment through pre-determined prices. However, since a direction of price movements cannot be predicted, it can cause substantial profits if right or losses if a market prediction is inaccurate.
3. Initial Coin Offering (ICO) and Initial DEX Offering (IDO) are similar to when a stock, being listed on an exchange, has an Initial Public Offering (IPO). ICOs are a popular fundraising method used primarily by startups wishing to offer products and services, usually related to the cryptocurrency and blockchain space. An IDO on the other hand is when a project launches a token through a decentralized liquidity exchange. Due to the ease of entry and exit into the cryptocurrency market, any size of investors can participate in ICOs and IDOs unlike with IPOs, where a substantial amount of money is required before participating. Nigerians are now

participating in ICOs/IDOs, in hopes of a rapid price increase as a result of high demand at the official launch.

4. Nigerians are also benefiting from the world of crypto through clinching crypto currency-related jobs. There are many crypto currency companies in Nigeria. They include Remitano, Patricia, Nestcoin and so on. These companies have been able to create jobs for Nigerian youths.

Also, it is stated that Nigerians utilize the peer-to-peer crypto currency exchanges as their major gateway into crypto currencies, due to a lack of access to centralized exchanges. Similarly, Nigerians also use crypto currencies to protect their funds against currency depreciation, send and receive remittances, and conduct commercial transactions (Uba, 2021).

In addition to circumventing inflation and payment processing fees, crypto currency solves many of the problems associated with international investment and humanitarian aid in developing countries (Makari, 2019) It has reached a point where it can be used not only to transfer money for aid but also to administer aid, and money donated in developed countries would go that much further in helping the poor. Similarly, crypto currency circumventing extractive political and economic institutions and provides a means to greatly expand financial services in the developing world, particularly for the unbanked poor (Makari, 2019).

Data Extraction – Qualitative Evidence

Data extraction is the process of summarizing the pertinent details from each study. Following the above analysis, the extraction table below is drawn to provide the necessary details and evidence on the study's objectives concerning the risky nature, challenges and opportunities provided by the use of of cryptocurrency in Nigeria using the data extraction table in line with the JBI format.

Table 1: Data Extraction on the risky nature of cryptocurrency in Nigeria

Author(s)	Study purpose	Method	Outcome	Time period
Alo and Ishola (2019)	To assess the transactional costs and risks associated with cryptocurrency trading in Nigeria	Quantitative primary data	There is greater possibility of data loss or theft among cryptocurrency traders in Nigeria. Secondly, there is the tendency for cryptocurrency business to increased cybercrimes and online frauds in the country. Thirdly, price manipulation is common in the market which negatively affects the market.	One month
Uba (2021)	The implications of the expansion of the crypto ecosystem in Nigeria and other developing and emerging markets,	Qualitative method	Firstly, the returns of crypto assets are less impressive when adjusted for volatility due to high volatility risk. Secondly, lack of control and transparency around issuance and distribution of crypto assets and have resulted in investor losses.	One month

			Thirdly, risks can be further amplified by the use of leverage offered in crypto exchanges. Fourthly, The complexity nature of cryptocurrency products, couple with the low level of transparency have contributed immensely to their risky nature. Next is that operational risks can result in significant downtime resulting in large losses of customer funds. Also, cyber risks involve and include high-profile cases of large reliance on a few entities which make them easy prey for cyber criminals. Again, with limited or inadequate disclosure and over- sight, the crypto ecosystem is exposed to consumer fraud and market integrity risks.	
Graf (2013)	To determine the volatility of the cryptocurrency market in Africa	Qualitative	Volatility attributed to hoarding and price fluctuation in the market was largely observed in the market.	2009-2012
Afolabi, Eki and Waziri (2022)	Investigated the risks associated with the use of cryptocurrency in Nigera	Qualitative	Business risk associated with easy loss of confidence in digital currencies **Sencondly, is risk of cyber fraud** Since cryptocurrency has attracted a large set of the criminal community. **Operational risk is highly pronounced due to lack of** a centralized clearing house. Regulatory and compliance risk due to the complexity and decentralized nature of the currency. **Market risks due to** a finite amount of the currency which means that it can suffer from liquidity concerns and limited ownership may make it susceptible to market manipulation.	One month

Source: **Analysis of Risks Involved in using Cryptocurrency in Nigeria**

Table 2: Data Extraction on the Challenges Involved in using Cryptocurrency in Nigeria

Author(s)	Study purpose	Method	Outcome	Time period
Uba (2021),	Investigated the regulatory challenges of cryptocurrency in Nigeria.	Qualitative	Operators participate in financial transactions related to criminal conduct, such as purchasing and selling narcotics or weapons on the dark web, cybercrime, soliciting donations to assist terrorist activities. Another challenge is that the market provides a fertile ground for money laundering and challenges such as stealing the currency from exchanges by hackers without trace.	One month
Fauzi, Paiman and Othman (2020).	Challenges, opportunities and future of cryptocurrency in West Africa	Qualitative	Lack of regulatory laws and appropriate governance; huge energy mining cost; lack of an efficient market where past information is available that can fully reflect the prices of its history to enable investors to take informed decision and its open the door to manipulation and forgery.	One month
Omon (2021)	The challenges and opportunities of cryptocurrency market in Nigeria	Quantitative	The market near-anonymity, uncertain legal status, and global reach, makes it an apparent and appealing option for money launderers and criminals; cryptocurrencies have been linked to a variety of crimes, including assassinations, business attacks, child exploitation etc, due to their anonymous nature in Nigeria.	One month
Angel and McCabe (2019)	Emerging issues in the cryptocurrency market in Africa	Qualitative	Challenges concluded include operational and financial integrity issues from crypto asset providers; lack of investment protection for crypto assets and inadequate reserves and disclosure for some stablecoins; low level of social trust, because social trust tends to deep the financial market and improve economic growth and the standard of living of the people.	One month

Alo and Ishola (2019)	To assess the transactional costs and risks associated with cryptocurrency trading in Nigeria	Quantitative primary data	Challenges concluded include: the promotion of transnational crimes and funding of terrorism; the possibility of price manipulation that may not reflect the actual value of the currency; the loss and theft of data and network and the possibility of cyber crime and online frauds.	One month
Parma et al (2021)	To determine the implication of the expansion of the crypto ecosystem in African markets,	Qualitative	Identified challenges include governance challenges which emanates from the decentralized nature of the currency; challenges associated with integrity due to volatility and related risks of trading in the currency; the non availability and reliability of data in addition to challenges that emanate from cross-border activities and huge energy costs.	One month

Source: **Analysis of Challenges Involved in using Cryptocurrency in Nigeria**

Table 3: Data Extraction on the Opportunities Involved in using Cryptocurrency in Nigeria.

Author(s)	Study purpose	Method	Outcome	Time period
Tiara (2021)	To assess the challenges and opportunities of the crypto currency market in Nigeria	Field notes	The crypto currency business help lift people out of poverty and promote investment opportunities. There are many crypto currency companies in Nigeria such as Remitano, Patricia, Nestcoin and so on. that have been able to create jobs for Nigerian youths.	Two weeks
Akamo (2021).	To determine how Nigerians are making money from the crypto market	Qualitative	*Crypto currencies have been employed by Nigerians to preserve their savings in the face of currency distortion and devaluation; it has also provided job opportunities for the teeming unemployed youths who have found solace in the market to earn income*	Three weeks
Premium Times (2021)	The benefits of crypto currency use in Nigeria	Media analysis	A lot of people in the country have turned to bitcoin for foreign transactions and inter-border transfer taking advantage of the decentralized nature of the currency. Also, a lot of Nigerians use crypto currency to hedge against inflation as naira continues to lose its value.	One week
Uba (2021)	Investigated the regulatory challenges of crypto currency in Nigeria.	Qualitative	Nigerians also use crypto currencies to protect their funds against currency depreciation, send and receive remittances, and conduct commercial transactions.	One month

Makari, (2019).	Investigated the implication of crypto currency use in Nigeria	Qualitative	Crypto currency can be used not only to transfer money for aid but also to administer aid, and money donated in developed countries would go that much further in helping the poor. Similarly, crypto currency has provided a means to greatly expand financial services in the developing world, particularly for the unbanked poor	One month
Mortitz and Sander (2020).	Quantitative	The impact of crypto currencies market inn Nigeria	Crypto currencies facilitate and support financial inclusion due to easy access to the internet from a digital device (for example a smartphone) to engage in financial transactions; also crypto currencies can accelerate the development potentials in the various fields of a country.	One month

Source : **Analysis of Opportunities Involved in using Cryptocurrency in Nigeria.**

Discussion

The study indicated the diverse views of experts on the use of cryptocurrency in Nigeria, focusing on the legality of adoption, its risky nature, challenges and opportunities of adoption. The study found that despite the questions surrounding the legality, the risks involved and challenges of usage in Nigeria, the rate of usage and adoption is on the increase with market capitalisation rising on daily basis. Almost all the studied authors agreed that the adoption of cryptocurrency is on the rise in Nigeria and other developing countries of the world following the problems of inflation, financial inclusion, remittances, job creation, promotion of development activities and, many more it has helped to addressed (Uba, 2021; Makari, 2019; Akamo, 2021; Mortitz and Sander, 2020; Tiara, 2021). Similarly, the potential adoption of the currency in Nigeria could further enhance development in the country in the area of power improvement, facilitates the transfer and utilization of official development assistance (ODA), provision of alternative tax base for the government, reduce the cost of printing currency for the government, reduce the cost of banking services and increase financial inclusion, checkmating the problem of rising unemployment in Nigeria, financial competitiveness, among others (Enitan and Seyi, 2020; Yunusa, 2021; Abiodun, 2022; Uwa, 2021; Temitope, 2022; Uba, 2021).

Conclusion

Crypto-currency has come to stay despite the fact that many countries are scared of legalizing its usage due to the challenges involved which include lack of central authority and its anonymity nature that may attract hackers and encourage cybercrimes such as money laundering. It would therefore be desirable for developing nations like Nigeria to legalize the use of crypto-currency for the protection of her economy and the interest of the citizens for the efficiency of her human capital. This would enable government to assess the returns made and ensure that proper disclosures are made for tax purposes.

Recommendations

The recommendation made in line with the findings of the study are as follows

1. There is the need to focus on developing a practical research and development plan to help law enforcement better identify and investigate illegal cryptocurrency activities and this could be accomplished by:

a. Increasing public awareness of cryptocurrency and its associated crimes,
b. Forming cross-jurisdictional collaborations among agencies,
c. Providing more and advanced training to officers to better equip them to detect cryptocurrency- based crimes,
d. and providing extensive knowledge of cryptocurrency and its mode of operation to special investigation units.

2. Nigeria government should take a clue from countries that are in the process of legislating it and review her regulatory framework for the purpose of legislating the use of crypto- currency which must specify the terms and conditions with respect to privacy law in the interest of the state and citizens, anti-laundry and loss recovery in the case of illicit transactions and possible attacks on users, there should also be insurance of crypto-assets in the interest of investors, etc.
3. ·The legislation should range from monitoring, creation of state – owned crypto-currency to banning or derecognizing of some crypto-currency.
4. The accounting and taxation aspect of crypto-currency should be made known to practicing accountants in Nigeria so as to enable them recognize it in their financial statement.
5. The relevant agencies of government ought to be proactive regarding crypto-currencies by building necessary regulatory and monetary architectures or apparatuses around the new financial technology called crypto-currency so that Nigeria and Nigerians are not left out of this interesting shift in monetary paradigm.

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