

Blockchain Technology and Trade Implications of Cryptocurrency Ban in Nigeria

Abdulmalik Olalekan OLADIPUPO
LCU/PG/002087

**Being a M.sc Thesis Submitted to the Department of Politics and International
Relations, Faculty of Management and Social Sciences,
Lead City University, Ibadan, Oyo State, Nigeria**

**In Partial Fulfillment of the Requirements for the Award of Masters of Science Degree
(M.Sc) in International Relations**

2022

Certification

This is to certify that Abdulmalik Olalekan Oladipupo with the matriculation number LCU/PG/002087 carried out this thesis entitled “Blockchain Technology and Cryptocurrency Ban in Nigeria” in the Department of Politics and International Relations, Faculty of Management and Social Sciences, Lead City University under my supervision and that this work has not been previously submitted.

Prof. Akeem A. Amodu
Supervisor

Date

Prof. Akeem A. Amodu
Head of Department

Date

DO NOT COPY. LEAD CITY UNIVERSITY, NIGERIA.

Dedication

This research work is dedicated to God Almighty and my Mother, Mrs.Oladipupo Folake Misirat.

DO NOT COPY. LEAD CITY UNIVERSITY, NIGERIA.

Acknowledgement

I give praise to Almighty for guiding me through my course of study in this noble University, Lead City University, Ibadan. My unreserved gratitude to Lead City University, Ibadan, Nigeria for the opportunity to undergo this degree. I appreciate the Chairman Governing Council, Professor Jide Owoeye, Head of Department and all Lecturers in this prestigious Institution.

My warmest regards to the Department of Politics and International Relations for the thorough training received. The inestimable contribution of my Head of Department who is also my Supervisor, Professor Akeem Amodu, who mentored and coached me throughout the entire process completing this thesis, can never be ignored. He is very generous in suggesting improvement, his constant interest and guidance helps me to complete this Work. I immensely appreciate Dr. Modupe Albert for her Motherly Advice where needs be. I also want to thank Prof. Afolakemi Oredein the Dean, Post Graduate School, Professor Alaba Ogunsanwo, Dr Tunde Oseni and Mr Chukwuebuka Akuche and Mr. Oyedokun, Dolapo Michael for their direction and assistance. My appreciation goes to my Boss, Mr Debo Olajide who has always provided me the most moral support and the entire members of Quality Control Office, Lead City University, Ibadan.

In addition, I appreciate my mother, Mrs. Oladipupo Folake for her Motherly support and encouragement when all hope seems lost, and the entire Mr and Mrs Adeyemo. Their enthusiasm for me earning this degree has been incredible. I am grateful and pray that we shall continue to experience joy and happiness in our lives, Amen.

Even though the above-mentioned institutions and persons have assisted in the process of this research work, I alone stand responsible for the errors, if any, found in the work.

Abstract

The CBN on the 5th of February 2021 through banks and other financial institutions stated that dealing in crypto currencies and facilitating cryptocurrency exchange are prohibited with effect from 5th February 2021. The CBN argued that there is anonymity and lack of KYC, which made cryptocurrency susceptible to illegal use, thus contradicting the existing laws and crypto's are not legal tender. This study, therefore aimed to analyse the implementation and acceptability of digital currency and study the trade implications of cryptocurrencies ban in Nigeria. Theoretically, this study is anchored on Liberalism with Realism and Constructivism as a counter-argument theory. The study employed descriptive survey research design and the population of the study was made up of 165 bankers, university lecturers and crypto traders. The sampled all respondents using a purposive sampling technique and the data were gathered with the use of structured questionnaire. The Statistical Package for Social Science (SPSS) was used to analyse the data and the presentation was done using tables and descriptive analysis. The findings revealed that the ban on cryptocurrency was majorly due to its susceptibility to financial crimes, easily used as a medium for tax evasion and it is devoid of proper regulation. Further, the ban on cryptocurrencies forced some financial technology start-ups into liquidation while other financial technology companies were forced to lay off their staff because of poor capital inflow due to the ban on cryptocurrency. The study concludes that there is a positive and significant impact of cryptocurrency ban on the development of digital currency in Nigeria. However, the ban on cryptocurrencies has a negative impact on Nigerian digital currency traders. Therefore, this study recommends that the Central Bank of Nigeria to consider developing regulatory policies on the usage and trading of cryptocurrencies instead of an outright ban.

Keywords: Blockchain Technology, Cryptocurrencies, Cryptocurrency Traders, Nigeria

Word Count: 296

Table of Contents

Preliminary Pages	Page
Title Page	i
Certification	ii
Dedication	iii
Acknowledgement	iv
Abstract	v
Table of Contents	vi
List of Tables	ix
List of Figures	x
List of Acronyms	xi
Chapter One: Introduction	1
1.1 Background to the Study	1
1.2 Statement of the Problem	5
1.3 Aim and Objectives of the Study	6
1.4 Research Questions	7
1.4 Hypotheses	7
1.5 Significance of the Study	7
1.6 Scope of the Study	8
1.7 Limitations of the Study	9
1.8 Operational Definitions of Terms	9
Endnotes	11
Chapter Two: Literature Review	12
2.1 Conceptual Review	12
2.2 Theoretical Framework	56
2.3 Review of Empirical Studies	61
2.4 Conceptual Framework	77
2.5 Summary of Gaps in Literature Reviewed	78

Endnotes	80
Chapter Three: Methodology	88
3.1 Research Design	88
3.2 Population of the Study	88
3.3 Sample and Sampling Techniques	89
3.4 Description of Research Instruments	89
3.5 Validation of Research Instrument	89
3.6 Reliability of Research Instrument	90
3.7 Administration of Research Instrument and Method of Data Collection	90
3.8 Method of Data Analysis	90
Endnotes	91
Chapter Four: Results and Discussion of Findings	92
4.1 Demographic Data Analysis	92
4.2 Presentation of Research Questions	95
4.2.2 Presentation of Hypotheses	99
4.3 Discussion of Findings	102
Endnotes	107
Chapter Five: Conclusion	108
5.1 Summary of Findings	108
5.2 Conclusion	109
5.3 Recommendations	109
5.4 Contribution to Knowledge	110
5.5 Suggested Area for Further Research	110
Bibliography	112
Appendix	127

Biodata	155
University Compliance Certification	157

DO NOT COPY. LEAD CITY UNIVERSITY, NIGERIA.

List of Tables

Table	Title	Page
4.1	Demographic Data Presentation	93
4.2	Motives Behind Cryptocurrency Ban in Nigeria	94
4.3	Effects of Cryptocurrency Ban Domestic and International Trade in Nigeria	95
4.4	Impact of Cryptocurrency Ban on Digital Currency in Nigeria	96
4.5	Implications of the Cryptocurrency Ban on the Nigerian Banking Sector	97
4.6	Effect of Cryptocurrency Ban on Digital Currency Traders in Nigeria	98
4.7	Correlation Analysis	99

List of Figures

Figure	Title	Page
2.1	Industries seen as Leaders in Blockchain	19
2.2	Influence of Cryptocurrency Ban on Nigeria	77

DO NOT COPY. LEAD CITY UNIVERSITY, NIGERIA.

List of Acronyms

Abbreviation	Meaning
AML	Anti Money Laundering
BIS	Bank for International Settlement
BTC	Bitcoin
BVN	Bank Verification Number
CBDC	Central Bank Digital Currency
CBN	Central Bank of Nigeria
CDS	Credit Default Swap
CPMI	Committee on Payment and Market Infrastructure
ESMA	European Securities and Markets Authority
EU	European Union
EUROPOL	European Police
FATF	Financial Action Task Force
FGN	Federal Government of Nigeria
GDP	Gross Domestic Product
ICT	Information Communication Technology
IMF	International Monetary Fund
IR	International Relations
KYC	Know Your Customer
MMM	Mavrodi Mundial Moneybox
NDIC	Nigeria Deposit Insurance Corporation
USA	United States of America
WAR	Western Money Remited

Chapter One

Introduction

1.1 Background to the Study

Since the advent of internet and mobile telephone technologies, the world has become a global village as communication from one part of the world to the other has become simple and efficient¹. The ease of interaction across national boundaries facilitated by this innovation in technologies has greatly enhanced international trade². Business deals can be consummated between parties living world apart without any form of physical contact. As a result, the speed of online transactions appears to have overtaken the traditional payment system over time, making it less efficient. Cryptocurrency, an innovation in digital finance powered by Blockchain technology is changing the payment systems and the role of money in this current financial regime.

A system that grants almost instantaneous access to a permanent record of all digital transactions undertaken across the world without revealing precisely who and what is involved in these transactions. This digital database provides users with near-real-time overviews of peer-to-peer trade across national borders. The unprecedented ability to monitor direct Web interaction between quasi-anonymous persons who conduct, verify, and publish records of their digital transactions is at the heart of blockchain's promises and fears. This study investigates the governance implications of this set of emerging technologies for the people and processes engaged in ordering, controlling, and organising an increasingly digital global political economy³.

The technical blueprint for developing blockchain technology was originally proposed in a white paper published by an individual with pseudo name, Satoshi Nakamoto in 2008⁴.

Attempts to identify this individual or group of individuals have been futile, lending a significant aura of mystery to this information communication technique (ICT). The Bitcoin blockchain was originally designed to allow users to exchange monetary-like "coins," but it was eventually repurposed for the digital exchange, verification, and broadcasting of a variety of other information.

By using a cryptocurrency, users can exchange currency digitally without the intervention of a third party⁴. Cryptocurrency is based on the principle of solving encryption algorithms to generate unique hashes with a finite number of possibilities. Users can exchange hashes as if they were transferring tangible currency when combined with a network of computers that verify transactions. There will never be an infinite supply of Bitcoin, preventing oversupply and guaranteeing its rarity. Water, despite its necessity as a life-giving resource, is widely assumed to be free or low-cost due to its abundance. Water would be more valuable than diamonds if it were uncommon. Bitcoin has value because its users believe that if they take it as payment, they will use it somewhere to buy something they desire or need⁵.

As Bitcoin makes worldwide headlines and predictions of cryptocurrency booms and busts abound, there is much that International Relations (IR) experts can contribute to and learn from arguments about the current "wild west" of an unstable and crisis-prone global economy. IR can constructively foreground the mechanisms of power, agency, and legitimacy that persistently underpin technologically enabled shifts in the multinational ordering of a variety of activities, from agriculture trade to migrant remittances, beyond the economic, legalistic, challenges posed to existing legislation, technical analysis of daily price swings, and potential vulnerabilities in computer code. By providing context to debates that have either dismissed Bitcoin as bad or applauded its underlying blockchain technology as "the greatest invention since the Magna Carta." IR can expand on long-standing attempts to comprehend the players,

processes, and objects that contribute to global governance patterns of both change and continuity⁶.

Whether for speculative, philosophical, or security reasons, greater public interest in Bitcoin's guarantees and perils occurred during a period of unprecedented volatility in the exchange values of the original CC, which rose nearly tenfold from just over US\$10, only to fall by nearly half and eventually end 2013 at around US\$750. Following this watershed year, Bitcoin and blockchain technologies became more entrenched into the very global economic system to which their founders had explicitly aimed to provide alternatives⁷.

Bitcoin and other cryptocurrencies have acquired acceptance in the international community as a means of transaction that transcends conventional financial institutions and cross-border rules in the fourteen years after Bitcoin's proposal. Furthermore, state governments, banks, and investors are increasingly interested in employing cryptocurrencies to improve their own financial capacities. Furthermore, because cryptocurrency's blockchain technology allows users to interact freely without the need for a trustworthy third party, the payee and receiver in transactions remain confidential outside of their digital wallet signature.

Bitcoin has gradually gained acceptance for a wide range of transactions in key online commercial marketplaces like as eBay, the "sharing economy" of AirBnB and Uber, as well as more traditional shops, manufacturers, and even some political parties. Some big corporations began constructing their own CCs and integrating blockchains into their business in addition to simply accepting Bitcoin for transactions. Wal-Mart, the world's largest retailer, has been testing technology to improve quality control across its global food supply chain. Several investment banks and stock exchange operators have also begun to integrate blockchain technology in an effort to improve their back-office processes⁸.

The influence of technology innovation is far-reaching, as it affects the entire financial services market and alters the landscape for intermediation. These advances have changed the economy in general, as well as how economic actions might be restricted. Individuals, corporations, and the economy as a whole stand to benefit from these improvements, such as cheaper and speedier payments.

Despite the benefits that Bitcoin and other cryptocurrencies provide in the marketplace, they also create significant challenges for international financial institutions and state governments that regulate or monitor transactions. Cryptocurrency's pseudonymity, combined with the ease of transaction, has proven to be a viable tool for non-state and criminal networks seeking techniques to avoid taxes, governmental restrictions, and international penalties⁹.

Lately, there has been a mixed reaction to this development across the globe¹⁰ Whereas there is outright ban of virtual currency in some countries, others are making regulations to mitigate the risks and enhance the benefits it presents. Nigerian government through its regulatory authorities has issued several warnings against and finally in placed a ban on the investment in use of cryptocurrency especially with regards to the risk of loss of investment^{11,12}. However, some person (or mostly, organisations) still engages in digital currency trading despite its challenges and the regulatory authorities' declaration. This calls for the need to study the implications of the ban on these traders and the development of digital currency in Nigeria.

1.2 Statement of the Problem

Cryptocurrencies such as Bitcoin pose a threat to the post-Bretton Woods system of financial control over global trade. Because Bitcoin is decentralised, it is neither issued by a government nor stored in a single location. Bitcoin and other decentralised currencies use a distributed public ledger, eliminating the requirement for a trusted third party. Mints do not

"print" cryptocurrency, banks are not obligated to store cryptocurrency, and escrow agents are not required to verify transactions with cryptocurrencies. Decentralised bitcoin appears to many customers to be a preferable means of transaction in terms of efficiency and transaction cost; yet, to a state, the removal of the trusted and regulated third party has enormous implications for government control over trade.

Because cryptocurrencies avoid the regulations that oversee monetary transactions, they have damaged sovereign governments' ability to safeguard their populations from harm since their inception. During typical fiat transactions, trustworthy third parties such as banks, credit card firms, or escrow agents prohibit and disclose transactions with linkages to criminal or terrorist organisations. As a result, individuals and organisations interacting with fiat are obliged to register with trustworthy third parties, providing personal information to aid authorities in tracking and prosecuting individuals who commit criminal crimes. Cryptocurrencies such as Bitcoin avoid the transactional barriers that state governments have erected to deter unlawful activity.

The problem is that cryptocurrencies do not work within the traditional financial system, and existing banking agreements and laws are unprepared to deal with bitcoin use. Because of these difficulties, most countries find it difficult to fully regulate it.

In January 2017, Central bank of Nigeria (CBN) released a circular where it totally forbade regulated institutions from transacting in virtual currencies in any way (CBN, 2018). Then on 5th February 2021, Central Bank of Nigeria through banks and other financial institutions stated that dealing in crypto currencies and facilitating cryptocurrency exchange are prohibited with effect from 5th February 2021. The CBN argued that there is anonymity and lack of KYC, which made cryptocurrency susceptible to illegal use, thus contradicting the existing laws and crypto's are not legal tender. CBN stated that there is a need to protect

Nigerians from frauds, risks of loss of investments, money laundering, terrorism financing, illicit fund, and criminal activities from unregulated and unlicensed entities (CBN, 2021a).

Months after the CBN order on cryptocurrency ban, the Nigeria apex bank on October 25, 2021, unveiled its digital currency called e-Naira. It is a digital currency backed by the law, the full sovereignty of Nigeria which operates as a digital form of the Naira, and it is utilised similarly to the cash (CBN, 2021b). The CBN in 2022 later hit a total of 1.314 billion Naira on six commercial banks over non-compliance with cryptocurrency ban order and the directives of the CBN on the closure organisations or person accounts involved in cryptocurrency trading. The banks include Stanbic IBTC, FCMB, Access Bank, Wema Bank, UBA and Fidelity Bank (The Cable, 2022). This ban has generated a lot of controversies and triggers anger among Nigerians, who see crypto currencies as a haven in a battered economy, as Nigeria is presently rated as the world's second – largest Bitcoin market after United States, trading over \$500 million worth of Bitcoin over the last few years.

This study seeks to find out the opinions of expert Nigerians and cryptocurrency traders on the effects and implication of cryptocurrency ban in Nigerian economy.

1.3 Aim and Objectives of the Study

The aim of this study is to discuss the implementation and acceptability of digital currency and to study the trade implications of cryptocurrencies ban in Nigeria. The specific objectives are however, to:

- i. examine the implications of cryptocurrency ban on domestic and international trade in Nigeria
- ii. examine the impact of cryptocurrency ban on the development of digital currency in Nigeria

- iii. assess the implications of cryptocurrency ban on the Nigerian banking sector
- iv. evaluate the effects of cryptocurrency ban on Nigerian digital currency traders

1.4 Research Questions

In order to provide answers to the study objectives, the following questions were raised:

- i. How does the cryptocurrency ban affect domestic and international trade in Nigeria?
- ii. In what ways does the cryptocurrency ban impact the development of digital currency in Nigeria?
- iii. What are the implications of the cryptocurrency ban on the Nigerian banking sector?
- iv. How does the cryptocurrency ban affect digital currency traders in Nigerian?

1.5 Hypotheses

Ho1: There are no significant implications of cryptocurrency ban on domestic and international trade in Nigeria

Ho2: There are no significant impact of cryptocurrency ban on the development of digital currency in Nigeria

Ho3: There are no significant implications of cryptocurrency ban on the Nigerian banking sector

Ho4: There are no significant effects of cryptocurrency ban on Nigerian digital currency traders

1.6 Significance of the Study

The study will seek to study the blockchain technology and the effects of the cryptocurrency ban in Nigeria on international trade. The study will unveil the origin of blockchain and the implications it has posed to the new world order and the emergent international system focusing on international politics and international political economy.

Cryptocurrency traders will find this study useful as it will contain rudiments, and legal instruments developed by different countries including Nigeria in trading digital currencies. The study will serve as empirical background to future researcher who look forward to carrying out similar research as this study will contain.

Similarly, this study will be of benefits to anyone who seeks knowledge about blockchain technology, digital currency and the various implications and benefits of cryptocurrencies on the world economy.

1.7 Scope of the Study

This study is an inquiry into the general acceptability of cryptocurrency and implications on digital currency traders and the international market. However, the scope of the study is limited to Nigeria and respondents will be drawn from Oyo State Nigeria which is the residence location of the researcher. This will enable the researcher to gather relevant data at an appropriate time.

Cryptocurrencies and blockchain are terrifying topics. There are hundreds of cryptocurrencies, and blockchain technology has countless applications. To make this research relevant and focused, it must be narrowed down.

Firstly, the research is limited to cryptocurrencies and blockchain. This means that other types of assets than cryptocurrencies, such as tokens or crypto securities, are not within the scope of this research. As a result, blockchain technology will not be examined outside of the context of cryptocurrencies, such as how it can be used to eliminate intermediaries in the financial, public, or other sectors. This would take us far beyond the scope of this study.

Second, this study will not go into detail on all of the technical aspects of cryptocurrencies and blockchain, as there are many. The legal background is discussed in relation to financial

crime, money laundering, and tax evasion. As a result, the study will primarily examine the legal environment of cryptocurrencies and blockchain in relation to financial crime, money laundering, and tax evasion in Nigeria.

1.8 Limitations of the Study

The researcher encountered constraints during this study. Firstly, the unwillingness of the respondents to participate in the study and the delay in data retrieval. Also, the researcher found it difficult to access crypto traders as many were skeptical about disclosing their identities.

Similarly, the research could not sample the opinions of regulatory bodies on currency matters such as the Central Bank of Nigeria, Security and Exchange Commission, Office of the Comptroller of the currency e.tc. All these places a limit on the findings of this study.

1.9 Operational Definitions of Terms

Bitcoin: Bitcoin is a cryptocurrency, a virtual/digital currency that act as money and a form of payment outside the control of any person, group, institution and government.

Blockchain Technology: It is a massive digital logbook that allows computers in multiple locations to permanently keep new information, with all copies synchronised. It can be public, private, or hybrid, and it cannot be changed. The activity recorded on blockchain cannot be modified or removed; it can only be added to with the agreement of the majority of network participants.

Cryptocurrency Vendors: These are organisations, groups, and individuals domiciled in Nigeria that trade digital currencies as a means of payment.

Cryptocurrency: It is a digital currency in which transactions are verified and records maintained by decentralised system using cryptography, rather than by centralised authority.

This currency is, however, not accepted in Nigeria as a means of legal tender.

DO NOT COPY. LEAD CITY UNIVERSITY, NIGERIA.

Endnotes

- ¹. Carstens, Money in a digital age: 10 thoughts. *Speech at Lee Kuan Yew School of Public Policy*, Singapore, 15 November, 2018
- ². Central Bank of Nigeria (CBN), *Circular to Banks and other Financial Institutions on Virtual Currency Operations in Nigeria*. available at: <https://www.cbn.gov.ng/out/2017/fprd/aml%20january%202017%20circular%20to%20fis%20on%20virtual%20currency.pdf> (2017)
- ³. M. Campbell-Verduyn, Bitcoin, Cryptocurrencies and Blockchain Technologies: Insights from and for IR. *E-International Relations*, 1-3, (2018).
- ⁴. S. Nakamoto, *Bitcoin: A Peer-To-Peer Electronic Cash System*. Available online: <https://Bitcoin.org/Bitcoin.pdf> 2008.
- ⁵. P. D. DeVries, *An Analysis of Cryptocurrency, Bitcoin, and the Future*. **International Journal of Business Management and Commerce**, 1(2), 2016, 1-9.
- ⁶. M. Campbell-Verduyn, *What are blockchains and how are they relevant to governance in the global political economy?* Campbell-Verduyn M. (eds) *Bitcoin and Beyond: Cryptocurrencies, Blockchains and Global Governance*. New York: Routledge, 2018.
- ⁷. O. Kharif, *Bitcoin 2.0 shows technology evolving beyond use as money*. Bloomberg. 2014
- ⁸. L. Shin, MasterCard, Bain Capital Ventures, New York Life invest in Bitcoin company digital currency group. Forbes. 2015
- ⁹. P. de Filippi, *Bitcoin: A Regulatory Nightmare to a Libertarian Dream*. **Internet Policy Review**. Available online: <https://policyreview.info/articles/analysis/Bitcoin-regulatory-nightmare-libertarian-dream> 2019.
- ¹⁰. NDIC. *Press Release*. Available online: <https://ndic.gov.ng/ndic-urgescaution-on-adoption-of-cryptocurrencies/> 2019.
- ¹¹. C. E. Onyeke, *Crypto-currency and the Nigerian Economy: Problems and Prospects*. **IAA Journal of Social Sciences**, 6(1), 2020, 152-162.
- ¹². Central Bank of Nigeria (CBN), Press Release: Virtual Currencies not Legal Tender in Nigeria: <https://www.cbn.gov.ng/Out/2018/CCD/Press%20Release%20on%20Virtual%20Currencies.pdf> (2018)

Chapter Two

Literature Review

This chapter discussed the relevant conceptual, theoretical, and empirical issues relating to Blockchain Technology, Cryptocurrencies, and the implications of its acceptance within the international system with focus on Nigeria. It presents the relevant literature which spurs the empirical investigation of this study.

2.1 Conceptual Review

2.1.1 The Evolution of E-Money

The idea of electronic cash is vague. Under the electronic cash, individuals regularly comprehend the bookkeeping arrangement of freedoms to public and private money. Right now, these situations utilise electronic capacity media. Anyway, it is helpful to take note of, that such frameworks, just as non-cash installments, were around millennia prior¹. In this way, the cutting-edge electronic framework is just a high-level rendition of the thousand-year-old innovation. While researching electronic cash according to such viewpoint one might say that the cutting-edge method for ledger access: bank installment cards and web banking are not electronic cash, as these frameworks just permit tasks with genuine cash held in financial balances. As such, these items just give method for admittance to genuine cash^{2,3}. The issue is to some degree confounded by the way that all advanced financial framework utilises the guideline of fragmentary hold finances that were kept (request stores and current records), that, indeed, is a cheat⁴.

The utilisation of this rule prompts the way that the financial framework all in all expects clearly unrealistic commitments, prompting the way that the volume of bank liabilities (non-cash) far surpasses not just the amount of money accessible in the financial framework, yet

the whole measure of genuine cash in the money related base of the economy⁵. Then again, the rise and improvement of method for internet installments (Webmoney, Yandex, through QIWI, and so on) prompted the way that there were sorts of installment instruments which, albeit not connected with the strategies of opening a financial balance, depended on P2P loaning of genuine cash and acknowledgment of the privileges to these assets through the records. Along these lines, the quintessence of this peculiarity is like the "non-cold hard cash". Nonetheless, the issue of partial hold is as yet present here.

Clearly the quantity of peculiarities that have filled as of late and are deciphered in the writing as "electronic cash" have nothing not the same as other cash substituents which are supported by genuinely money related units, for example, rubles, dollars, gold, and so on For instance, to acquire electronic cash (title characters) WMR, gave by the Webmoney, it is important to move the comparing sum in rubles to Issuer's record. Obviously, you can get these title characters from one more client in the framework; however the first wellspring of the multitude of characters is the guarantor, which is resolved to trade nominal characters for genuine monetary forms. Similar applies to other comparable installment frameworks: Yandex Money, QIWI. Thus, "electronic cash" is made based on the current financial units, just supplanting them in specific areas of the economy. Obviously, the backer can deliver a bigger measure of "electronic cash" instead of genuine cash, i.e., to follow up on the rule of partial saves.

In any case, it doesn't intend that "electronic cash" is basically the new sort of cash, since this component can be innate to any money substitutes. We can say that the advanced "electronic cash" is a characteristic stage in the development of method for installment. Notwithstanding, the oddity of "electronic cash" is just a specialised angle. "Electronic cash" isn't a peculiarity of data. They are for data just as in they are the data on the development of the freedoms of

responsibility for money related units. Also, installment instruments utilised in the association of credit only installments give indistinguishable data. Yet again in frameworks that perform exchanges utilising 'electronic cash', ledgers are possibly utilised while storing and pulling out cash from the framework, which affirms their inclination as money substitutes. Like any money substitute, "electronic cash" can't truly be more dependable than the element giving them. Any cash substitute expects the presence of an arbiter, i.e., the individual who acknowledged the commitment to trade cash substitute for genuine cash. In the XIX century the job of such delegates was dedicated to banks giving banknotes that could be traded for gold. These days, installment frameworks, giving "electronic cash", are the go-betweens answerable for the trading of electronic cash gave by them in return for genuine cash⁶.

2.1.2 Blockchain Technology

Blockchain is a distributed digitised ledger technology, which enables legitimate and extremely secured transactions to take place by means of a point-to-point network. It was created in 2008 by an unknown person behind the online cash currency Bitcoin, under the pseudonym of Satoshi Nakamoto and brought into practical use in 2009 as a technology to use Bitcoins. Since then, blockchain has continued to gain popularity and has become increasingly useful in many domains. Following Bitcoin, there have been many different types of crypto currencies that operate on a blockchain network. In addition to cryptocurrency, blockchain is proving to be useful in areas such as governance, cyber security, industrial processes, the financial sector, entertainment education, and many others.

Blockchain has the potential to grow to be the bedrock of the worldwide recordkeeping systems, Blockchain is fundamentally a distributed database and open source where anyone can change the underlying code and see the current status of an operation. It is actually a peer-to peer network with a massive global database that runs on zillions and zillions of

computers. It does not require any controlling intermediaries to authenticate the transactions. The most disruptive technologies of the modern e-era are cryptocurrency and blockchain technology. Blockchain's scope can disrupt critical barriers to efficiency, commitment, and growth. It could record any structured data from beginning to end. Blockchain greatly supports settlement systems in the event of setting trillions of real-time transactions in banks⁷.

At their essence, blockchains are digital numerical sequences written into computer software that enable the secure exchange, recording, and broadcasting of transactions between individual users operating anywhere in the world with Internet access. The development of blockchains, like other technological changes, drew on and incorporated various existing technology. Blockchains utilise digital encryption technologies to disguise the precise material traded as well as the identities of individual users to variable degrees. Algorithms, which are precoded set of step-by-step instructions, are also used to solve difficult mathematical equations and reach an agreement on the validity of transactions inside user networks. Time-stamping methods then package validated transactions into datasets, or blocks, on a regular basis. These 'blocks' are linked together sequentially to form 'chains,' which make up bigger 'blockchain' databases of transactions that broadcast a permanent record of transactions while retaining the anonymity of users and specific material transferred. Blockchains are supposed to be maintained in immutable ways by all users unless people reach a clear consensus to make modifications.

2.1.2.1 History and Nature of Blockchain Technology

A blockchain's three fundamental advantages are that it gives straightforwardness, verification and inspecting capacities and by and large advancement of blockchain innovation can be held in two stages. First stage comprises of years somewhere in the range of 1991 and

2013. As a matter of fact, the expense of the Lehman Brothers in 2008 to the USA is assessed in trillions and tragically it set off a chain of occasions that sent a few nations into monetary downturn or sadness.

Bitcoin appeared in 2008 as the principal utilisation of Blockchain innovation. One supporter of the emergency was the concentrated installment and money related framework in light of clearinghouses that go about as delegates among purchasers and venders and assume the danger of defaults. Bitcoin is a creative innovation that might permit banks to settle accounts among themselves without depending on concentrated elements. In view of Blockchain innovation, Bitcoin is viewed as the principal decentralised money framework that chips away at a worldwide scale. It depends on cryptographic evidences of work, computerised marks, and shared systems administration to give a conveyed record containing exchanges⁸. Since the time of Bitcoin, numbers of utilisations have trimmed all of which try to use the standards and capacities of the computerised record innovation. Thus, blockchain history contains a not insignificant rundown of uses that have appeared with the development of the innovation⁹.

Blockchain stage 2 is called Contracts and comprise of years somewhere in the range of 2013 and 2015. Created by Vitalik Buterin, Ethereum was brought into the world out as another public blockchain in 2013 with stretched out functionalities contrasted with Bitcoin, an advancement that has ended up being a significant second in Blockchain development timetable. He separated Ethereum from Bitcoin Blockchain by empowering a capacity that permits individuals to record different resources like agreements. With his advancement new elements extended Ethereum functionalities from being cryptographic money to be a stage for creating decentralised applications also. In 2015, Ethereum blockchain has sent off and

become probably the greatest utilisation of blockchain innovation enabled its capacity to help brilliant agreements used to fill different roles⁹.

Additionally in 2015, in 2015, the Linux Foundation disclosed an Umbrella venture of open source blockchain called Hyperledger. Hyperledger doesn't uphold Bitcoin or some other cryptographic money. Hyperledger center is to empower the utilisation of blockchain innovation to further develop execution and unwavering quality of current frameworks to help worldwide deals. It is something like a center for open modern blockchain advancement¹⁰.

In 2017, an organisation called Eos distributed a paper enumerating a new blockchain convention fueled by an EOS as the local digital currency. Eos fundamental intention is to energise the arrangement of decentralised applications through an independent decentralised organisation. Stage 3 of Blockchain started in 2018 and called applications. Lately, various undertakings have sprung up all utilising blockchain innovation abilities. Neo is one of the applications sent off in China, charged as the principal open source, decentralised, and blockchain stage. Neo gives itself a role as the Chinese Ethereum having as of now gotten the sponsorship of Alibaba CEO Jack Ma. One more digital money stage is improved for the Internet of things (IOT) biological system as it endeavors to give zero exchange expenses just as novel confirmation processes. Called IOTA. Then Monero Zcash and Dash blockchains appeared as an approach to resolving a few issues like security and adaptability⁹.

With regards to Blockchain economy, it very well may be characterised as a term for an advance toward digital forms of money and computerised record frameworks, and away from conventional public hard monetary forms and heritage, antiquated record frameworks.

In the blockchain economy, innovations like Bitcoin and blockchain are the regular instruments for monetary the board, rather than conventional programming application

programs overseeing existing public monetary forms. Additionally, the blockchain economy is a situation and potential future climate that digital forms of money will supplant current financial frameworks universally¹¹. Additionally, with blockchain-based resource move, customised monetary and taxpayer supported organisations may be better custom-made to individual necessities. Blockchain innovation presently reforms the putting away, the board and move of significant worth between advanced characters in numerous monetary areas.

The Future of the Blockchain Market Report uncovered conveyed record innovation (DLT) named blockchain hopefully would have a positive financial effect. It will contribute as much as \$120 billion dollars around the world somewhere in the range of 2018 and 2024. Additionally, the review uncovered that the advantages presented by blockchain implied standard reception was exceptionally plausible. They anticipated that blockchain could contribute anyplace between \$87 billion to \$120 billion by 2024, contingent upon which ventures add it and the pace of reception¹². Blockchain innovation has been holding many guarantees for not just the monetary area, specifically its monetary business sectors framework, yet additionally for the protection business. At the core of this energy for blockchain lies the new decentralised value-based model that the innovation allows, whose standards depend on Satoshi's white paper about distributed correspondence. Blockchain innovation is probably going to unequivocally affect the computerised economy and worldwide internet business, definitively due to this decentralised value-based model that it works with. Furthermore, without a doubt, regardless of whether the portion of web-based business has been consistently ascending since the age of the Internet, basically throughout the last score, the main transactional paradigm is still centralised¹³.

While blockchain technology is having a significant impact on the financial sector, it is also allowing new industry leaders to emerge. Financial services appear to be the blockchain's

near-term future leader. Energy, industrial products, healthcare, and utilities are some of the other industries. With the help of the PwC Global Blockchain Survey in 2018, World Economic Report experts show the proportions of sectors impacted by distributed ledger technology (blockchain) in the graph below¹⁴.

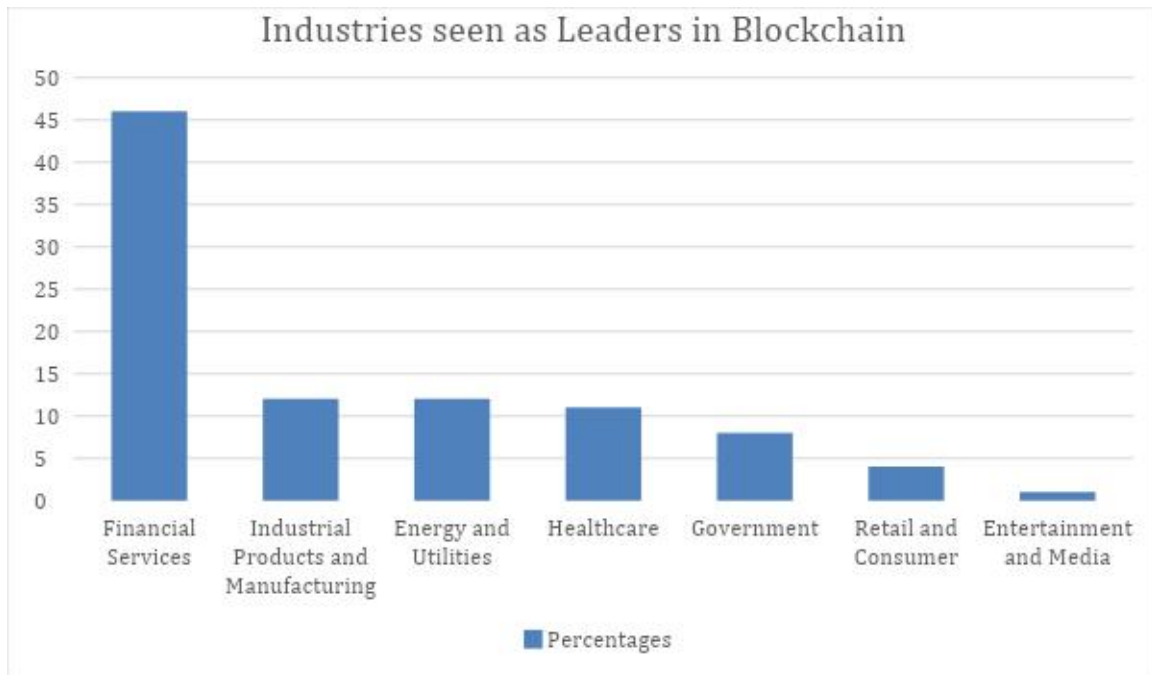


Figure 2.1: Industries seen as Leaders in Blockchain

Source: World Economic Forum, 2018

The idea of distributed ledger technology - or blockchain as it is normally called - has overwhelmed the monetary administrations area, with funding and venture filling innovation new businesses. Banter over blockchain's guarantee, just as its limits, is progressing. For each devotee who says blockchain is the most progressive innovation stage to arise since the web, there are cynics who guarantee it is only the most recent tulip insanity.

In any case, an expansive agreement is arising that it addresses a genuine development over a significant number of the frameworks and cycles utilised in monetary administrations and banking today. Our perspective on the validity of blockchain innovation is educated by

authentic conversations with customers, banks, trades, focal protections safes and existing business sector specialist co-ops. There has been a flood of consideration and drives from market members, including new companies and recently framed industry consortia zeroed in on driving specialised guidelines and cultivating coordinated effort. While in the United States, the Depository Trust and Clearing Corp, is handling recommendations for a total substitution of its credit default trade (CDS) settlement and announcing foundation, the Australian Stock Exchange is endeavoring to address changing administrative prerequisites with a blockchain-based pilot.

Controllers like the Bank of England and European Securities and Markets Authority (ESMA) have distributed smart discourse on the achievability of advanced money and conveyed record innovation. Altogether, the tone of discussions has moved from "Is this value investigating?" to "How would we best draw in?" Financial responsibilities to blockchain are likewise developing. Interests in blockchain new businesses to date have reached \$300 million, a figure that is developing quickly. Speculations added up to \$125 million out of 2015, and this has as of now been outperformed in the primary portion of this year.¹ Although prevalently funding upheld, a modest bunch of organisations have drawn in huge bank venture. Besides, we see developing inner spending by banks, which we gauge added up to \$80 million in 2015¹⁵.

2.1.3 Cryptocurrency

Cryptocurrency is explained as a digital token that utilises cryptography which enables the exchange of its value for other items. It can be used at market rates or as a substitute for legal tender. They trace the origins of cryptocurrencies back to 2009, when Bitcoin, a type of cryptocurrency, was first demonstrated. It used a ledger system known as blockchain

technology to verify that a user's cryptocurrency, in this case Bitcoin, is not spent more than once¹⁶.

Furthermore, miners that are involved in the development of bitcoin safeguard the process's sanctity. The European Central Bank listed several dangers associated with cryptocurrencies in 2012, ranging from value instability to payment system instability, the lack of legislation to back it up, and the system's susceptibility to cyber-attack. Bitcoin, Ethereum, Litecoin, and Zcash are examples of cryptocurrency.

Cryptocurrencies are computerised monetary standards that depend on a cryptographic convention to direct the way in which (and the degree to which) money can be made or potentially traded. Instead of past advanced monetary forms (like Second Life's Linden dollars, or World of Warcraft's gold) which are both given and directed by a focal server, Bitcoin is a dispersed, around the world, decentralised digital currency that is overseen exclusively and only by an open source cryptographic convention: there is no administration, organisation, or bank responsible for giving or overseeing Bitcoins.

Although cryptocurrency can be used to purchase everyday products and services, many people invest in cryptocurrencies in the same way they would in other assets such as stocks or precious metals. While Bitcoin is a fresh and interesting asset class, investing in it can be risky because you must conduct extensive research to properly grasp how each system operates. Cryptocurrency is a digital currency that is decentralised and based on blockchain technology. Although most people are familiar with Bitcoin and Ethereum, there are over 5,000 distinct cryptocurrencies in circulation. In other words, Bitcoin is a national-scale international phenomena based solely on an untraceable electronic monetary system.

Satoshi Nakamoto proposed Bitcoin as the first cryptocurrency in a 2008 paper titled "Bitcoin: A Peer-to-Peer Electronic Cash System." The idea was characterised by Nakamoto as "an

electronic payment system based on cryptographic proof rather than trust." When pseudonymous creator Satoshi Nakamoto launched Bitcoin in 2009, it was first seen as an intriguing, if implausible, attempt to create an alternative money (or cryptocurrency) that exists independently of the established financial system¹⁷.

2.1.3.1 Nature and Types of cryptocurrencies

Cryptocurrencies differ from traditional money in that they do not exist in physical form. Also, they have no centralised authority or central bank regulating the issuance of the currencies and transactions on the currencies. They also differ from digital payment mechanisms or services. This is due to the fact that digital payment services are just mechanisms for online payment in fiat money and are thus typically denominated in such fiat currency. Cryptocurrencies, on the other hand, represent money in digital form and generally are not denominated in fiat currency¹⁸. As of present, the cryptocurrency industry consists of over 1,400 coins with varying user bases and trade volumes¹⁹. The most common types of cryptocurrencies are Bitcoin, Ethereum, Dash, Monero, Ripple, Ethereum Classic, Litecoin, NEM, Augur, and Maidsafecoin.

The invention of cryptocurrency has sparked scientific and societal debates about its nature, with regards to the category of property to which it may be grouped and its legal status under different jurisdictions. The true nature of cryptocurrency is shrouded in obscurity and unfortunately for regulators, cryptos do not fit neatly into any defined category²⁰. It is opined that to regulate cryptocurrencies effectively and efficiently, its position in the eyes of the law must first be ascertained. It is often argued whether cryptocurrency is a commodity, a collectible, a currency or even a security²¹. Again, it is often asked whether the rights associated with Cryptocurrency are contractual and to what extent is Bitcoin, for example, a chose in action?²².

2.1.3.2 Challenges and Prospects of Cryptocurrency

The challenges posed by crypto-currency system are two-fold: first to the regulatory authorities (of which FATF is mainly concerned with) and then to the community of its users (or investors). The risks to the users (or investors) are beyond the scope of this study but should be kept in mind. They include but not limited to price wide volatility, theft, and unguaranteed by any central government. Some of the major problems to the regulators include the following:

1. Terrorism Financing

Conventionally, one of the most challenging aspects of organising international terrorist activities is rooted in financial transactions. This is because terrorism is highly dependent on cash flows ranging from the acquisition of ammunition to domains and pamphlets²³. Traditionally, terrorist organisations use a variety of methods to launder and finance terror activities. Two of the most popular methods they employ includes Hawala networks and conventional international banking. Hawala network is an alternative remittance channel that exists outside of traditional banking systems.

Transactions between hawala brokers (i.e., hawaladars) are made without promissory notes because the system is mainly based on trust. The network is also referred to as underground banking because money launderers and terrorists take advantage of this system to transfer funds from one location to another. Although Hawala networks are effective in transporting money from one location to another anonymously, they are inefficient in collecting monies from several donors and disbursing those amounts to a single or multiple geographically distant end destinations. As a result, the process of funding, planning, and carrying out attacks is confined by the limitations imposed by a trust-based network (such as Hawala) in the dynamic collecting and flow of cash²⁴. Conversely, conventional banking systems which

use Society for Worldwide Interbank Financial Telecommunication, Business Identifier Codes (SWIFT-BIC) or other modern commercial banking protocols or/and standards are efficient means of carrying out international financial transactions.

The issue for terrorists with these systems is that banks must strictly comply to robust regulatory frameworks within codified national and international agreements such as those produced by the Financial Action Task Force²⁵. Terrorist organisations operational security is, therefore, exposed to the oversight by banks, law enforcement, and intelligence agencies when they make use of conventional banking systems. Due to the inadequacies of these old systems in collection and disbursement of funds for terrorist organisations' activities, cryptocurrency (Bitcoin) appears to provide better alternatives or potentially so. This is because by its design, Bitcoin addresses, which function as accounts, have no names or other customer identification attached, and the system has no central server or service provider.

Again, the Bitcoin protocol does not demand or provide participant identification and verification, nor does it maintain historical records of transactions that are necessarily linked to real-world identities. A case in point is Silk Road. Silk Road operated a hidden website designed to enable its users to buy and sell weapons amongst other illicit transactions. It achieved anonymity by operating on the hidden Tor network and accepting only Bitcoins for payment. Using Bitcoins as the exclusive currency on Silk Road allowed purchasers and sellers to further conceal their identity, since senders and recipients of peer-to-peer (P2P) Bitcoin transactions are identified only by the anonymous Bitcoin address/account²⁶.

2. Money Laundering

Money laundering is a constantly evolving criminal phenomena, with new methods of operation and business models²⁷. A good cash-out strategy is one of the most difficult tasks that a criminal company has, and it is not easy to achieve. Crime proceeds without laundry outlets would make the criminal operation unproductive, unless done out solely for personal gain. Traditionally, money mules, offshore accounts, or expensive things such as art, mansions, boats, or a mix of those have been used to facilitate the laundering of crime money^{28,29,30}. Alternative payment systems, such as Western Union and Perfect Money, are said to play an important role in money laundering schemes. Prepaid credit cards, gift certificates, and other easily exchangeable non-traditional value goods are also frequently related with crime money laundering. Today, so-called innovative payment channels are playing a larger role in actual money laundering activities^{31,32,33}.

Cryptocurrencies stand out in the field of innovative payment mechanisms. A trend is visible, with criminals increasingly using cryptocurrency to cash out crime earnings³⁴. Europol even reports that Bitcoin is accounting for over 40 per cent of all identified criminal-to-criminal payments in cybercrime investigations. Some of the main features of Bitcoin, which make it attractive to money launderers and at the same time frustrate the efforts of anti-money laundry regulators, are the protocol's anonymity and resilience through flexibility²⁴. Tracking the injection, layering, and reentry of laundered funds without being able to link an identifiable user to a single Bitcoin address would be extremely difficult for AML enforcement.

Moreover, as each mining node of the Bitcoin network receives and processes all transactions, and the Bitcoin network automatically scales the difficulty for completing blocks based on the total processing power of all miners, stopping the Bitcoin network from functioning

requires disabling every miner on the network. Therefore, AML efforts face a target that is both difficult to identify and essentially impermeable to interruption. Bitcoin potentially allows any user, including money launderers, to transfer money at near instantaneous speed at little or no cost, with very low barriers to entry, while remaining virtually anonymous without what could otherwise require a public paper trail. Users' abilities to exchange Bitcoins directly for other currencies, to transfer through an endless number of different Bitcoin addresses for obfuscation, and to trade with other users for physical goods further frustrates AML efforts. Essentially, Bitcoin and analogous virtual currencies could enable money launderers to move illicit funds faster, cheaper, and more discretely than ever before.

3. Tax Evasion

Bitcoin (and other cryptocurrencies) offer a new advantage to tax evaders that conventional tax havens do not. This is because the operation of Bitcoin is not dependent on the existence of financial intermediaries such as banks. Because it is exchangeable peer-to-peer, Bitcoin seems immune to the developing international anti-evasion regime. Thus, cryptocurrencies have the potential to become the ultimate offshore bank account (tax havens)²⁹. A service provider, for example, might hypothetically accept Bitcoin payments for real-world services. Given that the service provider is not needed to identify herself when creating her online Bitcoin wallet, tracing the earnings accumulated in this wallet back to the service provider would be extremely difficult. Such money is plainly taxable in most (if not all) jurisdictions throughout the world; but, unless the service provider voluntarily declares it, tax authorities are unlikely to be aware of it.

Another dimension of (even more sophisticated) approaches to tax evasion through Bitcoin could involve third parties. For example, it is possible to use tax-exempt buying agents to invest in traded securities and commodities using a Bitcoin-equity swap contract. Under such

schemes, a Bitcoin user (the investor) who is interested in investing in the stock of a particular company could pay the Bitcoin amount he/she wishes to invest to a buying agent (the agent). The agent would then use the dollar value of the amount paid to buy the stock. The agent would transfer to the investor the Bitcoin value of any dividends paid by the company to the agent. Once the contract was terminated, the agent would either pay to the investor the Bitcoin-value appreciation of the stock, or the user would pay the agent the Bitcoin-value depreciation. Because of its tax-exempt status, the agent would always have no tax liability. The agent is indifferent because it has no economic exposure to the performance of the stock. The investor, on the other hand, is fully exposed to the performance of the stock as though he/she had invested directly in the stock. The return on investment of the Bitcoin investor is neither reported nor taxed because tax authorities are completely unaware of his/her involvement³⁰.

Despite the regulatory risks posed by the crypto-currency technology, it has legitimate uses. It is cheaper and faster in international remittances, it aids international trade, especially at micro level, and it also has the potential to improve financial inclusion.

1. Ease of Remittances

International remittances are under stress in various ways. For example, in Somalia the Hawala systems have been under threat of being shut down due to concerns on the part of banks and states that they are financing terrorists. Remittances are a vital element of the Somali economy, but companies like Dahabshiil that provide this crucial service have been targeted for exclusion by banks in places like the United Kingdom which has a large Somali population. Bitcoin theoretically could be used to bypass such banks to form an alternative remittance channel (Many workers in Australia regularly send money back to their families overseas).

Remittances are low-value payments individually. Nonetheless, they constitute up to about 10% of GDP in some developing countries (27% in Tonga and 20% in Samoa). Thus, high remittance costs have important implications on socio-economic development of these countries. However, remittance costs in Pacific Island countries are among the highest in the world. For example, it costs \$33.20 to send \$200 (16.6% fee charge) from Australia to Vanuatu, and \$28.60 (14.3% fee charge) to Samoa³⁵. There can be many parties involved in the chain of transactions made for these payments and there is sometimes little transparency on the total cost of exchange rates and fees. Remittance payments can also be complicated and made more expensive by the difficulties of satisfying AML/CTF (Anti-Money Laundering/Counter Terrorism Financing) regulation, especially where the receiving party may not have a bank account. With Bitcoin, it cost less than or equals 2%. Remittances into Nigeria in 2018 totaled \$24.3 billion (6.1% of GDP). Therefore, Nigeria would be saving up to 14.6% and 12.3% in cost of remittance if the rate of transfers to Vanuatu and Samoa from Australia is applied respectively. Whereas transfers through Western Union take from 1 hour to 5 days, Bitcoin transfers are real time³⁶.

2. International Commerce

Bitcoin also has potential to facilitate small-scale international commerce. Local merchants in poorer nations may have difficulty accessing international payment networks in order to sell their items abroad. A rural crafts cooperative in Nigeria, for example, may struggle to put up a website with an integrated credit card payments system, but obtaining a Bitcoin address may allow them to sell products in return for Bitcoin tokens, avoiding regular e-commerce platforms (which often involve having to set up a merchant account with a formal bank). Provided that a market exists to exchange such Bitcoins received in trade back into a usable local currency, this could prove useful.

For example, imagine a scenario where a small-scale independent producer of sustainable cocoa butter products sold them to US clients in exchange for Bitcoin tokens that were then redeemed for local or foreign currency on a Bitcoin exchange. Likewise, a small-scale non-governmental organisation can easily set up to receive Bitcoin tokens as donations. Yet, however, there appears to be little robust empirical evidence on the extent to which such use of Bitcoin is occurring. There are many anecdotal examples (found on online forums, media sites and social media feeds) of people using it to make international transfers or using it to buy goods internationally from small merchants, but no systematic studies beyond proxy studies of Bitcoin users³⁷.

3. Financial Inclusion

In the examples, Bitcoin was used as an intermediary currency to facilitate transfers between other currencies. This may assume the user has access to a bank account but struggles with the cost and difficulty of international transfers or ecommerce systems. It is possible, however, to focus on the Bitcoin system as a type of decentralised bank. If a person has a personal computer or a mobile phone that can be used to download a Bitcoin wallet, they can obtain a public key that represents their account on the global system. This in turn comes to resemble a quasi-bank account in which you can build up savings. In the context of a country with a lack of banking infrastructure and a reliance on cash, such a technology might theoretically be a safer method to retain money and a more convenient way to transmit money in regular transactions. Rather than merely be useful for remittance systems, Bitcoin could be an infrastructure for everyday local payments in precarious, informal settings.

In this sense, Bitcoin has potential to complement, or compete with, mobile banking applications. M-PESA has already established itself as a leading mobile banking service in Kenya, enabling up to a quarter of the working population to use mobile phones as a type of

digital wallet to transfer currency by using text messages. The politics of mobile banking are tricky, though, involving struggles between regulators, banks, and telecoms companies. In Nigeria, mobile money has developed more slowly, partly due to Nigerian banks lobbying regulators to only allow banks to operate mobile money services, rather than telecoms companies. Bitcoin, by bypassing the incumbent institutions with their internal politics, might offer informal solutions that operate beyond the formal channels used by incumbents³⁷.

2.1.3.3 Cryptocurrency, Bitcoin and the Nigeria Economy

The development of Bitcoin as a cybernetic money has triggered repercussions in the world economy, including in Nigeria. There have been several discussions about the benefits and drawbacks of cryptocurrencies to the Nigerian economy. However, the Nigerian government has attempted to restrict cryptocurrencies through its governing bodies such as the Central Bank of Nigeria and the Securities and Exchange Commission. However, its legal status remains uncertain, in contrast to nations such as Morocco and Algeria, where there is an express prohibition on trade in Bitcoins, with high fines for violations³⁸. The warnings are primarily intended to educate citizens about the distinction between actual state-issued and guaranteed currencies and cryptocurrencies, which are not. Following the actions of the Central Bank of Nigeria and the Securities and Exchange Commission, lawmakers have urged the regulatory authorities to expedite efforts to present a legal framework for cryptocurrencies in Nigeria.

2.1.4 Introduction of Bitcoin

Bitcoin is one of the most prominent cryptocurrency wallets, having been founded in 2008 by an unknown individual or group of individuals using the alias Satoshi Nakamoto. On the shared network, a decentralised computerised currency can be sent from one client to the next. Bitcoin network operates without the use of intermediaries, with exchanges taking place on a publicly accessible report known as blockchain and clients' information being kept private. A decade after its launch, it is the most commonly used and recognised advanced currency³⁹.

Bitcoin, as a digital cryptocurrency, has no fundamental value. Unlike gold or other commodity-backed currencies, which can be redeemed for a precise amount of these commodities on demand, Bitcoin is not backed by anything, and hence cannot be redeemed for any specific good or service. Bitcoin also differs from the majority of currently in circulation fiat currencies (currency made legal tender by a government fiat but not based on or convertible into gold or other commodities) in that it is not recognised as 'money' by any state or government. Since the collapse of the gold standard, most national currencies have been fiat currencies that are not redeemable for anything - yet they benefit from the fact that they are legal tender, that is, the only currency with which taxes in their respective states may be paid. As a result, unlike traditional currencies (such as euros or dollars), the value of Bitcoin is determined completely by the law of supply and demand and is easily influenced by government regulation⁴⁰.

Bitcoins are created through the process of "mining," which rewards users for contributing computing power to the network by awarding newly created Bitcoins to every user who solves a difficult mathematical problem (the so-called "Proof of Work"), the difficulty of which increases with overall network strength. The overall system security and wholesomeness are solely dependent on the mining stages, which provide a means to verify

transactions through a decentralised network of peers concurrently processing transaction data (often in exchange for a fee) before they are recorded into a public ledger or 'blockchain.' As a result, rather than relying on a centralised bank or authority, Bitcoin depends on cryptographic methods and peer-to-peer technologies to enable users to transfer money securely and anonymously, without the need for any intermediary⁴⁰.

Thus, rather than relying on a centralised bank or authority, Bitcoin depends on cryptographic methods and peer-to-peer technologies to enable users to transfer money securely and anonymously, without the need for any intermediary.

Despite the fact that the creation of Bitcoin was linked to a utopian ideal of a future devoid of any centralised currencies, with Satoshi Nakamoto actively debating the perceived ills of nation-state control over money, none of these cryptocurrencies have come close to replacing any of the established currencies. Nonetheless, they have resulted in the formation of a new ecosystem that coexists (more or less amicably) alongside the existing financial system. A number of exchanges (including MtGox, Bitstamp, BTC-e, and many others) have formed to provide a simple and quick way for users to acquire and sold Bitcoins. With the introduction of intermediaries like BitPay and Coinbase, as well as other merchant processors that instantly convert Bitcoin into fiat currency for a very low fee, many more merchants are now accepting Bitcoin payments without incurring the risks associated with the cryptocurrency's high rate of fluctuation. As a result, many internet users now have the option of purchasing more and more goods and services with Bitcoin, in addition to traditional national currencies.

Consumers should be aware that Bitcoin transactions are risky because they cannot be reversed. Unlike traditional payment systems such as wire transfers, credit card purchases, or even Paypal transactions (which can all be reversed in the event of errors, mistakes, or

anomalies), Bitcoin transactions are irreversible once completed and can only be refunded by the person who received the funds.

2.1.4.1 Features of Bitcoin

Bitcoin is something beyond a method for moving currency from one individual to another. It has various qualities that put it aside from other cryptocurrencies⁴¹. Control against misrepresentation: It offers clients the most significant level of protection from the most pervasive kinds of extortion, including chargebacks and unapproved charges. Clients can encode their wallets and have unlimited oversight over their assets. Because of the security. Subsequently, there is no danger of fraud⁹. Bitcoin is worldwide available, permitting any bank, enterprise, or individual to send and get installments safely anyplace, whenever, surprisingly fast. All types of installments from across the world are accepted⁴².

2.1.4.2 Operations of Bitcoin

People can utilise Bitcoins to make installments to other people or shippers without the requirement for a third party to approve the exchange, like a bank or monetary establishment. All things considered, the blockchain is utilised to clear and approve exchanges inside the framework. Blockchain innovation supports most of cryptographic forms of money. In basic terms, it is a strategy for moving and putting away information or data produced during Bitcoin transactions⁴³. The blockchain is a public record that monitors all Bitcoin exchanges and uncovered them openly. A square is a record of late exchanges that exist endlessly. The blockchain, which traces all the way back to the underlying Bitcoin exchange, is comprised of squares of recorded information that expand upon one another. The blockchain's straightforwardness is basic for guaranteeing the approval interaction since it empowers the local area to screen and self-police exchange conduct. It likewise permits both the shipper and the beneficiary to be checked, making twofold expenditure of Bitcoin impossible⁴⁴.

A public key and a private key are produced when a Bitcoin wallet is made to hold Bitcoin. Public and private keys are a progression of extensive numbers and letters that work in basically the same manner to a client's username and secret word. Assuming they wish to send currency to them, they'll require their public key. No one necessities to know their name or email address since it's simply a series of numbers and digits. Accordingly, Bitcoin clients are mysterious. In any case, the private key is kept stowed away.

The private key is one's recognisable proof on the blockchain. To utilise Bitcoin, you'll require a private key. Any individual who finds it can take all of the Bitcoins in the record or wallet. An installment request in the Bitcoin framework can be shipped off quite a few organisation hubs. The organisation hubs are associated in a free organisation, and the message is sent until all hubs have been told of the transaction⁴⁵.

4.1.2.3 Benefits of Bitcoin

The capacity to stay mysterious. When opening a record with a bank, clients should introduce their recognisable proof. Anybody, wherever in the globe, can send currency to one another utilising Bitcoin. To open a Bitcoin wallet, there is no KYC (Know-Your-Customer) system. It is totally unknown while being totally straightforward. Without respect for an organisation's name, address, or some other data, any organisation can produce a limitless number of Bitcoin addresses⁴⁶. A shared cryptographic money network is one in which there is nobody server accountable for movements of every sort. Data (in this case, currency) is traded between at least two programming customers. Clients' program wallets are completely associated with the Bitcoin organisation. Every customer monitor generally dedicated exchanges just as the quantity of Bitcoins in their wallets. Many scattered servers process exchanges. Banks, expenses, and states can't control the progression of currency between them. It's easy to utilise. Considering that acquiring a ledger for an organisation in Ukraine is

excessively troublesome and can be denied without clarification, organisations will think that it is more advantageous to use Bitcoin. The organisation makes a BTC wallet in around 5 minutes and starts utilising it immediately, with next to no inquiries or commissions⁴⁷.

2.1.4.4 Threats to Bitcoin

Customary installment strategies, for example, a charge card charge, bank draft, individual check, or wire move all benefit from being protected and revocable by the banks in question. Bitcoin exchanges, then again, are irreversible. With regards to Bitcoins, the outcome is conclusive each time they change hands and wallets. Your Bitcoin wallet, then again, isn't covered by protection. Your wallet's substance is lost forever assuming you lose your wallet's hard drive information or even your wallet password⁴⁶.

Bitcoin wallets can't be seized, frozen, or reviewed by banks or law implementation. Spending and withdrawal limits can't be set up on Bitcoin wallets. The proprietor of the Bitcoin wallet is the one in particular who can conclude how the currency is managed³⁹.

2.1.4.5 Bitcoin in a Regulated Framework

Overall, whether or not Bitcoin will thrive in becoming an alternative currency that coexists peacefully alongside a range of established national currencies is not dependent on the cryptocurrency's technical and/or economic sustainability - which has already proven to be long-term sustainable⁴⁸. It will instead be determined by the Bitcoin ecosystem's ability to operate in a more controlled framework, either through self-regulation (that is, through market-based processes or with the backing of a private regulatory organisation like the Bitcoin Foundation) or by state regulation. While the former can be implemented - informally - by the community through a dynamic process of trials and errors, the latter will necessitate legislators devising a proper way to regulate an inherently decentralised currency in order to

prevent it from being used to support criminal activities and/or to avoid financial regulations and economic policies of nation states.

In this sense, it is crucial to recognise that Bitcoin has only recently taken off and is still a very young phenomena and nascent sector. It opens a space for permissionless innovation (in banking) in the same way that the internet does in communications. While it has immense potential, its current impact on the global economy is small. As a result, there is currently little pressure for government intervention, particularly because such intervention, if implemented through harsh regulations based on speculative worst-case scenarios, could undermine the potential benefits of such an open space for experimentation, such as low-cost remittances and new services for the unbanked. Lastly, as Bitcoin acceptance grows, protocol regulation will most likely emerge "organically." As a result, before considering regulation, it may be prudent to first consider whether market solutions may give a sufficient solution to the aforementioned problems.

2.1.5 Cryptocurrency and Global Cryptocurrencies Propositions and Regulations

The assessments of those discussing the guideline of cryptographic money in the worldwide local area fall on a range between global oversight and reception. Toward one side, the pundits of cryptographic money contend that digital currencies undermine the current monetary request and state security and, in this manner, should be vigorously directed or restricted through a system of worldwide legislatures. The crypto anarchists and cypher punks are on the other limit, and they contend that the innovation envoy inside the cryptographic money development will drive political, monetary, or social upheavals in the state-run administrations of the world. These sentiments are both limits, and by far most of insightful perspectives contend for minor guideline of cryptographic money rather than forbiddance and upheaval. Managing cryptographic money requires a coordination between

global associations to set the base for digital currency guideline for sovereign states. She expresses, "Given Bitcoin's incredible capability of being taken advantage of by monetary hoodlums as well as Dark Web dealers, a peaceful accord ought to be executed⁴⁹."

Additionally, she contends that legislatures should build up least global norms of enlistment that would reduce the namelessness in digital money however give individual countries the sovereign right to expand the guideline of digital currencies as they see fit. According to Piazza, these principles would "render Bitcoin less alluring to both Web and Dark Web crooks"⁴⁹. Digital currencies should be gotten control over universally through the International Monetary Fund (IMF), expressing Bitcoin "represents an inexorably genuine danger to the soundness of the unfamiliar cash trade market and, likewise, global business." He accepts that when digital forms of money like Bitcoin gain overall reception, they can be utilised as a "theoretical assault" on unfamiliar money and undermine nations⁵⁰.

To counter Bitcoin's danger of a speculative assault, Plassaras offers two arrangements. In the first place, the IMF could require part nations to buy and contribute a level of Bitcoins as a feature of every nation's necessary portion, accordingly, permitting the IMF to counter a Bitcoin theoretical assault and balance out individual countries. Second, the IMF could just buy its own inventory of Bitcoins to be put available for later should a speculative assault occur⁵⁰. The IMF's authority excuses the dangers of virtual cash to the worldwide monetary request. In a discourse to the Bank of England, the IMF overseeing chief, Christine Lagarde, states, "for now, virtual monetary forms, for example, Bitcoin present practically no test to the current request of government issued types of money... since they are excessively unpredictable, excessively unsafe, too energy escalated and not yet versatile"⁵¹. Similarly, the IMF's book Digital Revolutions in Public Finance offers a comparative end by excusing the potential weakening impact of digital money reception, recommending that blockchain is an

instrument for nations to intensify their individual abilities of government issued types of money and information tracking⁵².

However, the rise of disseminated record cryptographic forms of money, as Bitcoin, has likewise acquired the consideration of the Bank for International Settlements (BIS). The report on computerised monetary forms delivered by the BIS's Committee on Payments and Market Infrastructures (CPMI) gives a point-by-point examination of likely advantages and disadvantages that advanced conveyed record monetary forms offer as a technique for transaction⁵³. The report likewise gives a rundown of potential administrative activities a state or its national bank can take to control or debilitate cryptographic forms of money, and it investigates a rundown of nations that have applied virtual cash guidelines current to 2015.

Bitcoin was said will not destroy the current Westphalia request whereupon the world economy is constructed yet rather will turn into a challenger and give the banking state [with] some truly necessary contest and discipline constrained upon it. It was clarified that there are three deterrents that Bitcoin, or some other digital currency, should overcome to accomplish the objective of far and wide reception. In the first place, Bitcoin is smothered with the rough history of tricks and criminal behavior, and its value will in general be unstable. Second, the deflationary idea of Bitcoin advances storing overspending, and whenever embraced over the current inflationary monetary framework, it could make another "Economic crisis." Finally, if trusted name-brand companies developed their own direct competitor to Bitcoin with nearly identical benefits, consumers would likely prefer the trusted name-brand companies, resulting in a decrease in Bitcoin usage⁵⁴.

2.1.6 Relative Power, Governance and Blockchain Technologies

Distinguishing whether, just as how, explicit entertainers and cycles are really enabled or undermined by instrumental employments of blockchains is a first commitment IR researchers can make in nuancing banter over the ramifications of these and other rising innovations. As is very much perceived in IR grant, mechanical change seldom helps everybody similarly. Investigations of worldwide advanced partitions remind us, for instance, how a few entertainers stay in obviously better situations for tackling computerised advances like blockchains. Those with stable Internet access and responsibility for or powerful PCs are greatly improved prepared for the 'block-age' than numerous in low-pay networks worldwide where regularly exorbitant access and proprietorship can be clearly past the exigencies of day-by-day endurance⁵².

Perceiving longstanding deviations in the capacity to tackle advances like blockchains is important to move past inescapable consultancy-talk that accepts all-inclusive increases from 'computerised disturbance'. In specifying how blockchains may not by and large be attractive for everybody IR grant can draw on investigations uncovering how advanced innovations have enabled generally frail, just as predominant entertainers in habits both sustaining just as 'upsetting' power relations basic worldwide administration. From one viewpoint, blockchains engage common society associations like causes, individual travelers, and a scope of 'troublesome' new market entertainers, for example, digital currency trades. Then again, blockchains can additionally engage national banks just as a well informed and generally male transnational tip top whose master information and mechanical abilities empower them to practice dynamic power as key 'insiders' in what have all the earmarks of being novel administration processes. For example, a couple 'considerate despots' play played key parts in the 'common conflict' that lighted about whether to change the Bitcoin blockchain to address

the developing build-up of exchange confirmation and settlement. Following deviations in the overall power practiced by certain entertainers over others upgrades comprehension of how blockchains are being utilised in types of worldwide administration with innovation. Investigation of relative increases from mechanical change can then be enhanced through approaches focusing on the social development of innovation⁵⁵.

2.1.6.1 Blockchain Technology and Informal Governance

International Relations researchers can likewise add to the 'opening up' of complicated innovative 'secret elements' by uncovering how the belief systems and thoughts supporting blockchains have the capacity to (re-) comprise the interests and motivations of their clients. Rather than unopinionated, nonpartisan devices that could conceivably impact the overall force of state and non-state entertainers, innovations contain standardising predispositions that generally comprise their clients specifically habits. For example, the PC code fundamental Bitcoin has been viewed as a kind of "techno-Leviathan" situating cryptographic money clients in a Hobbesian "condition of nature, in which the law of might - or the laws of the market - wins". That the first Bitcoin blockchain is unequivocally supported by freedom advocate philosophy has become generally perceived by pundits and advertisers of the cryptographic money the same as establishing clients as specific kinds of "shopper residents". Freedom supporter philosophies supporting further utilisations of blockchain innovations have additionally been displayed to boost their clients to exclusively "go about as levelheaded, self-intrigued, and untrusting specialists"⁵⁵.

Distinguishing such fundamental thoughts and following how they can lead blockchain applications to expand specific sorts of individualistic and industrialist relations rather than fortitude and social exercises is significant for IR researchers to investigate in advancing discussions on an innovation every now and again viewed as basically 'impartial'. How types

of administration by blockchains empowered by the 'meta-force' of rising innovations are thus countered by more customary state-based administration reactions is similarly significant for IR to examine

2.1.7 Authenticity and Formal Governance of Blockchains

International relations can helpfully investigate the significance of linkages between the social authenticity of novel innovation empowered exercises and the rise of formal administration of blockchain applications. The authenticity of casual market-based administration in exercises related with Bitcoin has constantly sabotaged by the persevering powerlessness of either first-class industry associations like the Bitcoin Foundation just as looser types of local area administration to stem hacks, Ponzi plans and interior hardship that subsequent in the parting of Bitcoin Cash from the main digital money in 2017. Nations like China, Russia and South Korea have looked to boycott residents and methodically significant monetary entertainers like banks from managing digital forms of money. Paradoxically, in Anglo-American nations where the advantages of rising innovations will generally be accentuated notwithstanding developing acknowledgment of their dangers, key controllers have set up looser "administrative sandboxes". These loosen up existing public laws to take into consideration controlled and observed investigations with innovation inside and between characterised purviews⁵⁶.

In comparable endeavors to advance as opposed to getting rid of the more genuine employments of innovation, intergovernmental associations like the Financial Action Task Force have tried to energise the utilisation of blockchains in working with help conveyance and settlements, while battling ill-conceived utilises, for example, for illegal tax avoidance. IR researchers are very much situated to explore how differing kinds of info, throughput, and

result authenticity agreed to blockchain applications may on the other hand bring about coercive or more adaptable proper administration⁵⁵.

2.1.7.1` Unblocking an Emergent Research Agenda

With unmistakable exemptions, banter on Bitcoin, digital currencies and more extensive uses of blockchain innovations have would in general be overwhelmed by market analysts and, less significantly, by other social researchers. Bitcoin and Beyond, an as of late distributed altered volume, unites researchers from humanities to social science in a first interdisciplinary work to investigate a scope of worldwide administration gives that have generally been considered in IR. Progressing examination is required, nonetheless, to additionally uncover the cutoff points, movements, covers and interrelationships between contemporary types of administration by, with, and of blockchains. IR researchers are all around situated to draw on experiences from a longstanding and nuanced grant accentuating the eccentric advancement and effects of rising innovations. In proceeding to draw in with innovations as their applications arise, rather than once they become set up in transnational exercises, IR researchers can gainfully add to continuous worldwide strategy discusses while improving both academic and ordinary comprehension of the ramifications of mechanical change for contemporary worldwide administration^{55,57}.

2.1.8 United States Guideline of Cryptocurrencies

To comprehend the choices accessible to sovereign legislatures like the United States to direct cryptographic forms of money, it is advantageous to inspect the writing specifying the assessments of researchers on the legitimate roads the United States may take. This part presents a determination of companion investigated sources adopting different lawful strategies to direct cryptocurrency. Most of researchers who have concentrated on the cryptographic money development since its introduction accept that the flow American

overall set of laws has been delayed adjusting to the quick advanced universe of virtual monetary standards and is poorly ready to arraign criminal behavior including digital currency under the current structure of U.S. laws. Besides, the roads accessible to the United States for controlling or forestalling unlawful digital money use is generally bantered among law researchers.

A vital test for forthcoming controllers is the place where to force requirements. While Bitcoin presently seems, by all accounts, to be dependent upon administrative oversight, the power of controllers faces specific cutoff points⁵⁸. For example, numerous researchers highlight the trouble of controlling Bitcoin inside the United States without forcing on residents' freedoms to protection or unlawful pursuits and seizures. One proposition to battle the unlawful utilisation of digital money is to grow the lawful ability of law requirement organisations to research illegal digital currency use. Alice Huang contends that the current government criminal summon principles are unprepared to indict the illegal employments of digital money, and she proposes improving the U.S. legal ability to "make another criminal summon standard, displayed from current e-revelation laws, that objectives criminal Bitcoin use." She likewise contends that the current summon process requires the public authority to "go through huge number of exchanges and countless client accounts to pinpoint explicit targets." Finally, she expresses that expanding the summon powers could become dangerous on the grounds that the new laws could encroach upon clients who might need to keep up with the obscurity and should hence be painstakingly created to forestall legislative overstep⁵⁹.

Essentially, Danton Bryans centers on the collaboration among Bitcoin and hostile to tax evasion (AML) laws, expressing, "Bitcoin addresses a troublesome monetary innovation that numerous AML and cash transmitter resolutions are poorly ready to manage." Although Bryans states, "Bitcoin may be viewed as illicit on the grounds that it endeavors to accept

controls explicitly held to the central government under the U.S. Constitution," he accepts that arising digital currencies should keep on existing unrestricted to its users⁶⁰. Bryans rather contends that the best strategy for guideline is the guideline of the fiat-to-digital money trades, since trades as of now fall under existing cash transmitter laws and require trade clients to recognise themselves when they register and use exchanges.

The guideline of crypto trades would be "the least complex and probably highway. Bitcoins are not unlawful however work in a legitimate hazy situation where no U.S. law presently on the books expressly applies to Bitcoin⁶¹. Due to the global materialness of involving Bitcoin as cash, he accepts that Bitcoin will keep on becoming except if the world states move to manage digital currency; nonetheless, the author advises against an altogether outside limitation on cryptographic forms of money. Turpin rather offers that the "most shrewd methodology that legislatures may take to Bitcoin is to endeavor to control the exchanges that occur in Bitcoin (BTC), rather than the actual framework," contending that a strategy for guideline within the blockchain would be undeniably more viable than outer regulation⁶¹.

A state could carry out to direct Bitcoin-like digital currencies, which join an apparent public ledger. Marian's reasonable system takes advantage of the cryptographic forms of money's public record wherein each verifiable exchange is ordered for the purpose of following licit and illegal digital currency exchanges. The author contends that assuming the public authority were to institute an "elective obscurity charge" that authorises high expenses on shippers who execute in cryptographic money with obscure clients however offers charge alleviation to exchanges with preidentified clients, cryptographic money clients would be boosted to enlist their identity⁶².

Therefore, clients who have been checked for the assessment help would uncover their character through the most common way of partner a name to their computerised wallet,

furnishing the organisations and administrative bodies with a background marked by all exchanges to and from that client. Marian's proposed framework enjoys the one of a kind benefit of allowing unknown clients to keep on utilising digital currency to execute under guideline at the punishment of an extra monetary expense forced by the commercial center. He contends that honest residents will have no compelling reason to hide their character, and when these residents are given the monetary advantages of enrollment, they will enlist as a group, making the whole digital money network less mysterious while featuring illegal transactions. Marian finishes up, "under such a system, real clients [will] latently take an interest in administrative endeavors to forestall unlawful conduct"⁶².

2.1.9 Chances, and Lawful Status of Bitcoin in Asia

Business visionaries in the nation consider this to be a characteristic chance for Bitcoin and other digital currencies to spread the nation over. As indicated by reports, India by and by has approximately 30,000 Bitcoin proprietors, with the number projected to rise. For clients, there is an installment framework that doesn't expect them to submit individual data. For advertisers, it's a strategy to save exchange costs; for wanderers, it's an opportunity to send settlements for free⁶³.

The lawful status of Bitcoin and practically identical crypto instruments change altogether from one country to another, and as a rule is at present hazy or developing. While most of nations don't restrict the utilisation of Bitcoin, its situation as currency (or an item) shifts, bringing about various administrative consequences. A few states have formally allowed its use and exchange, while others have by and large precluded or restricted it. Moreover, Bitcoins have been sorted contrastingly by different government offices, divisions, and courts⁶⁴. Nonetheless, Bitcoin is legitimate in India, Canada, Jordan, Vietnam, and Thailand, yet banking is denied. The State Bank of Vietnam has proclaimed that the issuance, supply,

and utilisation of Bitcoin and other comparative virtual monetary standards is unlawful as a type of installment and is deserving of fines going from 150 million to 200 million VND; notwithstanding, the public authority doesn't preclude Bitcoin exchanging as a type of virtual merchandise or resources.

Bitcoins have been accessible in India starting around 2012 at the point when it was first presented. In his financial plan proclamation on February 1, 2018, Finance Minister Arun Jaitley showed that the public authority will do all that could be within reach to forestall the utilisation of Bitcoin and other virtual monetary forms for illicit purposes in India⁴⁶. He reaffirmed that India doesn't remember them as lawful money and that blockchain innovation will be empowered in installment frameworks all things being equal. Individuals who utilise these types of monetary standards should practice alert, as indicated by the Indian government, since they have no legitimate security. Individuals won't get any help from the public authority assuming they are survivors of fraud⁴⁴.

2.1.10 Cryptocurrency Development in Nigeria

Nigerians' experiences with numerous Ponzi scams have led the Nigerian authorities to be wary of cryptocurrencies, which is thought to be a Ponzi scheme. A Ponzi scheme is a deceptive investment strategy that promises high rates of return with no risk to investors. The system produces rewards for early investors from new investor investments, making it fraudulent. In Nigeria, Bitcoin adoption was prompted by the 2016 financial crisis, which hindered international trade due to a lack of foreign currency. The fact that Bitcoin is immune to financial crises and serves as a fantastic means of trade during these times is a common aspect in its acceptance by both Nigerian and American citizens⁶⁵.

The implication of this tendency is that, while currencies are vulnerable to government intervention, Bitcoin does not. As a result, during periods of financial instability, Bitcoin

becomes more viable in the country. In Nigeria, Bitcoin largely acts as an alternate investment possibility unaffected by economic pressures or uncertainty Vanguard News Paper (March 28, 2018). It has attractive potentials and offer a great return on investment to investors. In 2017, the federal government of Nigeria made official release twice, intimidating citizens about its non-readiness to support the use of Bitcoin and warning individuals, corporate bodies and banks not to get involved in Bitcoin transactions because it cannot be controlled by government. It's illegal because of the anonymity nature of the currency, it can be used in financing money laundering and terrorist activities and the possibility of a sudden crash. This warning became imperative because of the devastating effects of the various ponzi schemes in Nigeria which suddenly collapsed towards the end of year 2016 up to the first quarter of 2017 in which case, many Nigerians lost their fortunes⁶⁶.

2.1.10.1 Regulation of Cryptocurrency in Nigeria

Though many Nigerian individuals have invested in cryptocurrencies in the hopes of reaping enormous profits in the future, its future is uncertain. The Nigerian government, through the Central Bank of Nigeria and the Securities and Exchange Commission, has issued a series of warnings to its citizens about the risks of investing in the cryptocurrency market or virtual money that are not insured by the government^{67,68}. The essence of the state as the final authority rests not only on the ability to enact laws or issue money, but also on the government's ability to control such money, to serve as the last resort, and to preserve the currency's stability and validity. The government's adoption of cryptocurrencies as a medium of trade would contradict the Chartalism monetary theory of money, which states that money is referred to as legal tender since it is created by the government (Salawu & Moloji). In a nutshell, the state determines what to accept and what not to accept as a medium of exchange.

Therefore, the power to either legislate the use of cryptocurrency by the citizens of any country resides with the state (government).

As a result, the Nigerian government reiterates that cryptocurrencies are not legal cash in Nigeria, and any bank or institution that engages in such transactions does so at its own risk. The government's warning also underlined the risk of engaging in such an uncontrolled and turbulent industry. According to the Nigeria Cybercrime (Prohibition and Prevention) Act 2015, all financial institutions, including fintech firms, must verify the identity of customers involved in electronic transactions, integrate and implement, know your customers, process, and keep all subscribers' data safe for at least two years. The CBN consumer protection framework also mandates all financial institutions licenced by the CBN to comply with fintech laws, maintain enough consumer data, and adopt safeguards to prevent unauthorised disclosure of such data. The use of cryptocurrencies extends beyond consumer data protection and into the world of untraceable data. This is why the Nigerian government has declared unequivocally that any citizen who invests in such currency does so at their own risk in the case of a loss.

2.1.10.2 Cryptocurrency and Nigeria Economy

The development of Bitcoin as a cybernetic money has triggered repercussions in the world economy, including in Nigeria. There have been several discussions about the benefits and drawbacks of cryptocurrencies to the Nigerian economy. However, the Nigerian government has attempted to restrict cryptocurrencies through its governing bodies such as the Central Bank of Nigeria and the Securities and Exchange Commission. However, its legal status remains uncertain, in contrast to nations such as Morocco and Algeria, where there is an express prohibition on trade in Bitcoins, with high fines for violations³⁸. The warnings are primarily intended to educate citizens about the distinction between actual state-issued and

guaranteed currencies and cryptocurrencies, which are not. Following the actions of the Central Bank of Nigeria and the Securities and Exchange Commission, lawmakers have urged the regulatory authorities to expedite efforts to present a legal framework for cryptocurrencies in Nigeria⁶⁹.

Monetary Policy: Presently, cryptocurrencies coexist with traditional currencies. Current quantities are minimal and do not threaten the dominance of official money as the primary currency. However, as algorithms develop to limit the volatility of cryptocurrencies, their popularity and use grow. This would result in the currency coexisting with other official currencies. The essential concern here is whether the central bank will lose control over the economy as a result. The relationship between cryptocurrencies and central bank monetary policy is discussed in depth⁷⁰. Their theoretical model indicates that the cohabitation of central bank and private money is contingent on the latter's monetary policy. Privately created currencies, in instance, would be used if official currencies failed to achieve price stability, but would lose significance as a medium of exchange if the central bank legitimately guaranteed the true worth of money balances. The consequences are twofold⁷¹.

First, the cohabitation of government money and cryptocurrencies valued as media of exchange is not an impossibility in theory. Second, central banks have the benefit of preventing cryptocurrencies from being valued as a medium of exchange by implementing a certain sort of monetary policy (but they could still be valued for other reasons, for instance as a pure speculative asset). From this vantage point, rather than constituting a threat, the coexistence of government money and cryptocurrencies can be beneficial by acting as a deterrent to central banks. Currency competition has the potential to reduce inflation and prevent the kind of interest rate and price manipulation that governments have historically been prone to.

Fiscal Policy: Asymmetric relationships can exist between cryptocurrencies and fiscal policy. In an economy with an underdeveloped financial market, cryptocurrency activity may be difficult to regulate and, as such, may provide a platform for investors, both individuals and corporate bodies, to evade tax, resulting in low-income generation for the government relative to the level of market activity, which may affect the government's budgetary plans. This circumstance may impede the government's fiscal aims, consequently impacting fiscal macroeconomic objectives. Furthermore, in an economy with a highly developed financial sector, the correct coordination of bitcoin could result in an increase in income production through taxation, which would improve government budgetary projections. This condition may serve to improve the government's fiscal aims, consequently improving fiscal macroeconomic objectives and stabilising the economy⁶⁹.

Agricultural Sector: Farmers have always been early users of efficient, high-value technologies. Blockchain technology has the ability to tackle huge agricultural challenges. Connecting blockchain technology to viable business models and compelling use cases is the issue for blockchain and Agtech in general. Blockchains offer enormous potential to generate and improve access to finance in the agriculture sector, addressing the issue of food scarcity and improving food security⁷².

Education Sector: Finally, the intricacy of bitcoin as a virtual money, along with technical jargon and the necessity for digital education, amplifies cryptocurrency's impact on education. As a result, the entire concept of virtual currency may appear overly unclear. Education, on the other hand, has the potential to bridge the gap and increase cryptocurrency acceptance. As a result, bitcoin and education might be considered "Siamese Twins," as their connectivity and interdependence can assist contribute to accomplishing the goal of financial inclusion, hence driving the economic growth path forward⁷³.

12.1.10.3 Economic Importance of legislating Cryptocurrency (Bitcoin) in Nigeria

The followings are the economic importance of trading Bitcoin and some other form of cryptocurrencies in Nigeria⁶⁵:

Huge Return: There is a promise of huge return on the investment which would be used to carry out some developmental activities by the investors thereby leading to growth and development of the country.

Increase Tax Base: Many countries that accept the use of cryptocurrency, does that because of the tax benefit to be derived. So Nigeria can tap into that and increase her income from tax which could be used in providing infrastructures.

Elimination of Corruption: Corruption has been one of the main epidemic that affects the development of the Nigeria's economy. According to the Transparency International ranking on corruption as at January 2020 Nigeria ranked 146th out of 180 countries globally in terms of reduction in corruption. It was even ranked as the fourth most corrupt country in West African. The blockchain technology of crypto-currency can be applied in reducing some of this related issues leading to corruption such as developing budget-tracking mechanism to track all government income and expenses. The blockchain application mechanism will save all transactions both income and expenditures and everyone in the network would be alerted at every interval and updates. The transaction time, amount involved, the recipient, the endorser and account number would all be under public scrutiny.

Alternative Financial Structures: It would relieve Nigerians of the stress involved with having access to banking because banks are not located in many rural areas where majority of Nigerians are residing. Therefore, this mobile money that does not require any physical

branch would be very useful to such Nigerians. In other words, it would tackle the inefficiencies of the existing financial/banking system.

Access to Financial Service: One of the main features of the financial inclusion of government is to provide financial products that would help Nigerians to invest, save, obtain an insurance etc. The cryptocurrency through the use of blockchain can help Nigerians have access to the various financial products irrespective of their location. Since most Nigerians still remain in the rural sectors and access to banks is still a major challenge mobile transaction would help in solving this problem. Access to adequate financial service is an important element for the reduction of poverty and improving development in any economy. Mobile money has helped many countries in achieving their goal of access to financial service to the citizens.

Reduction in Cost of Banking: The uses of blockchain or mobile money would save the rural dwellers a lot in terms of banking charges, telecommunication charges and cost of transporting to where the banks are located. Because banks are not located in all the rural areas within the country. However, total adoption can only be achieved with integration into already existing financial models and favorable Government policies.

Access to credit facilities by SMEs: BOFI (Banks & other Financial Institutions) and credit bureaus which are established to grant credit facilities to SMEs are reluctant in granting loan to them because of lack of adequate data base to obtain information about the SMEs. Two bills were signed into laws in 2017 such as the Collateral Reporting Act and Credit Reporting Act to ease access to credit by SMEs. The Blockchain Technology can be used to implement these laws where different financial institutes could save information about the financial status of their clients through the authorisation of customers to access their data, the customer's financial situation and the risk of the credit can be monitored properly⁷⁴.

Harmonised Data Base: The blockchain technology which is the safeguard for the Cryptocurrency activities can be used in creating ledger accounts for every citizen with a provision for amendment and management. Nigeria is known for lack of harmonised or centralised data base for its citizens. This has affected so many issues in terms of planning, making provision for infrastructures, determining unemployment rate, monitoring adequate rate of development etc. This issue can be resolved with the aid of the blockchain technology of Cryptocurrency.

Improving Electoral System: The country since the inception of democracy have been seeking for ways of improving its electoral system that would lead to a free and fair election that could be accepted and bring confidence to its citizens. The blockchain technology can be used to achieve that.

Reduction in the cost of Printing Money by Government: Legalising the use of cryptocurrency as a medium of exchange will lead to the reduction of the cost of printing money and maintenance cost. It would also reduce other expenses that are incurred by government such as storage of notes, transportation of the notes to distant places, security of the notes and devices for the detection of counterfeit notes, etc.

2.1.11 An Overview of eNaira

The Central Bank of Nigeria urged banks and other financial institutions on February 5, 2021, to avoid from dealing with cryptocurrency (a digital currency) and enabling payment for cryptocurrency trades. President Muhammadu Buhari presented the eNaira at State House on Monday, October 25, 2021. In his address, he stated that it will enhance remittances, promote cross-border trade, expand financial inclusion, and allow the government to more conveniently deliver welfare payments.

Surprisingly, on June 24, 2021, the CBN introduced "Initiative Giant," a project to create and issue a government-controlled digital currency in Nigeria branded as "eNaira." On August 27, 2021, the CBN distributed to licenced Financial Institutions ("FI") a presentation outlining criteria for the issuing and operation of eNaira in Nigeria.

2.1.11.1 eNaira: A Cryptocurrency?

The eNaira is an electronic equivalent of the local paper naira currency issued by the Central Bank of Nigeria. It is not designed to replace cash, but rather to serve as a secure and efficient alternative method of payment. That is, a Nigerian government-issued digital money having the same value as fiat naira (i.e. physical naira notes). It will be purchased by the general public through FI and transferred into users' e-wallets. It is comparable to the digital renminbi of China and the ECC-krona of Sweden⁷⁵.

Cryptocurrency is a decentralised kind of encrypted digital currency based on blockchain technology, whereas eNaira is a government-controlled digital currency whose value is expected to be at parity with the country's official currency.

2.1.11.2 Operation and Benefits of eNaira

Bank branches have closed across the country as a result of the pandemic, and those that have reopened are mostly in urban areas. This has further isolated Nigerians living in distant communities who do not have bank accounts from the financial system. One of the primary goals of digital currency is to increase inclusivity. Its goal is to bring millions of unbanked Nigerians into the financial system. In 2020, around 58 million adult Nigerians remained unbanked. 35 million of these people own mobile phones and might be reached via mobile money.

Another advantage for the government is that digital currency is likely to cut the high cost of printing physical currency, which amounted to N307 billion (747 million) between 2014 and 2019, according to a CBN report⁷⁶. In contrast to digital banking, which includes customers transacting with money held in a bank, eNaira is actual money earned and held by customers in their e-wallets. As a result, clients will be able to use it like fiat cash without the need for intermediaries, as is the case with digital banking. The elimination of intermediaries is expected to minimise transaction costs and time. Additionally, cross-border transactions are projected to become simpler. It also allows unbanked Nigerians to transact in eNaira without having a private bank account⁷⁵.

To use eNaira, one must first create an eNaira wallet, which is a digital storage system powered by blockchain technology. During the initial launch, only the government's Speed Wallet will be available, while financial institutions will be able to construct their own versions afterwards. To create an eNaira wallet on a smartphone, customers must first download the eNaira app from the Google Play Store or the Apple Store and then register. Users using feature phones can use USSD codes and then follow the registration steps. Users will be able to transfer money to the eNaira wallet from bank accounts or credit cards, as well as send and receive payments in the digital currency, after it has been formed.

To quote anonymous sources close to the launch, the true explanation was that traffic to the new currency's official platform, which went live on September 27, was ten times higher than expected. As a result, the CBN "decided to delay the launch in order to review and retest the resilience, safety, scalability, and security of the eNaira system."

On September 30, Nigeria's Federal High Court heard a legal challenge to the launch based on trademark infringement brought by eNaira Payment Solutions Limited. The presiding court determined that the launch should proceed in the national interest and on the

assumption that the plaintiff would be suitably compensated, but he did not dismiss the case, which was adjourned.

2.2 Theoretical Framework

2.2.1 Liberalism

From the liberalist viewpoint, blockchain technology is valuable and innovative in the goal of better global government because it promotes elements like as diplomacy, transparency, security, and efficiency while decreasing aspects such as corruption and loss of identity⁷⁷.

Blockchain should be utilised to promote openness and efficiency, as well as to shed light on issues like as corruption and boost diplomacy. According to countless terrible statistics on governmental misconduct, blockchain technology is the solution to a dignified reversal in corruption⁷⁸. The author goes on to claim that we no longer need to rely on financial institutions, which may or may not be corrupt themselves, to carry out transactions⁷⁸. Because blockchain technology is incredibly secure and transparent owing to the fact that anyone may view the information and the information is forever kept. Because information can only be updated and not wiped, even if a government or corporate player wanted to delete the transaction, they would be unable to do so, putting an end to corruption and improving governance and globalisation⁷⁸.

Corruption is a major issue in international society, particularly among governments, and blockchain technology offers a remedy. Corruption is illegal in all nations, developed and developing, but government employees are soothed by the notion that they will not be caught and that they feel no one is monitoring or that their superiors are equally corrupt⁷⁹. If a bribe is offered, it is only visible to the receiver and giver⁷⁹. The author contends that the only way to stop it is to remove the comfort by making these transactions more transparent, which is

one of the benefits of blockchain technology in that it makes all transactions accessible and so holds people accountable⁷⁹.

This theory is adopted in this study in the Nigeria case looking at the ban on Cryptocurrency by the State Government, in a globalised world where corruption is endemic, the Liberalist believes that through the use of various blockchain technologies like Paxful wallet, Binance, Trust wallet and other available wallet, corrupt activities could easily be traced and found out. The mere fact that individuals now need to verify their wallet either by their NIN or Voter registration numbers make trade traceable if there are cases of mismanagement of fund or other shady acts. While creating economic independence and relief for those that are into it in Nigeria, blockchain wallet has gotten good and secured security architecture and has made it difficult for anyone to hack from the backdoor.

2.2.2 Realism

According to the realist viewpoint, blockchain technology is disruptive and detrimental to the state and state power. They regard the state as the most significant actor, and this reality calls into question the state's authority over its economy and policy. Despite the fact that it also assists the state in preventing documents from being deleted or misused, which can wind up costing states more money. Realists say that because of the anonymity on the cryptocurrency side of blockchain, it enables for the sponsorship of illicit conduct, which is a threat to the state⁷⁷.

Digital technology is a disruptive force that threatens the hierarchy and power of states. He also claims that it threatens state power by allowing states to manage and use digital technology in order to strengthen state power⁸⁰. Bitcoin and other electronic currencies It also threatens state control of the economy and is a new form of civil disobedience.

As a libertarian fantasy, the goal is to eliminate government control over the economy as well as the production and circulation of money through central banks. Bitcoin, by depending on technology, provides a way for governance without governments. Bitcoin has the capacity to bypass most state-backed institutions. Another governance issue that is being addressed technically is anonymity. The state is thought to be very important, and blockchain technology may reduce the state's influence⁸¹. Despite the fact that revolutionary technology such as blockchain is considered as a potent force capable of reshaping established concepts and conventions by intensifying regularised patterns of behaviour⁸². Thus, giving the state more power and governance within the international society⁸².

The state uses the darknet, sometimes known as the "crypto market," to demonstrate that states are impotent to prohibit and control the numerous crimes that are enabled there (Owen, 2016). Cryptocurrencies will mostly be utilised for criminal transactions and narcotics, posing issues for the government (Paul Krugman). However, what these professors forget to acknowledge are the benefits of blockchain, as well as the reality that many people who have attempted to conduct criminal transactions with Bitcoin have already been discovered.

They also neglect to highlight that many of the illicit acts that they predict Bitcoin and other cryptocurrencies would be used for, such as supporting terrorism, narcotics, and trafficking, already exist using cash and offshore banking, both of which are sanctioned by governments. Transparency International has also argued that, while digital currencies can be used to facilitate cross-border crime, the fact that they are meticulously recorded, accepted as a legitimate investment, and transactions are easier to track than other forms of currency prevents them from being a facilitator of such crimes⁸³. This then contradicts one of the factors that the realist perspective uses to oppose blockchain technology.

In relating this to Nigeria, this theory is adopted in this study in the Nigeria case looking at the ban on cryptocurrency by the State Government, traders in the country still find means to transact with each other and this has undermined the legitimate use of force by the Federal Government which is one of the most indispensable feature of State. Also, in the Nigeria contest, those that engage in cyber scam now result into cryptocurrency as a mere charade and cover up. In fact, terrorist organisations receive funding via Cryptocurrency making the country vulnerable to attack.

2.2.3 Constructivism

Constructivism subsequently develops and expands how blockchain technology influences diverse political players and the norms that govern them. Because blockchain technology is a relatively new discovery, particularly in the field of IR constructivism is required to broaden the field's restricted view as well as to address from a social perspective^{77,84}.

Despite criticism from all international actors, blockchain has evoked many responses from a diverse range of international relations actors and industry regulators, and it is being mobilised to support a diverse range of governance activities. Blockchain technology, according to these authors, has piqued the imagination of both the utopian and the dystopian⁸⁵.

While the liberal approach puts emphasis on how the international regime benefits common interests⁸⁵. The realist approach uses regimes to advance the interest of the most powerful hegemonic state⁸⁵. Finally, the constructivist uses regimes to influences all actors' interests⁸⁵. Campbell-Verduyn states that the interaction of technologies with both States and non-state actors influences the character of international regimes⁸⁵.

A government's approach to technology typically shapes or constrains the progress of that technology and its applicability to both state and non-state entities⁸⁵. The author expands on

the two characteristics of blockchain technology that impact the responses of intergovernmental organisations: its decentralisation and 'quasi-anonymity.'

Furthermore, He argues that blockchain technology will either: continue to exist in a "grey region"; if left alone, the shortcomings of Bitcoin may not only demolish the entire cryptocurrency application but will also impact societal stability and ruin the larger public good; or when more regulatory restrictions are imposed that cannot be supported, the innovation potential is stifled⁸⁵. He argues that when states were confronted with this dilemma and have now decided to act differently towards blockchain⁸⁵.

As it applies to Nigeria vis-a-vis cryptocurrency ban, crypto for those individuals who aren't into cyber scamming has created economic prosperity and reduce restiveness of Nigeria youths. In a country where we have loads of unemployed folks, it's apposite to understand that people now result into crypto trading. This has however created a new face in today Nigeria. In fact, Crypto has change the face of the current financial architecture where Individuals now has millions of Naira stockpiled on their blockchain wallet without necessarily going to banks or carrying cash around. The current digital economy ways of operating has nearly made it impossible for the government to have a full enforcement of ban in cryptocurrency since it appears not to have no single central authority to either trace the users or control it.

2.3 Review of Empirical Studies

2.3.1 Cryptocurrencies and the Nigeria Economy

A study on the legal and financial implication of adopting cryptocurrency in Nigeria. The study acknowledged that cryptocurrency as a digital finance innovation enabled by Blockchain technology, is altering payment methods and the function of money in the present financial environment. Bitcoin, the most prominent cryptocurrency, has gone through numerous names, including digital currency, digital cash, virtual currency, electronic currency, and cryptocurrency. Bitcoin was widely assumed to be the creation of an anonymous inventor with the pseudonymous moniker Nakamoto. However, before the release of Nakamoto's white paper in 2008, there had been earlier proposals by other writers regarding the efficient role that the market could play in the creation and control of money rather than leaving it in the hands of the government and the banking system. Regardless of the regulatory issues offered by Bitcoin technology, it has legitimate uses, Crypto enhances financial inclusion; it makes international remittances cheaper and faster; and it facilitates international trade, particularly at the micro-level. The financial consequences have been discovered to include an absence of central authority, tax evasion, terrorism financing, money laundering, and cyber blackmail. Following several fraud incidents and reviews, the Central Bank of Nigeria (CBN) declared on February 5, 2021, through banks and other financial institutions, that dealing in cryptocurrency and enabling its exchange is illegal. This was ostensibly done to safeguard the integrity of the Nigerian financial system⁸⁶.

A study on opportunity and risks of digital currencies in Nigeria was conducted. As highlighted in this study, Nigeria is the first African country to create a central bank digital currency (CBDC), sometimes referred to as a fiat digital currency. The eNaira CBDC was created as a money substitute to be used with paper Naira. This paper examines the

characteristics, prospects, and hazards of Nigeria's central bank digital currency (CBDC), also known as the eNaira. CBDC offers Nigeria opportunities such as improved monetary policy transmission, convenience, efficient payments, increased financial inclusion, and higher remittance inflows. Digital illiteracy, an increasing proclivity for cyber-attacks, data theft, and the shifting role of banks in a full-fledged CBDC economy are among the cited dangers⁸⁷.

A study on the lessons for development from Digital currency and financial inclusion in Nigeria was assessed. The study's objective was to conduct an empirical investigation on the impact of digital currency development (digital finance) on financial inclusion in Nigeria over time. Nigeria embarked on the development of digital currencies in order to reap the benefits of financial inclusion, safer remittances, and exchange rate regularisation, among other things. In a weighted stepwise forward regression, the researchers created high-frequency quarterly data from 2006:1 through 2020:4. With few modifications, a model similar to that employed by Demir et al. (2020) and Altunbas and Thornton (2019) was built. According to the findings, (1) a unit increase in the use of automated teller machines by citizens spontaneously increased financial inclusion in a quarter in Nigeria by 0.012 units and was statistically significant; (2) a percentage increase in the use of point of sale transactions by citizens in the country also increased financial inclusion in Nigeria by approximately 1%; and (3) a percentage increase in mobile payment users in Nigeria will spontaneously increase financial inclusion by a quarter in Nigeria. Using in-sample forecasting, the researchers show that while financial inclusion will increase in Nigeria, it will not be without systemic variations. Based on the findings, it is predicted that if the country's current digital currency adoption is maintained at the current rate of growth, the country will be more financially inclusive by 2% by 2025 and 4% by 2030. Initially, it was discovered that the emergence of

digital currencies is a positive derivative for financial inclusion in Nigeria. In Nigeria, the cumulative effect of digital finance on financial inclusion is around 7% positive⁸⁸.

A study investigated the effects of cryptocurrency on the performance of the Nigerian economy. The specific objective was to investigate the impact of cryptocurrency trading, as well as monetary and monetary corrupt activities, on Nigerian economic performance. The study collected primary data from 98 copies of the questionnaire. The data was analysed using the Tobit regression approach. The findings show that cryptocurrencies and monetary and monetary corrupt practises have a negative but substantial effect on Nigerian economic performance, with marginal effects of -0,172 and -0,734 with P 0.05. The study suggests that cryptocurrency and monetary corruption have an impact on Nigerian economic performance. According to the findings, the government should regulate and oversee cryptocurrency trade through the Central Bank of Nigeria (CBN) using global digital financial system software. The software will monitor and control cryptocurrency trading in Nigeria in order to improve cryptocurrency trading and contribute to and expand Nigerian economic activity⁸⁹.

A study on the effects and implication of cryptocurrency ban in Nigerian economy was examined. The objective of this study was to find out what Nigerians and cryptocurrency traders thought about the impacts and ramifications of a cryptocurrency prohibition in the Nigerian economy. The survey study design and random sample approach were utilised by the researcher. The study's sample size was 400 people taken from a community of 4000 people, including crypto dealers, bankers, bank customers, university personnel, students, and the general public. The information was gathered using structured questionnaires and analysed using the mean score average. The researcher discovered, among other things, that the abrupt ban on cryptocurrency trading and transactions has deeply shaken the Nigerian crypto market, causing emotional shock and trauma to crypto traders, and preventing traders

from purchasing crypto currencies with credit or debit cards issued by Nigerian banks. The consequences of this include, among other things, the fact that the prohibition may make it difficult for people to hold crypto currencies because they cannot acquire or sell them. It may result in constant depreciation of the Naira and loss of money by Nigerians, resulting in major unemployment, destitution, and hunger among the unemployed youngsters who rely on cryptocurrencies as a source of income. The researcher thus recommends, among other things, that the government, the security and exchange commission, and other stakeholders act quickly to consider the potentially far-reaching consequences of Nigeria's central bank's stance on cryptocurrency. The federal government, through the Central Bank of Nigeria, can control the crypto industry by taxing cash created by withdrawing deposits or exchanger earnings and requiring investors to register with their BVN and National identity numbers. These will allow any fraudster or perpetrator to be apprehended. Finally, Nigeria might use cryptocurrency trading to generate cash for economic growth and development⁷.

A sought to examine the effect of cryptocurrency on the Nigerian economy. The research was based on social exchange theory. Secondary data were acquired from the CBN statistical bulletin and the Global Financial Integrity Report from 2013 to 2018. A basic regression model was used to analyse the data. The result shows that R is 5.8%, indicating that there is a weak positive link between bitcoin and Nigeria's level of economic development. It also reveals an adjusted R square of -24.6, indicating that cryptocurrency has a minimal inverse influence on Nigeria's degree of economic development. In conclusion, the computed p-value of 0.913, which is more than the given p-value of 0.05, indicates that cryptocurrency has no meaningful effect on Nigeria's degree of economic development. As a result, it is advised that, in order to sustain economic development from cryptocurrency activities in Nigeria, the Central Bank of Nigeria guarantee that regulations and mechanisms are put in place to appropriately capture cryptocurrency activity in the country⁹⁰.

A study was designed to examine the effects of legalising the use of crypto-currency as a medium of exchange on the Nigerian economy. The primary and secondary data collection approaches were used to carry out this research. Questionnaires were distributed to public and private management of financial institutions and businesses to collect pertinent data. The information was analysed using tables and percentages, the Pearson product moment correlation coefficient was used to examine the relationship between the variables, and the Z-test was utilised to test the hypothesis. The study discovered, among other things, that there are risks and benefits to using cryptocurrency, and that using cryptocurrency will help to economic growth. It is therefore recommended that the government review her regulatory framework for legalising crypto-currency, as well as ensure that relevant government agencies are proactive regarding crypto-currency by building the necessary regulatory architectures around the new financial technology, so that Nigeria and Nigerians are not left out of this intriguing shift in monetary paradigm⁶⁵.

A study was undertaken to ascertain the effect of cryptocurrencies on the Nigeria Economy. The study also investigated the advantages of cryptocurrency in Nigeria. The study demonstrates that blockchain technology has benefits that extend beyond the banking sector (a protected assemblage of essential data and information, such as scientific bills, health records, vote records, etc.). Respondents provided quantitative data via the administration of a standardised questionnaire. The findings found that the use of cryptocurrencies such as Bitcoin and Ethereum in online transactions is on the rise and is virtually universally accepted. According to the study, a large percentage of people are now totally convinced that the digital currency Bitcoin is real, safe, and valuable⁷¹.

A study was conducted on cryptocurrencies in Nigeria. The conversation of cryptocurrency, which has arisen as a subcategory of alternative currencies to fiat currencies. They differ

significantly from traditional currencies as well as digital payment services or mediums in that they represent money in digital form. Since its formal introduction in 2009 with the introduction of Bitcoin (the first and most basic cryptocurrency), this genus of currency has grown in strength, with over a thousand distinct forms of cryptocurrencies currently available worldwide. Despite the increasing popularity of cryptocurrencies, their acceptance and legal status differs greatly among jurisdictions. While some countries have plainly approved their usage and commerce, others have restricted or outright prohibited them. Others, on the other hand, have yet to fully define their attitude toward them. Even among countries that have taken a stance on cryptocurrencies, the nature of their cryptocurrency classifications varies. These difficulties, combined with fears about an unregulated global economy linked to cryptocurrencies, have made cryptocurrencies more relevant than ever. Against this backdrop, this study tries to examine the growth of cryptocurrencies in commerce and investment in Nigeria, as well as its legal consequences. To that purpose, this study will first define and enlarge on what cryptocurrencies are, including their many varieties, functions, and differences from traditional money systems. Following that, we would investigate cryptocurrencies as currency or money, followed by an examination of current Nigerian currency legislation to determine whether and to what degree cryptocurrencies are or may be accommodated within current Nigerian law. We would then investigate Nigerian regulators' reactions to the advent of cryptocurrencies in Nigeria, as well as the reception and treatment of cryptocurrencies in various national jurisdictions. This paper claims that, in the end, more needs to be done at the international level to solve the issues created by this astounding invention, as local solutions may not sufficient¹⁸.

In Nigeria, a similar study looked into digital currency. According to the study, developments in the global digital ecosystem are ongoing. The use of digital devices is already widespread. At first look, the cascading impacts of digitalisation appear to have crystallised on the form of

money that we are all familiar with. The arrival of Bitcoin on the global financial market demonstrates the validity of the current argument. As national central banks throughout the world mull the possibility of releasing digital currency, all hands must be on deck and information must be brought to the fore. The development and regulation of a digital currency ecosystem is an undiscovered territory that is not even guarded by the constellation of stars within the galaxy. The Central Bank of Nigeria must lead the race within the ecosystem to drive the frontiers of digital currency innovation. This paper suggests three names for digital money as well as a regulatory roadmap for digital currency while outlining the opportunities and limitations in Nigeria⁹¹.

A study on cryptocurrency as a legal framework was examined. The study noted that the recent transformation in the money sector cannot be separated from the introduction of cryptocurrencies, which has facilitated cross-border trading operations. It is enthralling the world even more and has made a couple millionaires. This emerging technology, namely bitcoin, has huge prospects for innovation and expansion, but it is also riddled with bottlenecks that favour illegitimate and unlawful activities. There is an urgent need for a conceptual legal framework for the regulation and control of cryptocurrencies such as Bitcoin in order for it to serve effectively and efficiently as a world currency as opposed to national currencies, which are governed by various laws in various jurisdictions around the world. The notion is to build an international framework in charge of controlling the flow of a worldwide virtual monetary system and unit of exchange. It is planned that under the framework, there will be legislation providing for broker/intermediary, registration/licensing, and a fine for unauthorised currency brokerage. There is a need for cryptocurrency user registration, as well as laws for cryptocurrency purchase and transfer, as well as taxation of cryptocurrency transactions. The rise of Bitcoin has created a completely new dilemma for authorities tasked

with preventing criminality. This necessitates an analysis of the effects of bitcoin on cybercrime prevention while also attempting to suggest potential remedies⁹².

A study on the prospects and problems of cryptocurrency. As noted by the authors, many countries throughout the world are already reaping the benefits of digital banking, such as low transaction costs, high speed, and efficiency in payments, particularly in international transactions for individuals and corporations. However, despite the great promises made by this innovation, there are risks inherent in it, such as money laundering, terrorist financing, and tax evasion. To meet the study's objectives, a grounded theory research design was used. The main argument advanced in this study is that the federal government of Nigeria (FGN) and its monetary authority should change their perception of cryptocurrency as only an investment asset rather than a currency that facilitates payments or transfers of funds and is vulnerable to criminal activity³⁷.

A study on cryptocurrency and the Nigerian economy was examined. The purpose of this research is to look into the influence of cryptocurrencies on various sectors of the Nigerian economy. Bitcoin's cultural significance and enduring market encourage experts and policymakers to wonder how cryptocurrencies may effect the economy, particularly monetary policy. It has been debated whether it would have a beneficial or negative impact on the economy. According to the findings, Blockchain technology has a good relationship with monetary policy and has the capacity to solve substantial problems in the agricultural and educational sectors⁶⁹.

This study was undertaken to ascertain the view of Nigerian Professional Accountants towards legislating cryptocurrency in Nigeria. It also investigated four of the putative benefits of cryptocurrency law that actually pose concerns. Respondents provided quantitative data via the administration of a standardised questionnaire. The study's population consisted of a

stratified group of 1,300 Chartered Accountants, including Tax Practitioners, Financial Analysts, Statutory Auditors, Bankers, Accountants, Lawyers, Lecturers, and other Accounting specialists. For the study, a convenient sample of 250 Practitioners was chosen. Descriptive statistics were used to analyse the data. According to the findings, Nigerian Professional Accountants are willing to operate in the cryptocurrency ecosystem if the government legislates its use. The study concluded that the Federal Government of Nigeria should legislate cryptocurrency or a modified form of it for the preservation of her economy and the interests of her population. However, the government must take a comprehensive picture of the economy and scrutinise every relevant aspect within the scope of the law to ensure that the legislative choice is in the best interests of all citizens⁹³.

A study was conducted on money laundering risks and vulnerabilities associated with MMM Nigeria. The objective of the research was to raise awareness among regulatory, enforcement, and customs authorities, as well as reporting institutions, about the MMM Scheme's money laundering risks and vulnerabilities, and how to mitigate them. The study was conducted as a desk study, analysing various documents and reports such as the Financial Action Task Force (FATF) typologies reports on new payment methods (NPM) in 2006, 2008, 2010, 2013, and 2014, which focused on: the potential for NPM to be misused by criminals; the identification of risk factors that can significantly differ from one new payment product or service to another, depending on functionality; and risk mitigants that can be adjusted to a single new payment product or service in order to handle its unique risk profile. The discovery demonstrates that high-risk clients, such as Politically Exposed Persons (PEPs), could take advantage of MMM's non-face-to-face feature by impersonating low-risk consumers (e.g., retirees) to open MMM accounts⁹⁴.

2.3.2 Empirical Review on Cryptocurrencies in Other Nations

A study on the adoption of Cryptocurrency in e-retail was assessed. Because of their conveyance, security, trust, and the capacity to make transactions without the assistance of traditional institutions and regulating bodies, cryptocurrencies have transgressed ever-changing economic trends in the global economy. However, bitcoin acceptance remains low among stakeholders, particularly e-retailers. As a result, the current study investigates the intents of e-retailers in the Asia-Pacific region to use cryptocurrencies. The TAM-based SOR is considered in this study, with a combination of non-cognitive qualities (compatibility and convenience) recommended as triggers for e-retailers to embrace the cryptocurrencies under consideration. The results show that the postulated non-cognitive qualities are important in determining e-retailers' technostress (emotional state). Furthermore, it was discovered that e-retailers' technostress has a significant impact on their intents to use cryptocurrencies in commercial settings. Meanwhile, regulatory support communication can be utilised to assist regulatory organisations and governing institutions in maintaining global economic control. Through its analysis of e-retailers' intents to use cryptocurrencies for the first time in the context of technostress and regulatory assistance, the proposed study makes major theoretical and practical advances⁹⁵.

A study was conducted on banking institutions adoption of cryptocurrencies. According to the report, big banks' exposures are currently at very low levels. Higher levels of innovative capacity, advanced economic growth, and greater financial inclusion are related with a larger likelihood of banks taking on bitcoin exposures across countries. According to the survey, significant activity is centred in loosely regulated cryptocurrency exchanges. This "shadow cryptocurrency financial infrastructure" caters to both individual and institutional clients, including specialist investment funds. Uneven regulatory treatment of banks and crypto

exchanges, as well as severe data gaps, indicate that a proactive, holistic, and forward-thinking approach to regulating and managing cryptocurrency markets is required. It should prioritise providing a more equal playing field for traditional financial institutions and intermediaries in the burgeoning crypto shadow financial system by imposing more stricter regulatory and supervisory control on the latter⁹⁶.

Evaluation of potential cryptocurrency development ability in terrorist financing was studied. Terrorist financing is the economic foundation of terrorist acts as well as the lifeblood of terrorist organisations. Terrorist organisations have steadily come to use cryptocurrencies to finance their activities based on traditional methods of raising funds in recent years. The anonymity of cryptocurrency is appealing to terrorist organisations, although its use is still limited. To investigate cryptocurrency's potential development capability in terrorist financing, we investigate its internal characteristics and development state, as well as international organisations' supervisory systems. This study aims to improve our awareness of the possible threats of cryptocurrencies and to serve as a reference for the international community's battle against terrorist financing. The findings revealed that the advancement of bitcoin technology, particularly the enhancement of anonymity, will make it very easy for terrorist organisations to raise funding⁹⁷.

A similar study was conducted on the progress of cryptocurrency assets investment from financial perspectives such as risks, comparisons and impacts. Cryptocurrencies, as noted in this report, have grown in popularity in recent years. Because bitcoin prices have risen dramatically since 2008, more investors are choosing to invest in cryptocurrencies for speculative purposes. Some companies are investigating the potential of using cryptocurrencies as a medium of exchange as they evolve. Beginning with cryptocurrencies' current function as speculative products, this paper analyses potential hazards in the

investment process and solutions to avoid them. To demonstrate their potential as a trading medium, we compare Bitcoin, a widely held cryptocurrency, to other types of currencies, such as Dogecoin, Ethereum, Central Bank Digital Currency, and traditional currencies. Among the most significant virtual capital affairs, we chose the cases of Tesla and Tencent to describe their impacts on our daily lives from a micro perspective. In terms of the macro perspective, we focus on the effects on accounting methods and financial order development. This study attempts to provide a more thorough knowledge of Bitcoin through multidimensional research, shedding light on cryptocurrency and blockchain investing⁹⁸.

Bitcoin is the first digital medium to allow global, “purely peer-to-peer” exchange. At the height of the Great Recession, Bitcoin's pseudonymous founder launched the electronic currency to circumvent governmental and economic institutions. It is now regarded as a chance for the unbanked, a liberating force, and a pioneering technology. It is also notoriously associated with volatility, illegal activity, and excessive energy usage. Bitcoin has also slipped under the political science radar, despite the fact that computer scientists, economists, and legal experts have written extensively about it. To fill a gap in the literature, I describe Bitcoin as a global actor, explain how Bitcoin and blockchain technology work, and explain why Bitcoin is significant to political science as the prototypical case of blockchain technology. According to the study, Bitcoin is a form of contested politics that is uniquely adapted to the twenty-first century. Examining Bitcoin as a type of disputed politics reveals how a supposedly borderless technology has fared in subverting state authority: not well. Nonetheless, Bitcoin has achieved success in at least two ways: it is a new kind of untraceable electronic payment that coordinates unmatched quantities of computer power from volunteer contributors, and it has evolved into a robust, global social movement. Bitcoin, as an example of blockchain technology, motivates research into blockchain's capacity to support collective action, applications in international cooperation and rivalry, and human

development prospects. The paper concludes with recommendations for blockchain research and policy⁹⁹.

A study on the implications of cryptocurrencies and blockchain for financial crime, money laundering and tax evasion was conducted. More and more officials are concerned about criminals utilising cryptocurrencies for illegal purposes such as money laundering, terrorist financing, and tax avoidance. The issue is significant: while the full scope of virtual currency misuse is unknown, its market value has been reported to exceed EUR 7 billion globally. This Policy Department A study expands on this topic from a legal standpoint, concentrating on the use of cryptocurrencies for financial crime, money laundering, and tax evasion. The study's findings revealed that Blockchain is a technology that underpins numerous cryptocurrencies but is not intended to be used to launder money, enable terrorist financing, or cheat taxes. Blockchain has multiple applications across the entire legal sector. The fight against money laundering, terrorist financing, and tax evasion should concentrate on the illegal uses of cryptocurrencies rather than blockchain. It includes policy suggestions for future EU standards¹⁰⁰.

A study was conducted on the economics of cryptocurrencies. The research looked into the ideal design of cryptocurrencies and quantified how well such currencies can enable bilateral trade. The difficulty for cryptocurrencies is overcoming double-spending by depending on competition to maintain the blockchain (expensive mining) and delaying settlement. It is estimated that the existing Bitcoin arrangement results in a significant welfare loss of 1.4% of consumption. This welfare loss can be significantly reduced to 0.08% by using an ideal design that lowers mining and depends solely on money growth rather than transaction fees to fund mining incentives. We also point out that cryptocurrencies have the potential to threaten retail payment systems if scalability issues are addressed¹⁰¹.

A study assessed how effective governance institutions and de jure financial openness influence the attitude of policy makers in pursuing further financial development by allowing the use of cryptocurrency. It investigates the links between a) de jure cryptocurrency openness and institutional strength, and b) de jure cryptocurrency openness and de jure capital openness. The main estimation method is a cross-sectional ordered probit model that uses institutional and macroeconomic data from a variety of sources, including the Chinn-Ito index, the World Bank's Worldwide Governance Indicators, and the World Bank's World Development Indicators, among others, from 2010 to 2018. To assess de jure openness to bitcoin, we created an index of 218 economies based on the present legal and regulatory status of cryptocurrency as of 2018. The findings demonstrate that strong governance institutions are connected with a less restrictive regulatory attitude on cryptocurrencies, although financial openness is not. The findings show that a specific degree of institutional quality may be required before allowing new kinds of financial technology to enter the market. Because cryptocurrency is seen as a high-risk speculative financial instrument, its current state of many unknowns may prohibit policymakers from performing rigorous surveillance in order to avoid system-wide risks¹⁰².

A study on cryptocurrency and state sovereignty was conducted. Bitcoin has grown and shown itself as a disruptive technology, resistant to sovereign law and international financial rules, and an alternative to the sovereign state's idea of fiat money since its inception in late 2008. Because of the Wild West nature of cryptocurrency, several individuals, criminal organisations, terrorist groups, and sovereign states have used Bitcoin, among other cryptocurrencies, to avoid detection, interference, or punishment from regulatory agencies while engaging in activities such as money laundering, drug trafficking, purchasing weapons, and circumventing international sanctions. This study addresses bitcoin's disruptive character by exploring what legislative solutions are available to sovereign nations to maximise the

efficiency of sovereign laws while preventing unwanted cryptocurrency use. To answer this question, this study divides legislative acts that governments can take into three categories: prohibition, regulation, and adoption, and investigates the benefits, restrictions, and effects of each policy. This study finds that sovereign states have had limited success in preventing illicit cryptocurrency use by examining the legislative actions of countries such as China, the United States, and Russia; however, unless a refined, multifaceted global regulatory standard on cryptocurrency transactions is implemented soon, cryptocurrency will continue to stay an unchecked means of transacting on an international scale¹⁰³.

The European Parliament's policy department for citizens' rights and constitutional affairs commissioned a study on virtual currencies and terrorist financing at the request of the TERR committee, which investigates the terrorist financing (TF) risks of virtual currencies (VCs), including cryptocurrencies such as Bitcoin. It analyses the characteristics of VCs that pose TF threats and examines open source material on terrorist use of virtual currency to comprehend the current state and expected future manifestation of the danger. It then assesses the effectiveness of current regulatory and law enforcement responses in the EU and elsewhere. According to the study's findings, Bitcoin is not completely anonymous in practise, and cryptocurrency networks include centralised 'chokepoints' in the form of exchanges. As a result, the utility of VCs to terrorists is now restricted, although future technology advancements may change this. Finally, it makes recommendations to EU authorities and other relevant stakeholders for mitigating the TF risks of VCs¹⁰⁴.

A study on the evolution of e-money was researched. The study's objective is to examine the stages in the evolution of electronic money. The study methodology is based on the Austrian School of Economics' evolutionary theory of the origin of money and the theory of money and credit. The emergence of cryptocurrency is viewed as the next stage in the evolution of

money. The study indicates that bitcoin is the only type of electronic money that exists solely in electronic form and is in no way related to physical goods. As a result, Bitcoin has various advantages over conventional types of money¹⁰⁵.

Analysis of cryptocurrency, Bitcoin, and the future was studied. Cryptocurrency is an eight-year-old technology that uses an encrypted peer-to-peer network to facilitate digital barter. Bitcoin, the first and most popular cryptocurrency, is disrupting long-standing and unaltered financial payment systems that have been in place for decades. While cryptocurrencies are unlikely to replace traditional fiat currency, they may alter the way Internet-connected global markets interact with one another, removing restrictions associated with traditional national currencies and exchange rates. Invention advances at a breakneck pace, and the success of a given technology is almost entirely determined by the market it attempts to enhance. Cryptocurrencies have the potential to transform digital trade marketplaces by enabling a fee-free trading mechanism⁵.

A study was carried out on cryptocurrencies and its disruptive financial effects. According to the author, the crypto system distinguishes itself by providing an open-source, cryptographically secure, and secret platform for transactions and/or payments. The number of transactions and accounts (owned by individuals and businesses) is continually growing. Along with it, an entire industry of service providers has risen up. According to the study, the growth of Bitcoin and its sister currencies is an essential disruptive financial innovation that will continue to grow unless stifled by ill-considered legislative or regulatory initiatives. Potential issues are examined, and solutions are proposed. The overall assessment is that cryptocurrencies and virtual currency variants are a welcome development; they will provide competition to existing monetary modalities and governmental regulation; they will provide

alternative means of transaction to economic agents; and their innovative existence should be encouraged so that their beneficial features outperform any deleterious ones¹⁰⁶.

2.4 Conceptual Framework

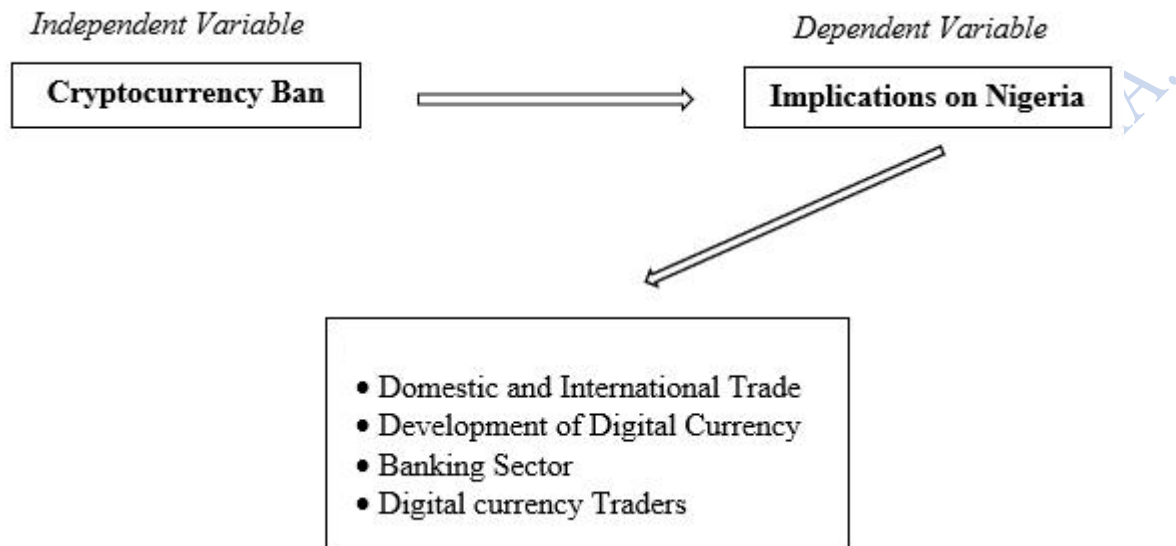


Figure 2.2: Influence of Cryptocurrency Ban on Nigeria

Source: Researcher's Computation

2.5 Summary of Gaps in Literature Reviewed

This study examined blockchain technology and cryptocurrency ban in Nigeria, its issues and implications for digital currency traders. The study was anchored on three major theories which are liberalism, realism, and constructivism theory. The implications of cryptocurrencies ban in Nigeria have been researched on and adequate findings have been made.

Previous research has been carried out on the effects and implications of cryptocurrency in various sectors of a country. A study on the adoption of cryptocurrency in e-retail sector was conducted. The study report that the adoption of cryptocurrency has been low among stakeholders, including e-retailers in the Asia and Pacific region⁹⁵. Another research on the adoption of cryptocurrencies in banking institutions. The study only focused on established

financial institutions and intermediaries in the emerging crypto shadow financial system without sampling the opinions of the cryptocurrency traders in which this present study explored⁹⁶. Additionally, a study on cryptocurrency and state sovereignty was conducted. This study addresses the disruptive nature of cryptocurrency by asking what legislative options are available to sovereign states to maximise the effectiveness of sovereign laws while limiting undesired cryptocurrency use¹⁰³. The fear of losing grip on her sovereignty could be said to a major motive behind the crypto ban in Nigeria.

Likewise similar studies have been done in Nigeria on the legal and financial implication of adopting cryptocurrency. The financial consequences have been discovered to include an absence of central authority, tax evasion, terrorism financing, money laundering, and cyber blackmail⁸⁶. The study, however, utilised secondary sources of data which differ this present study. This present research in differentiation obtained raw data through structured questionnaire. Another study was conducted on the prospects and problems of cryptocurrency in Nigeria¹¹. The study adopted Grounded Theory research design to achieve the objectives which contradicts the survey research design which was adopted in this present study. Similarly, a study evaluated the opportunity and risks of digital currencies in Nigeria with specific focus on eNaira⁸⁷. What differentiates the study from the present research is that the study deals with the Nigerian digital currency (eNaira) alone.

A very similar study has previously been conducted on the effects and implication of cryptocurrency ban in Nigerian economy. The researcher adopted Survey research design and random sample technique to draw 400 respondents comprising of crypto traders, bankers, bank customers university staff, students and public from Enugu Nigeria⁷. The findings from this study are only limited to Enugu (South-East Nigeria) which is not large enough to represent the opinions of the entire nation. The gap in location and population formed the

basis upon which this present research was conducted on similar respondents from Oyo State (South-West Nigeria) to report the opinions of crypto traders, bankers, university lecturers from other parts of Nigeria.

DO NOT COPY. LEAD CITY UNIVERSITY, NIGERIA.

Endnotes

1. R. Rupeika-Apoga, & R. Nedovis Uraev, *The Foreign Exchange Exposure of Non-Financial Companies in Eurozone: Myth or Reality?* **International Journal of Economics and Business Administration**, 3(1), 2015, 54-66.
2. J. Huerta de Soto, *Money, Bank Credit, and Economic Cycles*. Chelyabinsk. 2008.
3. J. P. Allegret, H. Raymond, & H. Rharrabti, *The Impact of the Eurozone Crisis on European Banks Stocks, Contagion or Interdependence*. **European Research Studies Journal**, 19(1), 2016, 129-147.
4. O. D. Arslan-Ayaydin, D. Barnum, M. B. Karan & A. H. Ozdemir, *How is Moral Hazard Related to Financing R&D and Innovation?* **European Research Studies Journal**, 17(4), 2014, 111-132.
5. M. Rothbard, *State and Money: How the Government took Possession of the Monetary System of Society*. Chelyabinsk, 2003.
6. F. Shostak, *Myth of Electronic Money*. Available online: <http://www.libertarium.ru/94532> 2016.
7. E. C. Okpalaojiego, *Effects and Implications of Cryptocurrency Ban on Nigerian Economy*. **Academic Journal of Current Research**, 8(4), 2021, 23-33.
8. G. Ateniese, B. Magri, D. Venturi, & E. Andrade, "Redactable Blockchain – or Rewriting History in Bitcoin and Friends", 2nd IEEE European Symposium on Security and Privacy—EuroS&P. 2017.
9. G. Iredale, *History of Blockchain Technology: A Detailed Guide*. 101 Blockchains. Available online: <https://101blockchains.com/history-of-blockchain-timeline/> 2020.
10. A. Rosic, M. Baggetta, & M. Baggetta, *What Is Hyperledger? The Most Comprehensive Step-by-Step Guide*. Blockgeeks. Available online: <https://blockgeeks.com/guides/hyperledger/> 2020.
11. N. Namzul, *Blockchain Economy; Impact and Future*. LtEconomyBlog. <http://www.lteconomy.it/blog/2018/12/09/blockchain-economy-impact-and-future/> 2018.
12. P. Baker, *Blockchain Adoption will Add \$120bn To World Economy*. Crypto Briefing. Available online: <https://cryptobriefing.com/blockchain-adoption-study/> 2018.
13. A. Collomb, & K. Sok, *Blockchain / Distributed Ledger Technology (DLT) What Impact on Financial Sector?* **Digiworld Economic Journal**, 103, 2016, 93.
14. World Economic Forum (Wef), *Building Block (chains) For a Better Planet*. 2018.
15. H. Macdonald, *Proprietary data analysis: Suicidality and antidepressants*. *BMJ*, 2009. b4232. Available online: <https://doi.org/10.1136/sbmj.b4232>

16. E. Dourado, & J. Brito, *Cryptocurrency*. **The New Palgrave Dictionary of Economics**, 2014, 1-10.
17. K. Werbach, *The Blockchain and the New Architecture of Trust*. Cambridge, MA: The MIT Press, 2018.
18. O. A. Abdullateef, *Cryptocurrencies in Nigeria: A Legal Analysis*. Available Online: <https://ssrn.com/abstract=3106296> 2021.
19. Crypto-Currency Market Capitalizations. *Types of cryptocurrency*. Available online: <https://coinmarketcap.com/all/views/all/> 2018
20. E. Howden, *The Crypto-Currency Conundrum: Regulating and Uncertain Future*. **Emory International Law Review**, 2014, 742-762.
21. R. Grinberg, *Bitcoin: An Innovative Alternative Digital Currency*. **Hastings Sci & Tech. LJ**, 2012, 181-206.
22. S. Bayem, *Dynamic Common Law and Technological Change: The classification of Bitcoin*. **Washington and Lee Law Review Online**, 2014, 71(2) 1-14.
23. A. Brantly, *Financing terror bit by bit*. **CTC Sentinel Journal**, 7(10), 2014.
24. Europol. *Why Cash is Still King?* Available Online: www.europol.europa.eu/sites/default/files/publications/europolcik.pdf 2015
25. FATF. *Virtual Currencies, Key Definitions and Potential AML/CFT Risks* Available online: <https://www.fatfgafi.org/media/fatf/documents/reports/Virtual-currency-keydefinitions-and-potential-aml-cft-risks.pdf> 2014.
26. M. Staples, S. Chen, S. Falamanski, A. Ponomarev, P. Rimba, A. P. Tran, I., Weber, X. Xu, & J. Zhu, *Risks and Opportunities for Systems Using Blockchain and Smart Contracts*. Canberra. Commonwealth Scientific and Industrial Research Organization. 2017.
27. M. Omri, *Are Cryptocurrencies Super Tax Havens?* Available Online: <http://repository.law.umich.edu/mlrf/vol112/iss1/22013>
28. S. Nakamoto, *Bitcoin: A peer-to-peer electronic cash system*. **Decentralized Business Review**, 2008, 1–9.
29. FATF. *Virtual Currencies: key Definitions and Potential AML/CFT Risks*. Available online: <http://fatfgafi.org/media/fatf/documents/reports/Virtual-currencykey-definitions-and-potential-amlcft-risks.pdf> 2015
30. Freeman, A. (2011). *Bitcoin: The ultimate offshore bank account?* Economics and Liberty. 2011.

31. R. C. Williams, *Prospects for Blockchain-Based Settlement Frameworks as a Resolution to the Threat of Derisking to Caribbean Financial Systems*. United Nations Economic Commission for Latin America and the Caribbean. 2017.
32. T. Williams-Grut, *Deutsche Bank, HSBC and Five Other Big Banks are Collaborating on a Blockchain Project*. Available online: <http://www.businessinsider.com/deutsche-bank-hsbc-kbc-natixisrabobank-socit-gnrle-andunicredit-work-on-digitaltradechain-dtc-20171?r=UK&IR=T> 2017.
33. World Bank. *Annual Remittances Data*. Available online: <https://www.worldbank.org/en/topic/labormarkets/brief/migration-and-remittances> 2019.
34. M. Schwarz, *Legal Status of Crypto in Nigeria*. Available online: <http://nigerianlawtoday.com/legalstatus-of-crypto-in-nigeria/> 2018.
35. World Bank. *World Bank Financial Inclusion: Overview*. Available online: <http://www.worldbank.org/en/topic/financialinclusion/overview> 2016
36. NDIC. *Press Release*. Available online: <https://ndic.gov.ng/ndic-urgescaution-on-adoption-of-cryptocurrencies/> 2019.
37. C. E. Onyeye, *Crypto-currency and the Nigerian Economy: Problems and Prospects*. **IAA Journal of Social Sciences**, 6(1), 2020, 152-162.
38. C. Dierksmeier, & P. Seele, *Cryptocurrencies and Business Ethics*. **Journal of Business Ethics**, 2016, 1-14.
39. P. M. Monamo, V. Marivate, & B. Twala, *A Multifaceted Approach to Bitcoin Fraud Detection: Global and Local Outliers*, in *Proceeding of the International Conference Machine Learning Applications*, 2016, 188-194.
40. S. Kasiyanto, *Bitcoin's Potential for Going Mainstream*. **Journal of Payments Strategy & Systems**, 10(1), 2016, 28-39.
41. P. K. Kaushal, A. Bagga, & R. Sobti, *Evolution of Bitcoin and security risk in Bitcoin wallets*, in *Proceeding of the International Conference on Computer, Communications and Electronics*. (Comptelix), 2017, 172–177.
42. D. Zambre, & A. Shah, *Analysis of Bitcoin Network Dataset for Fraud*. Stanford CS 224W Project Final Report-Group 30, 2013, 1-13.
43. J. Murali, *A New Coinage: Can Bitcoin, the Global Online Digital Currency, be the Precursor of a New Monetary System?* **Economic and Political Weekly**, 48(38), 2013, 77-78.
44. T. Pham, & S. Lee. *Anomaly detection in Bitcoin network using unsupervised learning methods*. 2016.
45. C. Harwick, *Cryptocurrency and the Problem of Intermediation*. **The Independent Review**, 20(4), 2016, 569-588.

46. J. A. Kroll, I. C. Davey, & E. W. Felten, *The Economics of Bitcoin Mining, or Bitcoin in the Presence of Adversaries*,” in Proceeding of the 12th Workshop on the Economics of Information Security, 2013, 1-21.
47. B. Sengupta, S. Bag, S. Ruj, & K. Sakurai, *Retricoin: Bitcoin Based on Compact Proofs of Retrievability*, in Proceeding of the International Conference on Distributed Computing and Networking (ICDCN), Art. no. 14, 2016.
48. O. Odiboh, C. Ben-Enukora, T. Oresanya, D. Yartey, & A. Aiyelabola, *Awareness on Digital Security and E-Business in Nigeria*. In International Conference on Education, Social Sciences and Humanities, Dubai, UAE, 2017, 1402–1408.
49. F. Piazza, *Bitcoin in the Dark Web: A Shadow over Banking Secrecy and a Call for Global Response*. **Southern California Interdisciplinary Law Journal**, 26(3), 2017, 545.
50. N. Plassaras, *Regulating Digital Currencies: Bringing Bitcoin within the Reach of the IMF*. **Chicago Journal of International Law**, 14(1), 2013, 396-406.
51. C. Lagarde, *Central Banking and Fintech—A Brave New World?* Speech at Bank of England Conference, London, Available online: <https://www.imf.org/en/News/Articles/2017/09/28/sp092917-central-banking-and-fintech-a-brave-new-world> 2017.
52. S. Gupta et al., *Digital Revolutions in Public Finance*. Washington, DC: International Monetary Fund, 2017, 173–196.
53. Committee on Payments and Market Infrastructures, *Digital Currencies*. Basel, Switzerland: Bank for International Settlements, Available online: <https://www.bis.org/cpmi/publ/d137.pdf>. 2015
54. M. Ghaemi Asl, M. M. Rashidi, & S. A. Hosseini Ebrahim Abad, *Emerging digital economy companies and leading cryptocurrencies: Insights from blockchain-based technology companies*. **Journal of Enterprise Information Management**, 34(5), 2021, 1506-1550.
55. H. Halaburda, M. Sarvary, & G. Haeringer, *Beyond Bitcoin: The Economics of Cryptocurrencies and Blockchain Technologies (Chapter 6: Smart Contracts and Blockchain)*. **SSRN Electronic Journal**. <https://doi.org/10.2139/ssrn.3894110>
56. A. Lipkin & F. Noll, *Smart Banknotes and Cryptobanknotes: Hybrid Banknotes for Central Bank Digital Currencies and Cryptocurrency Payments*. **SSRN Electronic Journal**, 2021.
57. J. Rundell, *David Roberts: Images of Aesthetic Modernity*. **Thesis Eleven**, 152(1), 2019, 76-86.
58. R. Bohme et al., *Bitcoin: Economics, Technology, and Governance*. **The Journal of Economic Perspectives**, 29(2), 2015, 231.

59. A. Huang, *Reaching within Silk Road: The Need for a New Subpoena Power that Targets Illegal Bitcoin Transactions*. **Boston College Law Review**, 56(5), 2015, 2097, 2119–2122, 2120, 2123–2124.
60. D. Bryans, *Bitcoin and Money Laundering: Mining for an Effective Solution*, **Indiana Law Journal**, 89(1), 2014, 472.
61. J. Turpin, *Bitcoin: The Economic Case for a Global, Virtual Currency Operating in an Unexplored Legal Framework*. **Indiana Journal of Global Legal Studies**, 21(1), 2014, 364, 352–353.
62. O. Marian, *A Conceptual Framework for the Regulation of Cryptocurrencies*. **University of Chicago Law Review**, 82(53), 2015, 55–68.
63. J. Rathod, A. Gupta, & D. Patel, *Using Blockchain Technology for Continuing Medical Education Credits System*, Seventh International Conference on Software Defined Systems (SDS), 2020, 214-219.
64. N. Kiyotaki, & R. Wright, *A Search-Theoretic Approach to Monetary Economics*. **American Economic Review**, 83(1), 1993, 63-77.
65. Y. Acho, *Crypto-Currency and the Nigerian Economy*. **Journal of International Relations Security and Economic Studies (JIRSES)**, 1(3), 2021, 43-58.
66. M. Bartoletti, S. Carta, T. Cimoli, & R. Saia, *Dissecting Ponzi Schemes on Ethereum: Identification, Analysis and Impact*. 2017 <https://arxiv.org>.
67. Central Bank of Nigeria (CBN), *Circular to Banks and other Financial Institutions on Virtual Currency Operations in Nigeria*. available at: <https://www.cbn.gov.ng/out/2017/fprd/aml%20january%202017%20circular%20to%20fis%20on%20virtual%20currency.pdf> (2017)
68. Central Bank of Nigeria (CBN), Press Release: Virtual Currencies not Legal Tender in Nigeria. <https://www.cbn.gov.ng/Out/2018/CCD/Press%20Release%20on%20Virtual%20Currencies.pdf> (2018)
69. G. P. Enitan & S. S. Akadiri, *Cryptocurrency and the Nigerian Economy*. **Journal of Economics & Management Research**, 1(3), 2020, 1-2.
70. J. Fernandes-VillaVerde & J. Sanches, *On the Economies of Digital Currencies*. **Working Paper**, 18-7, 2018, Federal Reserve bank of Philadelphia.
71. C. G. Ahannaya, A. D. Oshinowo, A. S. Sanni, J. A. Arogundade & O. J. Ogunwole, *The Effect of Cryptocurrencies on Nigeria Economy*. **International European Extended Enablement in Science, Engineering & Management (IEEE-SEM)**, 9(3), 2021, 8-14.
72. BIS, *Cryptocurrencies: Looking beyond the hype*. **BIS Annual Economic Report**, Bank for International Settlements. 2018.

73. M. Bech & R. Garratt, Central Bank Cryptocurrencies', **Bank for International Settlements (BIS) Quarterly Review**, 2017,
74. T. Oludimu, *5 areas the Nigerian economy can benefit from blockchain technology*. <https://techpoint.africa>. 2018.
75. S. Timi-Koleolu & E. Aroh, *eNaira – The Future of Digital Currency in Nigeria?* Available at, <https://african.business/2021/10/finance-services/nigeria-gears-up-for-enaira/> (2021)
76. S. Kedem, Nigeria launches eNaira – Africa's first digital currency. *Nigeria Finance and Services*. Available at, <https://www.mondaq.com/nigeria/fin-tech/1108724/enaira-the-future-of-digital-currency-in-nigeria-> (2021).
77. S. Karen, *How Blockchain Is Affecting Globalization*. A Bachelor's Degree Project Submitted to Malmo University, 2019
78. T. Tillemann, *Break Corruption with Bitcoin's Backbone*. **Foreign Policy**, 2(227), 2018, 27-28.
79. V. Vashisht, *Corruption, No More Cash, Corruption and Economic Development*. London: Taylor & Francis Group, 2017.
80. T. Owen, *Disruptive Power: The Crisis of the State in the Digital Age*. **International Affairs**, 92(1), 2016, 463– 465.
81. T. Dunne, & Schmidt, *The Globalization of World Politics: An Introduction to International Relations*. London: Oxford University Press, 2014.
82. M. Campbell-Verduyn & M. Goguen, *The mutual constitution of technology and global governance – Bitcoin, blockchains, and the international anti-money-laundering regime*. Campbell-Verduyn M. (eds) *Bitcoin and Beyond: Cryptocurrencies, Blockchains and Global Governance*. New York: Routledge, 2018.
83. N. Kossow, & V. Dykes, *Bitcoin, Blockchain and Corruption: An Overview*. Available online: <https://knowledgehub.transparency.org/helpdesk/Bitcoin-blockchain-and-corruption-anoverview>
84. J. Baylis, S. Smith, & P. Owens, *Globalization and its Precursors: The Globalization of World Politics*. London: University Press, 2019.
85. M. Campbell-Verduyn, *Bitcoin and Beyond: Cryptocurrencies, Blockchains and Global Governance*. New York: Routledge, 2018.
86. G. E. Oyedokun, & M. Awosika, *Adopting cryptocurrencies in Nigeria: Legal and financial implications*. In Section on Business Law of Corporate Governance and Compliance Committee, 2022.
87. P. K. Ozili, *Central Bank Digital Currency in Nigeria: Opportunities and Risks*. **SSRN Electronic Journal**, 2022, 1-12.

88. U. M. Ekong & C. N. Ekong, *Digital currency and financial inclusion in Nigeria: Lessons for development*. **Journal of Internet and Digital Economics**, 2(1), 2022, 46-67.
89. S. K. Fakunmoju, O. Banmore, A. Gbadamosi & O. I. Okunbanjo, *Effect of Cryptocurrency Trading and Monetary Corrupt Practices on Nigerian Economic Performance*. **Binus Business Review**, 13(1), 2022, 31-40.
90. T. T. Siyanbola, S. I. Audu, A. R. Adediran, & A. Agbaje, *Cryptocurrency and the Nigerian Economy*. **African Journal of Accounting and Financial Research**, 4(3), 2021, 180-193.
91. D. O. Odumosu, *Digital currency in Nigeria: The next big thing*. Lonsdale Solicitors, 2021, 1-15. Retrieved from <https://ssrn.com/abstract=3888207>
92. L. D. Iyoyojie, O. J. Edeh, U. Erinne, & C. Umezurike, *Cryptocurrency: The Search for a Legal Framework as a World Currency*. **International Journal of Business and Law Research**, 9(3), 2021, 15-25.
93. M. K. Salawu, & T. Moloi, *Benefits of Legislating Cryptocurrencies: Perception of Nigerian Professional Accountants*. **Academy of Accounting and Financial Studies Journal**, 22(6), 2018, 1-17.
94. E. E. Esoimeme, *The Money Laundering Risks and Vulnerabilities Associated with MMM Nigeria*. **Journal of Money Laundering Control**, 21(1), 2018, 112-119.
95. R. Wu, K. Ishfaq, S. Hussain, F. Asmi, A. N. Siddiquei, & M. A. Anwar, *Investigating e-Retailers' Intentions to Adopt Cryptocurrency Considering the Mediation of Technostress and Technology Involvement*. **Sustainability**, 2022, 14(641), 1-21.
96. R. Auer, M. Farag, U. Lewrick, L. Orazem & M. Zoss, *Banking in the shadow of Bitcoin? The institutional adoption of cryptocurrencies*. **BIS Working Papers**, 1013, 2022, 1-21.
97. S. Wang, & X. Zhu, *Evaluation of Potential Cryptocurrency Development Ability in Terrorist Financing*. **Policing**, 2021, 2329- 2340.
98. Y. Bian, X. Lin & Y. Xiong, *The Progress of Cryptocurrency Assets Investment from Financial Perspectives: Risks, Comparisons and Impacts*. Proceedings of the 2021 3rd International Conference on Economic Management and Cultural Industry (ICEMCI 2021), 33-38.
99. J. R. Mignano, *Follow the (Electronic) Money: How Bitcoin and Blockchain Technology are "Shaking the System"*. Dissertations and Theses Paper presented at Portland State University, 2020.
100. R. Houben, & A. Snyers, *Cryptocurrencies and blockchain: Legal context and implications for financial crime, money laundering and tax evasion*. Policy Department for Economic, Scientific and Quality of Life Policies, 2020.
101. J. Chiu & T. V. Koepl, *The Economics of Cryptocurrencies – Bitcoin and Beyond*. **Staff Working Papers**, 2019, 1-59.

102. J. B. R. Shirakawa & U. Korwatanasakul, *Cryptocurrency Regulations: Institutions and Financial Openness*. **ADB Working Paper Series**, 978, 2019, 1-17.
103. R. L. Frebowitz, *Cryptocurrency and state sovereignty*. A PHD theses presented at the Naval Postgraduate School Monterey, California, 2018.
104. T. Keatinge, D. Carlisle, & F. Keen, *Virtual Currencies and Terrorist Financing: Assessing the Risks and Evaluating Responses*. Policy department for citizens' rights and constitutional affairs, 2018.
105. A. V. Vlasov, *The Evolution of E-money*. **European Research Studies**, 20(1), 2017, 215-224.
106. V, Gautam, *Cryptocurrencies: Are Disruptive Financial Innovations Here?* **Modern Economy**, 6, 2015, 816-832.

DO NOT COPY. LEAD CITY UNIVERSITY, NIGERIA

Chapter Three

Methodology

This chapter focuses on the procedures of data gathering and analysis employed in the study. It contains research design, population of the study, sample size determination, population of the study, sampling techniques and procedures, sample frames, sources of data and data collection, research instrument and design, validity, and reliability of the research instrument.

3.1 Research Design

This study adopted descriptive survey research design which were predicated on the use of primary and secondary sources of information in gathering data about varying subjects. The data gathered explored the issues of blockchain technology and cryptocurrency ban in Nigeria. By adopting these methods, the data required in this study were collected from the respondent through structured questionnaire. This enabled the researcher to establish relationship that exist between the study variables by collecting data from a sample that is fair representation of the entire population or group.

3.2 Population of the Study

The population of this study comprises of selected registered cryptocurrency traders who operate legitimately and have physical locations in Oyo State Nigeria (83); selected bank officials from Access Bank, Stanbic IBTC and Zenith Bank Branches in Ibadan (47); and a total of 32 lecturers from the department of Economics; and the Department of Management and Social Sciences, Lead City University, Ibadan. This brings the total population of this study to 162.

3.3 Sample and Sampling Techniques

A sample is a subset of a population. It can also be defined as a fair representation on an entire pool of items in quantitative research. Since the population size is 162 and considered to be relatively low, the researcher studied all the respondents. However, the purposive sampling method was used to select respondent based on the characteristic needed for this study. That is, the researcher will administered copies of the questionnaires to digital currency traders, bank officials, and university lecturers who are willing to participate in the study.

3.4 Description of Research Instrument

Structured questionnaires were adopted in this study to get data from the respondents. A questionnaire is a research tool that is mostly used in survey or statistical analysis study, which consists set of questions in different formats. Primarily, it is used in research to ask the participants general, and close-ended questions.

3.5 Validation of Research Instrument

As a process, validation involves collecting and analysing data to assess the accuracy of an instrument. There are numerous statistical tests and measures to assess the validity of quantitative instruments, which generally involves pilot testing. This study ensured the research instrument examined all its construct of interest, measures the characteristics of variables and measures what the research intends to measure. The research instrument was also reviewed by the thesis supervisor before being deployed for data gathering.

3.6 Reliability of Research Instrument

The reliability of a research instrument concerns the extent to which the instrument yields the same results on repeated trials. Reliability of the research instrument is the measure of the dependability and the internal consistency of the items of the instrument of data collection. The data required for this study were gathered from questionnaires administered directly by the researcher with responses from the respondents, thus, the data was found suitable, appropriate and reliable for this study.

3.7 Administration of Research Instrument and Method of Data Collection

Copies of the questionnaire were administered to the sample drawn from the population. The researcher administered hard copies of the research instruments to the university lecturers and bank staff and soft copy to the cryptocurrency traders via Google Form with the help of well-trained research assistants to ensure the questionnaires are distributed accurately and for prompt retrieval. Although the data in this study were mainly primary, the researcher adopted also, secondary data with respect to this research. The primary data were sourced directly from the stakeholder and actors in the crypto sectors. The secondary data were gathered from various texts and published work as related to blockchain technology and cryptocurrency.

3.8 Method of Data Analysis

The data analysed in this study comprise of those both from primary and secondary sources. The qualitative data were analysed using descriptive statistics of mean and standard deviation through SPSS. The qualitative descriptive data analysis essentially has to do with summarising the information generated in the research verbally. The adoption of the foregoing analytical method because the study principally relied on the primary data.

Endnotes

- ¹ H. Baratt and S. Shanti Kumar, “Method of sampling from a Population”. Health Knowledge. <http://www.healthknowledge.org.uk/public-health-textbook/research-methods/1a-epidemiology/method-of-sampling-population> 2021
- ² G. E. Oyedokun, Research Methodology for management and Social Science, Lagos, Nigeria: Aaron and Hur Publishing, 2020.

DO NOT COPY. LEAD CITY UNIVERSITY, NIGERIA.

Chapter Four

Results and Discussion of Findings

This chapter presents the results of the analysis and the discussion of findings from the data collected from respondents through questionnaires. This is to provide adequate and reliable answers to the research questions. The use of tables is to depict the frequencies clearly and easily. A sample of the questionnaires that were distributed is available in the appendix.

4.1 Demographic Data Analysis

The population for this study is 162 people consisting of bankers, cryptocurrency traders, and university lecturer which are relevant to the study. Questionnaires were administered, however, three more questionnaire were received back out of which two are lawyers and an additional trader. Thus the total population examined in this study is 165 people.

The questionnaire was divided into two sections (A and B). Section A comprised the demographic information of the respondents, while Section B contained questions that reflect on the blockchain and the implications of the cryptocurrency ban in Nigeria. This chapter shows the respondents' characteristics as well as the findings of the analysis. In the analysis, both descriptive and analytical forms were used.

Table 4.1 Demographic Data Presentation

N	Variables	Frequency	Percentage (%)	
1.	Gender	Female	44	26.7
		Male	121	73.3
		Total	165	100.0
2.	Age	20 & below	12	7.3
		21-30	107	64.8
		31-40	34	20.6
		41-50	4	2.4
		51 and above	8	4.8
		Total	165	100.0
3.	Work Experience	1-5	97	58.8
		6-10	40	24.2
		11-15	15	9.1
		16-20	6	3.6
		21 & above	7	4.2
		Total	165	100.0
4.	Occupation	Banker	43	26.1
		Cryptocurrency Trader	91	55.2
		University Lecturer	29	17.6
		Others	2	1.2
		Total	165	100.0

Source: Field Survey, 2022

Analysis from Table 4.1, showing the demographic data of the respondents reveals that 26.7% of respondents are female while 73.3% are male. This shows that the male respondents contributed more to the study than the females. The age distribution in the table shows that 7.3% of the respondents are below the age of 21, 64.8% of the respondents are 21-30years, 20.6% of the respondents are 31-40, and 2.4% of the respondents are 41-50. While, participants between the ages of 51 and above make up 4.8%. This shows that, respondents in this study are people in their youthful age.

The section showing the work experience of the respondents revealed 58.8% of the participants have been working with their respective agency/institute between 1-5years, 24.2% of the respondents have been working for 6-10years, 9.1% of the respondent have

been working for 11-15years, 3.6% of the respondents have been working for 16-20years, while 4.2% of the respondent have been working for more than 20 years. This clearly shows that respondents that have worked for 1-5 years engaged more in this study. Also, 26.1% of the total respondents are bankers, 55.2% are cryptocurrency traders, 17.6% are University Lecturer, while 2 (1.2%) of the respondents are lawyers. This shows that the questionnaire targeted specific professions for this study.

Table 4.2 Motives Behind Cryptocurrency Ban in Nigeria

S/N	Statements	SA (%)	A (%)	D (%)	SD (%)
1.	The cryptocurrency ban in Nigeria is due to its anonymity	27 (16.4)	57 (34.5)	45 (27.3)	36 (21.8)
2.	The usage of cryptocurrency is prone to financial crimes in Nigeria	40 (24.2)	51 (30.9)	39 (23.6)	35 (21.2)
3.	Cryptocurrency is used as a leverage for money laundering	33 (20)	55 (33.3)	38 (23.0)	39 (23.6)
4.	Cryptocurrency is being used to finance terrorist activities	26 (15.8)	41 (24.8)	50 (30.3)	48 (29.1)
5.	The use of cryptocurrency has become a medium for tax evasion	39 (23.6)	57 (34.5)	36 (21.8)	33 (20)
6	Cryptocurrencies are devoid of proper regulation	33 (20.0)	61 (37.0)	40 (24.2)	31 (18.8)

Source: Field Survey, 2022

As analysed in Table 4.2, 50.9% of the respondent agreed that the cryptocurrency ban in Nigeria is due to its anonymity. A total of 55.1% of the respondents either agreed or strongly agreed that that the usage of cryptocurrency is prone to financial crimes in Nigeria. The table also revealed that 53.3% of the respondent agreed that cryptocurrency can be used as a leverage for money laundering while, 59.4% of the respondents disagreed that cryptocurrency is being used to finance terrorist activities. Likewise, 58.1% of the

respondents are of the opinion that cryptocurrency has become a medium for tax evasion and 57% of the respondents stated that cryptocurrencies are devoid of proper regulation.

4.2 Presentation of Research Questions

Research Question One: How does the cryptocurrency ban affect domestic and international trade in Nigeria?

Table 4.3 Effects of Cryptocurrency Ban Domestic and International Trade in Nigeria

S/N	Statements	SA (%)	A (%)	D (%)	SD (%)
1.	The cryptocurrency ban has reduced virtual buying and selling of goods within Nigeria	22 (13.3)	81 (49.1)	42 (25.5)	20 (12.1)
2.	The cryptocurrency ban has reduced virtual payment of service within Nigeria	36 (21.8)	65 (39.4)	47 (28.5)	17 (10.3)
3.	The cryptocurrency ban has affected crypto collateral as regards loan and debt payment in Nigeria	32 (19.4)	73 (44.2)	42 (25.5)	18 (10.9)
4.	The cryptocurrency ban has reduced the wave of virtual importation of goods in Nigeria	39 (23.6)	67 (40.6)	38 (23.0)	21 (12.7)
5.	The ban on cryptocurrency in Nigeria has placed a limit on international online shopping	34 (20.6)	63 (38.2)	51 (30.9)	17 (10.3)
6	The ban on cryptocurrency in Nigeria has reduced online global presence of companies in Nigeria	30 (18.2)	72 (43.6)	43 (26.1)	20 (12.1)
7	The cryptocurrency ban has led to a favourable exchange rate in Nigeria	18 (10.9)	40 (24.2)	55 (33.3)	52 (31.5)

Source: Field Survey, 2022

Analysis from Table 4.3 showed that 62.4% of the respondent attested that the cryptocurrency ban has reduced virtual buying and selling of goods within Nigeria. Likewise, 51.2% of the total respondent agreed that cryptocurrency ban has reduced virtual payment of service within Nigeria and 63.6% confirmed that the cryptocurrency ban has affected crypto collateral as regards loan and debt payment in Nigeria.

Also, Majority (64.2%) of the respondent agreed that the cryptocurrency ban has reduced the wave of virtual importation of goods in Nigeria and 58.8% of the respondents either agreed or

strongly agreed that the ban on cryptocurrency in Nigeria has placed a limit on international online shopping. The table further indicates that 61.8% of the respondents established that the ban on cryptocurrency in Nigeria has reduced online global presence of companies in Nigeria while 64.8% of the respondents disagreed that the ban has led to a favorable exchange rate in Nigeria.

Research Question Two: In what ways does the cryptocurrency ban impact the development of digital currency in Nigeria?

Table 4.4 Impact of Cryptocurrency Ban on Digital Currency in Nigeria

S/N	Statements	SA (%)	A (%)	D (%)	SD (%)
1.	The cryptocurrency ban in Nigeria has led to increase in the value of Naira	12 (7.3)	41 (24.8)	42 (25.5)	70 (42.4)
2.	The cryptocurrency ban in Nigeria plays a significant role in the Introduction of e-Naira	43 (26.1)	65 (39.4)	33 (20.0)	24 (14.5)
3.	The cryptocurrency ban in Nigeria has led to increase in the purchase and usage of e-Naira	33 (13.3)	55 (27.3)	38 (34.5)	39 (24.8)
4.	The ineffective performance of e-Naira can be linked to cryptocurrency ban in Nigeria	30 (18.2)	65 (39.4)	41 (24.8)	29 (17.6)
5.	The cryptocurrency ban in Nigeria gives hope/prospects to further development of digital currencies in Nigeria	17 (10.3)	36 (21.8)	67 (40.6)	45 (27.3)
6	The CBN are likely to soon lift the ban on cryptocurrency in Nigeria	42 (25.5)	62 (37.6)	46 (27.9)	15 (9.1)

Source: Field Survey, 2022

According to the analysis presented in Table 4.4, 67.9% of the respondents disagreed that the cryptocurrency ban has led to an increase in the value of Naira. However, 65.5% of the respondent affirmed that cryptocurrency ban in Nigeria plays a significant role in the Introduction of e-Naira. Similarly, 59.3% of the respondent disagreed that cryptocurrency ban in Nigeria has led to increase in the purchase and usage of e-Naira.

A total of 57.6% of respondent are of the opinion that ineffective performance of e-Naira can be linked to cryptocurrency ban in Nigeria. The table also showed that 67.3% of the respondents disagreed that cryptocurrency ban in Nigeria gives hope or prospects to further development of digital currencies in Nigeria. While, 63.1% of the respondents confirmed that CBN are likely to soon lift the ban on cryptocurrency in Nigeria.

Research Question Three: What are the implications of the cryptocurrency ban on the Nigerian banking sector?

Table 4.5 Implications of the Cryptocurrency Ban on the Nigerian Banking Sector

S/N	Statements	SA (%)	A (%)	D (%)	SD (%)
1.	The emergence cryptocurrency has necessitated the need for cyber security in bank operations	25 (15.2)	86 (52.1)	32 (19.4)	22 (13.3)
2.	The emergence cryptocurrency reduced banks monitoring and control of funds	21 (12.7)	65 (39.4)	56 (33.9)	23 (13.9)
3.	The cryptocurrency ban is a drawback for financial inclusion and cash flow	38 (23.0)	68 (41.2)	43 (26.1)	16 (9.7)
4.	The cryptocurrency has reduced capital inflow of commercial banks in Nigeria	23 (13.9)	61 (37.0)	64 (38.8)	17 (10.3)
5.	There are sanctions directed to banks that do not adhere to CBN directives on cryptocurrency ban in Nigeria	59 (35.8)	69 (41.8)	25 (15.2)	12 (7.3)
6	The cryptocurrency ban in Nigeria has reduced the level of illegal transactions	26 (15.8)	48 (29.1)	50 (30.3)	41 (24.8)

Source: Field Survey, 2022

Analysis from Table 4.5 indicated that 67.3% of the respondents believe that emergence of cryptocurrency has necessitated the need for cyber security in bank operations and 52.1% of the respondents believe that the emergence cryptocurrency reduced banks monitoring and control of funds. The Table also indicated that 64.2% of total respondents affirmed that cryptocurrency ban is a drawback for financial inclusion and cash flow. Likewise, 50.9% of

the respondent confirmed that cryptocurrency has reduced capital inflow of commercial banks in Nigeria. A total of 87.6% of the respondents acknowledged that there are sanctions directed to banks that do not adhere to CBN directives on cryptocurrency ban in Nigeria. However, 55.1% of the respondents disagreed that the cryptocurrency ban in Nigeria has reduced the level of illegal transactions

Research Question Four: How does the cryptocurrency ban affect digital currency traders in Nigerian?

Table 4.6 Effect of Cryptocurrency Ban on Digital Currency Traders in Nigeria

S/N	Statements	SA (%)	A (%)	D (%)	SD (%)
1.	The ban has impoverished the teaming unemployed youths who trade on cryptocurrency as a means of livelihood	59 (35.8)	75 (45.5)	20 (12.1)	11 (6.7)
2.	The ban has prevented traders from buying cryptocurrencies with their credit or debit cards issued by Nigeria banks	84 (50.9)	62 (37.6)	13 (7.9)	12 (3.6)
3.	The cryptocurrency ban has led to liquidation of some financial technology startups in Nigeria	50 (30.3)	71 (43.0)	38 (23.0)	6 (3.6)
4.	Some financial technology companies have been forced to lay off their staff as a result of poor capital inflow due to the ban on cryptocurrency	47 (28.5)	79 (47.9)	30 (18.2)	9 (5.5)
5.	The cryptocurrency ban can has prevented traders from receiving proceeds of sales from exchanges which facilitate the buying and selling of cryptocurrency	40 (24.2)	83 (50.3)	33 (20.0)	9 (5.5)
6	The sudden ban of cryptocurrency trading and transactions has deeply shaken the market and cryptocurrency industry in Nigeria	63 (38.2)	74 (44.8)	18 (10.9)	10 (6.1)
7	There has been a massive downturn at the rate at which people trade cryptocurrencies in Nigeria due to the ban	40 (24.2)	74 (44.8)	31 (18.8)	20 (12.1)

Source: Field Survey, 2022

From the analysis in Table 4.6, 81.3% of the respondent stated that the ban has impoverished the teaming unemployed youths who trade on cryptocurrency as a means of livelihood. Also, 88.5% of the respondents believe the ban has prevented traders from buying cryptocurrencies

with their credit or debit cards issued by Nigeria banks. A total of 73.3% of the respondent agreed the cryptocurrency ban has led to liquidation of some financial technology startups in Nigeria.

Also, 76.4% of respondents confirmed that some financial technology companies have been forced to lay off their staff as a result of poor capital inflow due to the ban on cryptocurrency. Furthermore, 74.5% of the respondent claimed that the cryptocurrency ban can has prevented traders from receiving proceeds of sales from exchanges which facilitate the buying and selling of cryptocurrency.

Similarly, 83% of the respondents attested that the sudden ban of cryptocurrency trading and transactions has deeply shaken the market and cryptocurrency industry in Nigeria. While, 69% of the respondent agreed that there has been a massive downturn at the rate at which people trade cryptocurrencies in Nigeria due to the ban.

4.2.2 Presentation of Hypotheses

Table 4.7 Correlation Analysis

Cryptocurrency Ban in Nigeria		Crypto Ban	Trade Implications	Digital Currency	Banking Sector	Crypto Traders
Crypto Ban	Pearson Correlation	1	.083	.322**	.381**	-.088
	Sig. (2-tailed)		.287	.000	.000	.263
	N	165	165	165	165	165
Trade Implications	Pearson Correlation	.083	1	.365**	.379**	.407**
	Sig. (2-tailed)	.287		.000	.000	.000
	N	165	165	165	165	165
Digital Currency	Pearson Correlation	.322**	.365**	1	.385**	.180*
	Sig. (2-tailed)	.000	.000		.000	.021
	N	165	165	165	165	165
Banking Sector	Pearson Correlation	.381**	.379**	.385**	1	.334**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	165	165	165	165	165
Crypto Traders	Pearson Correlation	-.088	.407**	.180*	.334**	1
	Sig. (2-tailed)	.263	.000	.021	.000	
	N	165	165	165	165	165

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Source: Field Survey, 2022

Hypothesis One: There are no significant implications of cryptocurrency ban on domestic and international trade in Nigeria

The first objective of the study sought to establish the implications of cryptocurrency ban on domestic and international trade in Nigeria. To investigate this, Pearson Correlation was used with a two-tailed test of significance at $P < 0.01$ level. From Table 4.7, using default 5%, the p-value or Sig. value is 0.287 which is above the p-value and shows insignificance. Hence, the null hypothesis which states that there are no significant implications of cryptocurrency ban on domestic and international trade in Nigeria is accepted. The sample correlation is 0.083 (cryptocurrency ban on domestic and international trade in Nigeria at 0.083) which is positive and shows that the relationship is weak. It can however be concluded that there are no significant implications of cryptocurrency ban on domestic and international trade in Nigeria. This therefore answered the research first objective.

Hypothesis Two: There are no significant impact of cryptocurrency ban on the development of digital currency in Nigeria.

The second objective evaluates impact of cryptocurrency ban on the development of digital currency in Nigeria. To investigate this, Pearson Correlation was used with a two-tailed test of significance at $P < 0.01$ level. From Table 4.7, using default 5%, the p-value or Sig. value is 0.000 which is above the p-value and shows significance. Hence, the null hypothesis which states that there are no significant impacts of cryptocurrency ban on the development of digital currency in Nigeria is rejected. The sample correlation is 0.322** (cryptocurrency ban on the development of digital currency in Nigeria at 0.322) which is positive and shows that the relationship is moderate. The (**) means that Correlation is significant at the $p < 0.01$ level (2-tailed). It can however be concluded that impact of cryptocurrency ban on the

development of digital currency in Nigeria is significant. This therefore answered the research second objective.

Hypothesis Three: There are no significant implications of cryptocurrency ban on the Nigerian banking sector.

Objective Three assessed the implications of cryptocurrency ban on the Nigerian banking sector. To investigate this, Pearson Correlation was used with a two-tailed test of significance at $P < 0.01$ level. From Table 4.7, using default 5%, the p-value or Sig. value is 0.000 which is above the p-value and shows significance. Hence, the null hypothesis which states that There are no significant implications of cryptocurrency ban on the Nigerian banking sector is rejected. The sample correlation is 0.381** (cryptocurrency ban on the Nigerian banking sector at 0.381) which is positive and shows that the relationship is moderate. The (**) means that Correlation is significant at the $p < 0.01$ level (2-tailed) It can however be concluded that There are significant implications of cryptocurrency ban on the Nigerian banking sector. This therefore answered the research third objective.

Hypothesis Four: There are no significant effects of cryptocurrency ban on Nigerian digital currency traders.

The fourth objective of the study sought to establish the implications of cryptocurrency ban in Nigerian on digital currency traders. To investigate this, Pearson Correlation was used with a two-tailed test of significance at $P < 0.01$ level. From Table 4.7, using default 5%, the p-value or Sig. value is 0.263 which is above the p-value and shows insignificance. Hence, the null hypothesis which states that there are no significant effects of cryptocurrency ban on Nigerian digital currency traders is accepted. The sample correlation is -0.088 (cryptocurrency ban in Nigerian on digital currency traders at -0.088) which is negative and shows that the relationship is weak. It can however be concluded that there are no significant

implications of cryptocurrency ban in Nigeria on the cryptocurrency traders. This therefore answered the research fourth objective.

4.3 Discussion of Findings

The purpose of the study is to examine blockchain and the effects of cryptocurrency ban in Nigeria. From the demographic data of the respondents, it reveals that more male participated in the study than females. This shows that the male respondents contributed more to the study than the females. The age distribution revealed that majority (64.8%) of the respondents are between 21-30years old, which depict that the respondents in this study are people in their youthful age. The section showing the work experience of the respondents revealed that the study participants have been working with their respective agency/institute between 1-5years. This shows that the questionnaire targeted specific professions for this study. The respondents majorly comprise of bankers, university lecturers, cryptocurrency traders and lawyers. This shows that the respondents are relevant to the selection criteria of this study and their responses can be agreed to be valid.

The gathered pertaining the motive behind the ban of cryptocurrencies in Nigeria revealed that anonymity, susceptibility to financial crimes, devoid of proper regulation, tax evasion and the probability of money laundering are the major reasons why cryptocurrencies are banned in Nigeria. However, the ban on cryptocurrencies cannot be attributed to terrorist financing in this study. The findings contradicts a previous research which revealed that in practice, Bitcoin is not truly anonymous, and cryptocurrency networks feature centralised 'chokepoints' in the form of exchanges. However, in the study, the utility of virtual currencies to terrorist's financing is limited, but further technological innovations could change this¹. Also, in a study titled cryptocurrency and state sovereignty which contradicts the previous findings showed that cryptocurrency has enabled a number of individuals,

criminal organizations, terrorist groups, and sovereign states to use Bitcoin, among other cryptocurrencies, to avoid detection, interference, or punishment from regulatory agencies to commit actions such as money laundering, trafficking narcotics, purchasing weapons, and bypassing international sanctions².

The first objective of this study was set to examine the implications of cryptocurrency ban on domestic and international trade in Nigeria. The results showed that the cryptocurrency ban has reduced virtual buying and selling of goods and services within Nigeria. The ban on cryptocurrency has also affected crypto collateral as regards loan and debt payment in Nigeria and reduced the wave of virtual importation of goods in Nigeria. Similarly, the ban has placed a limit on international online shopping which reduced online global presence of companies in Nigeria and has not led to a favorable exchange rate in Nigeria.

To further establish the implications of cryptocurrency ban on domestic and international trade in Nigeria, Pearson Correlation was used with a two-tailed test of significance at $P < 0.01$ level. Using default 5%, the p-value or Sig. value is 0.287 which is above the p-value and shows insignificance. The sample correlation is 0.083 (cryptocurrency ban on domestic and international trade in Nigeria at 0.083) which is positive and shows that the relationship is weak. Hence, the null hypothesis which states that there are no significant implications of cryptocurrency ban on domestic and international trade in Nigeria is accepted. Previous study titled effects and implication of crypto currency ban in Nigerian economy confirmed that the ban on cryptocurrency has made it difficult for people to own crypto currencies since they cannot buy or sell cryptos³. In another study, the findings revealed that blockchain technology has its fair share of advantages beyond the financial sector: a protected assemblage of essential data and information, such as scientific bills, health records, vote records, etc⁴. Similarly, in a study titled cryptocurrency and the Nigerian economy, the

authors established that there is a low positive relationship between cryptocurrency and the level of economic development in Nigeria⁵.

The second objective revealed impact of cryptocurrency ban on the development of digital currency in Nigeria. The study expresses that the ban on cryptocurrency has not led to an increase in the value of Naira. However, the ban on cryptocurrency plays a significant role in the introduction of e-Naira yet, there is no increase in the purchase and usage of e-Naira. Ineffective performance of e-Naira can be linked to cryptocurrency ban in Nigeria. Nevertheless, cryptocurrency ban in Nigeria does not give hope/prospects to further development of digital currencies in Nigeria. To further examine the impact of cryptocurrency ban on the development of digital currency in Nigeria, Pearson Correlation was used with a two-tailed test of significance at $P < 0.01$ level. Using default 5%, the p-value or Sig. value is 0.000 which is above the p-value and shows significance. The sample correlation is 0.322** (cryptocurrency ban on the development of digital currency in Nigeria at 0.322) which is positive and shows that the relationship is moderate. The (**) means that Correlation is significant at the $p < 0.01$ level (2-tailed). Hence, the null hypothesis which states that there are no significant impacts of cryptocurrency ban on the development of digital currency in Nigeria is rejected. It can however be concluded that impact of cryptocurrency ban on the development of digital currency in Nigeria is significant.

These study's findings correspond with the findings of previous research which noted that the ban on cryptocurrency may lead to continuous depreciation in the value of Naira and loss of money by Nigerians³. However, a study presented the opportunities and risks of implementing the E-Naira. The opportunities which include improved monetary policy transmission, convenience, efficient payments, increase in the level of financial inclusion, and higher remittance inflow. While, identified risks include digital illiteracy, increased

propensity for cyber-attacks, data theft, and the changing role of banks in a full-fledged CBDC economy⁶.

Objective three assessed the implications of cryptocurrency ban on the Nigerian banking sector. The emergence of cryptocurrency has reduced banks monitoring and control of fund. However, there need for cyber security in bank operations. The ban led to a drawback on financial inclusion and has reduced capital inflow of commercial banks in Nigeria. Additionally, there are sanctions directed to banks that do not adhere to CBN directives on cryptocurrency ban in Nigeria. However, the cryptocurrency ban in Nigeria did not reduce the level of illegal transactions.

To investigate this further, Pearson Correlation was used with a two-tailed test of significance at $P < 0.01$ level. Using default 5%, the p-value or Sig. value is 0.000 which is above the p-value and shows significance. The sample correlation is 0.381** (cryptocurrency ban on the Nigerian banking sector at 0.381) which is positive and shows that the relationship is moderate. The (**) means that Correlation is significant at the $p < 0.01$ level (2-tailed). Hence, the null hypothesis which states that There are no significant implications of cryptocurrency ban on the Nigerian banking sector is rejected. It can however be concluded that there are significant implications of cryptocurrency ban on the Nigerian banking sector. This therefore answered the research third objective. This study aligns with prior findings on legal and financial implication of adopting cryptocurrency in Nigeria. Studies discovered cryptocurrency enhances financial inclusion making international remittances cheaper and faster; and it facilitates international trade, particularly at the micro-level⁷. The financial consequences have been discovered to include an absence of central authority, tax evasion, terrorism financing, money laundering, and cyber blackmail.

The fourth objective evaluated the effects of cryptocurrency ban on Nigerian digital currency traders. The ban on cryptocurrencies in Nigeria impoverished the teeming unemployed youths who trade on cryptocurrency as a means of livelihood. The ban also prevented traders from buying and selling cryptocurrencies with their credit or debit cards issued by Nigeria banks. This has led to a massive downturn at the rate at which people trade cryptocurrencies. The ban on cryptocurrencies forced some financial technology startups into liquidation while other financial technology companies were forced to lay off their staff because of poor capital inflow due to the ban on cryptocurrency.

To further investigate this, Pearson Correlation was used with a two-tailed test of significance at $P < 0.01$ level. Using default 5%, the p-value or Sig. value is 0.263 which is above the p-value and shows insignificance. The sample correlation is -0.088 (cryptocurrency ban in Nigerian on digital currency traders at -0.088) which is negative and shows that the relationship is weak. Hence, the null hypothesis which states that there are no significant effects of cryptocurrency ban on Nigerian digital currency traders is accepted. It can however be concluded that there are no significant implications of cryptocurrency ban in Nigeria on the cryptocurrency traders. Similarly, the sudden ban of cryptocurrency trading and transactions has deeply shaken the market and cryptocurrency industry in Nigeria. Also, in a study the author revealed that the ban of cryptocurrency trading caused emotional shock and trauma to crypto traders and prevents traders from buying crypto currencies with their credit or debit cards issued by Nigeria banks³.

Endnotes

- ¹ T. Keatinge, D. Carlisle, & F. Keen, *Virtual Currencies and Terrorist Financing: Assessing the Risks and Evaluating Responses*. Policy Department for Citizens' Rights and Constitutional Affairs, 2018.
- ² R. L. Frebowitz, *Cryptocurrency and State Sovereignty*. A PHD theses Presented at the Naval Postgraduate School Monterey, California, 2018.
- ³ E. C. Okpalaojiego, *Effects and Implications of Crypto Currency Ban on Nigerian Economy*. **Academic Journal of Current Research**, 8(4), 2021, 23-33.
- ⁴ Ahannaya, C. G., Oshinowo, A. D., Sanni, A. S., Arogundade, J. A. & Ogunwole, O. J. *The Effect of Cryptocurrencies on Nigeria Economy*. **IEEE-SEM**, 9(3), 2021, 8-14.
- ⁵ T. T. Siyanbola, S. I. Audu, A. R. Adediran, & A. Agbaje, *Cryptocurrency and the Nigerian Economy*. **African Journal of Accounting and Financial Research**, 4(3), 2021, 180-193.
- ⁶ P. K. Ozili, *Central Bank Digital Currency in Nigeria: opportunities and risks*. **SSRN Electronic Journal**, 2022, 1-12.
- ⁷ G. E. Oyedokun, & M. Awosika, *Adopting cryptocurrencies in Nigeria: Legal and financial Implications*. In Section on Business Law of Corporate Governance and Compliance Committee, 2022.

Chapter Five

Conclusion

This chapter presents a summary of findings, conclusion, recommendations, contributions to knowledge, and suggested areas for further studies.

5.1 Summary of Findings

Since the evolution of technology, the world has embraced online transactions and cryptocurrencies is one of the innovations that facilitate those transactions. The study examined blockchain technology and cryptocurrency ban in Nigeria. Specifically, the study set out to determine the motive behind the ban, the implications of the ban on the banking sector, impacts of the ban on domestic and international trade, impacts on the digital traders, and effects of the ban on the development of digital currencies in Nigeria.

From the interpretation of analyses of data collected and findings of the study, the following can be summed up as the major findings of this study:

The gathered pertaining the motive behind the ban of cryptocurrencies in Nigeria revealed the ban on cryptocurrency was majorly due to its anonymity, susceptibility to financial crimes, devoid of proper regulation, and tax evasion. Also, the probability of money laundering is another major reason why cryptocurrencies were banned in Nigeria. However, the ban on cryptocurrencies cannot be attributed to terrorist financing in this study.

The report from this study shows that the cryptocurrency ban has reduced virtual buying and selling of goods and services within Nigeria. The ban on cryptocurrency has also affected crypto collateral as regards loan and debt payment in Nigeria and reduced the wave of virtual importation of goods in Nigeria. Similarly, the ban has placed a limit on international online

shopping which reduced online global presence of companies in Nigeria and has not led to a favorable exchange rate in Nigeria.

The study expresses that the ban on cryptocurrency has not led to an increase in the value of Naira. However, the ban on cryptocurrency plays a significant role in the introduction of e-Naira. Yet, there is no increase in the purchase and usage of e-Naira. Ineffective performance of e-Naira can be linked to cryptocurrency ban in Nigeria. Nevertheless, cryptocurrency ban in Nigeria does not give hope/prospects to further development of digital currencies in Nigeria.

In assessing the implications of cryptocurrency ban on the Nigerian banking sector. It was revealed that the emergence of cryptocurrency has reduced banks monitoring and control of fund. However, there need for cyber security in bank operations. The ban led to a drawback on financial inclusion and has reduced capital inflow of commercial banks in Nigeria. Additionally, there are sanctions directed to banks that do not adhere to CBN directives on cryptocurrency ban in Nigeria. However, the cryptocurrency ban in Nigeria did not reduce the level of illegal transactions and has not led to an increase in the value of Naira likewise, there is no increase in the purchase and usage of e-Naira. Also, there have been major drawbacks on financial inclusion and a reduction in capital inflow of commercial banks in Nigeria since the ban on cryptocurrency.

It was further revealed in this study that ban on cryptocurrencies in Nigeria impoverished the teaming unemployed youths who trade on cryptocurrency as a means of livelihood. The ban also the prevented traders from buying and selling cryptocurrencies with their credit or debit cards issued by Nigeria banks. This has led to a massive downturn at the rate at which people trade cryptocurrencies. The ban on cryptocurrencies forced some financial technology

startups into liquidation while other financial technology companies were forced to lay off their staff because of poor capital inflow due to the ban on cryptocurrency.

5.2 Conclusion

From the findings, the study concludes even though the cryptocurrency ban has reduced virtual buying and selling of goods and services within Nigeria to some extent and has placed a limit on international online shopping which reduced online global presence of companies in Nigeria, the level of these implication no momentous implications of cryptocurrency ban on domestic and international trade in Nigeria is accepted. Hence, it can be concluded that there are no significant consequences of cryptocurrency ban on domestic and international trade in Nigeria.

Regarding the impact of cryptocurrency ban on the development of digital currency in Nigeria. The study revealed that cryptocurrency ban in Nigeria has not led to an increase in the value of Naira. However, the ban on cryptocurrency to a great extent plays a significant role in the introduction of e-Naira. Therefore, it is concluded that the impacts of cryptocurrency ban on the development of digital currency in Nigeria is positive and significant.

Also, in studying the implications of cryptocurrency ban on the Nigerian banking sector, the data gathered confirmed that emergence of cryptocurrency has reduced banks monitoring and control of fund as it reduced the number of customers who visit banks to perform banking operations. The cryptocurrency ban also increased need for cyber security in bank operations. Additionally, there are sanctions directed to banks that do not adhere to CBN directives on cryptocurrency ban in Nigeria. It can however be concluded that there are significant implications of cryptocurrency ban on the Nigerian banking sector

Lastly, the ban on cryptocurrency has negatively affected the operations of digital traders who depend on cryptocurrency trading as a means of livelihood. As many startup companies were forced into liquidation and staff were laid off because of poor capital inflow due to the cryptocurrency ban. The ban also prevented traders from buying and selling cryptocurrencies with their credit or debit cards issued by Nigeria banks. Hence, the study concludes that the ban on cryptocurrencies has a negative impact on Nigerian digital currency traders.

5.3 Recommendations

Based on the findings of this study, the following recommendations are made:

1. The government should ensure that there are systems in place to detect risks such as money laundering involved in virtual currencies are adequately mitigated.
2. The findings revealed that cryptocurrencies in Nigeria just like most countries are devoid of proper regulation. The Central Bank of Nigeria should consider developing regulatory policies on the usage and trading of cryptocurrencies instead of an outright ban.
3. The emergence of cryptocurrency has necessitated the need for cyber security in bank operations. This is a wake-up call for banks and other financial institutions to strengthen their cyber security network against cyber fraud.
4. Relevant tax authorities should address the matters of digital transactions and how such transactions will be taxed to curb tax evasions.
5. The government should ensure that the laws guiding cryptocurrency should be modified to the interest of digital traders and to protect the economy as a whole.
6. The study findings revealed that the ban has impoverished the teeming unemployed youths who trade on cryptocurrency as a means of livelihood and has led to

liquidation of some financial technology startups in Nigeria. Rather than an outright ban which plunged traders into poverty and losses, the Central Bank should explore the potentials of cryptocurrencies and how it can be used to boost the Nigerian economy.

7. There should be strict laws and punishments against the use of cryptocurrency as a means for money laundering and tax evasion.

5.4 Contribution to Knowledge

The findings of this study are useful to government, policy maker, financial institutions and crypto traders as it will inform them on the need to develop appropriate processes and procedures to carry out the operations of the cryptocurrency.

The results of this research work are vital to future researchers since it serves as reference for future research through relevant literature that facilitate further related studies. This study contributes to existing empirical knowledge on blockchain and the impact of cryptocurrency ban in Nigeria.

5.5 Suggested Area of Further Research

The study set to examine the impact of the cryptocurrency ban in Nigeria. Further studies may consider the following:

1. The study was conducted in Nigeria; further studies can be carried out in other countries similar to Nigeria.
2. Further studies can consider the used of both primary and secondary sources of data.
3. This study examined the impact of crypocurrency ban on the banking sector in Nigeria, however, further studies can be conducted on other sectors of the country such as manufacturing, agriculture, and others.

4. Further studies may attempt to explore the relationship between the characteristics and operations of digital currencies and E-naira.

DO NOT COPY. LEAD CITY UNIVERSITY, NIGERIA.

Bibliography

Chapters in Books

- Kahler, M. *Collective Action and Clandestine Networks: The Case of al Qaeda*. In *Networked Politics: Agency, Power, and Governance*, ed. Miles Kahler, 2009, 103-126. Ithaca, NY: Cornell University Press.
- Oyedokun, G. E. & Awosika, M. *Adopting cryptocurrencies in Nigeria: Legal and financial implications*. In Section on Business Law of Corporate Governance and Compliance Committee, 2022.
- Swan, M. *Blockchain Temporality: Smart Contract Time Specifiability with Blocktime.*” In *Rule Technologies: Research, Tools, and Applications*. RuleML 2016. Lecture Notes in Computer Science, 9718, 2016, eds. Jose Julio Alferes,
- Tarrow, S. G. *Contentious Politics*. In *The Wiley-Blackwell Encyclopedia of Social and Political Movements*, eds. David A. Snow, Donatella della Porta, Bert Klandermans, and Doug McAdam, 2013, 266–270. Malden, MA: Wiley-Blackwell.
- Yermack, D. *Is Bitcoin a Real Currency? An Economic Appraisal*. In *Handbook of Digital Currency: Bitcoin, Innovation, Financial Instruments, and Big Data*, ed. David Lee Kuo Chuen, 2015, 31–43. San Diego: Elsevier

Conference Proceedings

- Alferes, J. J., Bertossi, L., Governatori, G., Fodor, P. & Roman, D. (eds), *Rule Technologies: Research, Tools, and Applications*. 10th International Symposium, RuleML Stony Brook, NY, USA. Proceedings, Switzerland: Springer. Lecture notes in computer science, 9718, 2016, 167-183.
- Ateniese, G., Magri, B., Venturi, D. & Andrade, E. "Redactable Blockchain – or Rewriting History in Bitcoin and Friends", 2nd IEEE European Symposium on Security and Privacy—EuroS&P. 2017.
- Bian, Y., Lin, X. & Xiong, Y. *The Progress of Cryptocurrency Assets Investment from Financial Perspectives: Risks, Comparisons and Impacts*. Proceedings of the 2021 3rd International Conference on Economic Management and Cultural Industry (ICEMCI 2021), 33-38.
- Christin, N. *Traveling the Silk Road: A Measurement Analysis of a Large Anonymous Online Marketplace*. In Proceedings of the 22nd International Conference on World Wide Web. Rio de Janeiro, Brazil: ACM, 2013, 214.
- Florencio, D. & Herley, C. *Phishing and Money Mules*. International Workshop on Information Forensics and Security (WIFS). 2010.
- Kaushal, P. K., Bagga, A. & Sobti, R. *Evolution of Bitcoin and security risk in Bitcoin wallets*, in Proceeding of the International Conference on Computer, Communications and Electronics. (Comptelix), 2017, 172–177.

- Kroll, J. A., Davey, I. C. & Felten, E. W. *The Economics of Bitcoin Mining, or Bitcoin in the Presence of Adversaries*, in Proceeding of the 12th Workshop on the Economics of Information Security, 2013, 1-21.
- Lagarde, C. *Central Banking and Fintech—A Brave New World?* Speech at Bank of England Conference, London, Available online: <https://www.imf.org/en/News/Articles/2017/09/28/sp092917-central-banking-and-fintech-a-brave-new-world> 2017.
- Monamo, P. M., Marivate, V. & Twala, B. *A Multifaceted Approach to Bitcoin Fraud Detection: Global and Local Outliers*, in Proceeding of the International Conference Machine Learning Applications, 2016, 188-194.
- Odiboh, O., Ben-Enukora, C., Oresanya, T., Yartey, D. & Aiyelabola, A. *Awareness on Digital Security and E-Business in Nigeria*. In International Conference on Education, Social Sciences and Humanities, Dubai, UAE, 2017, 1402–1408.
- Rathod, J., Gupta, A. & Patel, D. *Using Blockchain Technology for Continuing Medical Education Credits System*, Seventh International Conference on Software Defined Systems (SDS), 2020, 214-219.
- Sengupta, B., Bag, S., Ruj, S. & Sakurai, K. *Retricoin: Bitcoin Based on Compact Proofs of Retrievability*, in Proceeding of the International Conference on Distributed Computing and Networking (ICDCN), Art. no. 14, 2016.
- Sharma, K. & Jain, D. *Consensus Algorithms in Blockchain Technology: A Survey*. 10th International Conference on Computing Communication and Networking Technologies, 2019, 1-7.
- Staples, M., Chen, S., Falamanski, S., Ponomarev, A., Rimba, P., Tran, A. P., Weber, I., Xu, X. & Zhu, J. *Risks and Opportunities for Systems Using Blockchain and Smart Contracts*. Canberra. Commonwealth Scientific and Industrial Research Organization. 2017.
- UNCTAD, *Information Economy Report 2017: Digitalization, Trade and Development*. New York: United Nations Conference on Trade and Development, 2017.
- Williams, R. C. *Prospects for Blockchain-Based Settlement Frameworks as a Resolution to the Threat of Derisking to Caribbean Financial Systems*. United Nations Economic Commission for Latin America and the Caribbean. 2017.

Journals

- Acho, Y. *Crypto-Currency and the Nigerian Economy*. **Journal of International Relations Security and Economic Studies (JIRSES)**, 1(3), 2021, 43-58.
- Ahannaya, C. G., Oshinowo, A. D., Sanni, A. S., Arogundade, J. A. & Ogunwole, O. J. *The Effect of Cryptocurrencies on Nigeria Economy*. **International European Extended Enablement in Science, Engineering & Management**, 9(3), 2021, 8-14.

- Allegret, J. P., Raymond, H. & Rharrabti, H. *The Impact of the Eurozone Crisis on European Banks Stocks, Contagion or Interdependence*. **European Research Studies Journal**, 19(1), 2016, 129-147.
- Alves, P. R. L. *Dynamic characteristic of Bitcoin cryptocurrency in the reconstruction scheme*. **Chaos, Solitons & Fractals**, 134, 2020, 10969
- Ammous, S. *Can cryptocurrencies fulfil the functions of money?* **The Quarterly Review of Economics and Finance**, 70, 2018, 38–51.
- Angel, J. J. & McCabe, D. M. *The Ethics of Payments: Paper, Plastic, or Bitcoin?* **Journal of Business Ethics**, 132(3), 2015, 603-611.
- Arslan-Ayaydin, O. D., Barnum, D., Karan, M. B. & Ozdemir, A. H. *How is Moral Hazard Related to Financing R&D and Innovation?* **European Research Studies Journal**, 17(4), 2014, 111-132.
- Bayem, S. *Dynamic Common Law and Technological Change: The classification of bitcoin*. **Washington and Lee Law Review Online**, 2014, 71(2) 1-14.
- Birch, D, G. *Who will Make Money? Tokens and the '5Cs' of Future Currency*. **Journal of Payments Strategy & Systems**, 12(2), 2018, 111-121.
- Bohme, R. et al., *Bitcoin: Economics, Technology, and Governance*. **The Journal of Economic Perspectives**, 29(2), 2015, 231.
- Brantly, A. *Financing terror bit by bit*. **CTC Sentinel Journal**, 7(10), 2014.
- Brown, S. *Cryptocurrency and Criminality: The Bitcoin Opportunity*, **The Police Journal: Theory, Practice and Principles**, 89(4), 2016, 336.
- Bryans, D. *Bitcoin and Money Laundering: Mining for an Effective Solution*, **Indiana Law Journal**, 89(1), 2014, 472.
- Campbell-Verduyn, M. *Bitcoin and Beyond: Cryptocurrencies, Blockchains and Global Governance*. New York: Routledge, 2018.
- Cohen, B. J. *The International Monetary System: Diffusion and Ambiguity*. **International Affairs**, 84(3), 2008, 455-470.
- Collomb, A. & Sok, K. *Blockchain / Distributed Ledger Technology (DLT) What Impact on Financial Sector?* **Digiworld Economic Journal**, 103, 2016, 93.
- DeFranco, J., Rhemann, M. & Giordano, J. *The Emerging Neurobioeconomy: Implications for National Security*. **Health Security**, 18(4), 2020, 267–277.
- Deniz, P. & Stengos, T. *Cryptocurrency Returns Before and After the Introduction of Bitcoin Futures*. **Journal of Risk and Financial Management**, 13(6), 2020, 116.

- DeVries, P. D. *An Analysis of Cryptocurrency, Bitcoin, and the Future*. **International Journal of Business Management and Commerce**, 1(2), 2016, 1-9.
- Dierksmeier, C. & Seele, P. *Cryptocurrencies and Business Ethics*, **Journal of Business Ethics**, 152(1), 2018, 1-14.
- Dimitrii, N. *Bitcoin Mining as a Contest*. **Ledger**, 2, 2017, 31–37.
- Dourado, E. & Brito, J. *Cryptocurrency*. **The New Palgrave Dictionary of Economics**, 2014, 1-10.
- Ekong, U. M. & Ekong, C. N. *Digital currency and financial inclusion in Nigeria: Lessons for development*. **Journal of Internet and Digital Economics**, 2(1), 2022, 46-67.
- Enitan, G. P. & Akadiri, S. S. *Cryptocurrency and the Nigerian Economy*. **Journal of Economics & Management Research**, 1(3), 2020, 1-2.
- Ersoy, A., Bryson, J. & van Bueren, E. *Unlocking Values Through Infrastructure Interdependencies*. **Infrastructure Asset Management**, 7(2), 2020, 134-143.
- Esoimeme, E. E. *The Money Laundering Risks and Vulnerabilities Associated with MMM Nigeria*. **Journal of Money Laundering Control**, 21(1), 2018, 112-119.
- Fakunmoju, S. K., Banmore, O., Gbadamosi, A. & Okunbanjo, O. I. *Effect of Cryptocurrency Trading and Monetary Corrupt Practices on Nigerian Economic Performance*. **Binus Business Review**, 13(1), 2022, 31–40.
- Foley, S., Karlsen, J. R. & Putniņš, T. J. *Sex, Drugs, and Bitcoin: How Much Illegal Activity is Financed through Cryptocurrencies?* **The Review of Financial Studies**, 32(5), 2019, 1798-1853.
- Freeman, A. *Bitcoin: The ultimate offshore bank account?* **Economics and Liberty**. 2011.
- Gautam, V. *Cryptocurrencies: Are Disruptive Financial Innovations Here?* **Modern Economy**, 6, 2015, 816-832.
- Ghaemi Asl, M., Rashidi, M. M. & Hosseini Ebrahim Abad, S. A. *Emerging digital economy companies and leading cryptocurrencies: Insights from blockchain-based technology companies*. **Journal of Enterprise Information Management**, 34(5), 2021, 1506-1550.
- Grinberg, R. *Bitcoin: An Innovative Alternative Digital Currency*. **Hastings Sci & Tech. LJ**, 2012, 181-206.
- Haber, S. & Stornetta, W. S. *How to Time-Stamp a Digital Document*. **Journal of Cryptology**, 3(2), 1991, 99-111.
- Halaburda, H., Sarvary, M. & Haeringer, G. *Beyond Bitcoin: The Economics of Cryptocurrencies and Blockchain Technologies (Chapter 6: Smart Contracts and Blockchain)*. **SSRN Electronic Journal**. <https://doi.org/10.2139/ssrn.3894110>

- Harwick, C. *Cryptocurrency and the Problem of Intermediation*. **The Independent Review**, 20(4), 2016, 569-588.
- Howden, E. *The Crypto-Currency Conundrum: Regulating and Uncertain Future*. **Emory International Law Review**, 2014, 742-762.
- Huang, A. *Reaching within Silk Road: The Need for a New Subpoena Power that Targets Illegal Bitcoin Transactions*. **Boston College Law Review**, 56(5), 2015, 2097, 2119–2122, 2120, 2123–2124.
- Iyoyojie, L. D., Edeh, O. J., Erinne, U. & Umezurike, C. *Cryptocurrency: The Search for a Legal Framework as a World Currency*. **International Journal of Business and Law Research**, 9(3), 2021, 15-25.
- Karame, G. O., Androulaki, E., Roeschlin, M., Gervais, A. & Capkun, S. *Misbehavior in Bitcoin: A study of double-spending and accountability*. **ACM Transactions on Information and System Security**, 18(1), 2015, 1-40.
- Kasiyanto, S. *Bitcoin's Potential for Going Mainstream*. **Journal of Payments Strategy & Systems**, 10(1), 2016, 28-39.
- Katz, M. L. & Shapiro, C. *Systems Competition and Network Effects*. **Journal of Economic Perspectives**, 8(2), 1994, 93-115.
- Kiyotaki, N. & Wright, R. *A Search-Theoretic Approach to Monetary Economics*. **American Economic Review**, 83(1), 1993, 63-77.
- Kshetri, N. & Voas, J. *Do Crypto-Currencies Fuel Ransomware?* **IT Professional**, 19(5), 2017, 11-15.
- Lipkin, A. & Noll, F. *Smart Banknotes and Cryptobanknotes: Hybrid Banknotes for Central Bank Digital Currencies and Cryptocurrency Payments*. **SSRN Electronic Journal**, 2021.
- Ljubic, A. & McPhee, C. *Editorial: Blockchain*. **Technology Innovation Management Review**, 7(10), 2017.
- Mainelli, M. & Smith, M. *Sharing Ledgers for Sharing Economies: An Exploration of Mutual Distributed Ledgers (aka blockchain technology)*. **The Journal of Financial Perspectives**, 3(3), 2015, 38-69.
- Marian, O. *A Conceptual Framework for the Regulation of Cryptocurrencies*. **University of Chicago Law Review**, 82(53), 2015, 55–68.
- Murali, J. *A New Coinage: Can Bitcoin, the Global Online Digital Currency, be the Precursor of a New Monetary System?* **Economic and Political Weekly**, 48(38), 2013, 77-78.
- Nakamoto, S. *Bitcoin: A peer-to-peer electronic cash system*. **Decentralized Business Review**, 2008, 1–9.

- Noori, N. A. *Peer-to-Peer Electronic Accounting System*. **SSRN Electronic Journal**, 2018, 1-12.
- Okpalaojiego, E. C. *Effects and Implications of Crypto Currency Ban on Nigerian economy*. **Academic Journal of Current Research**, 8(4), 2021, 23-33.
- Omohundro, S. *Cryptocurrencies, Smart Contracts, and Artificial Intelligence*. **AI Matters**, 1(2), 2013, 19-21.
- Onyeke, C. E. *Crypto-currency and the Nigerian Economy: Problems and Prospects*. **IAA Journal of Social Sciences**, 6(1), 2020, 152-162.
- Ooi, S. K., Ooi, C.A., Yeap, J. A. & Goh, T. H. *Embracing Bitcoin: Users' perceived security and trust*. **Quality & Quantity**, 2020, 1-19.
- Owen, T. *Disruptive Power: The Crisis of the State in the Digital Age*. **International Affairs**, 92(1), 2016, 463– 465.
- Ozili, P. K. *Central Bank Digital Currency in Nigeria: Opportunities and Risks*. **SSRN Electronic Journal**, 2022, 1-12.
- Papp, J. *A Medium of Exchange for an Internet Age: How to Regulate Bitcoin for the Growth of E-Commerce*, **Journal of Technology Law and Policy**, 15, 2014.
- Piazza, F. *Bitcoin in the Dark Web: A Shadow over Banking Secrecy and a Call for Global Response*. **Southern California Interdisciplinary Law Journal**, 26(3), 2017, 545.
- Plassaras, N. *Regulating Digital Currencies: Bringing Bitcoin within the Reach of the IMF*. **Chicago Journal of International Law**, 14(1), 2013, 396-406.
- Puthal, D., Malik, N., Mohanty, S. P., Kougianos, E. & Das, G. *Everything you Wanted to Know About the Blockchain: Its Promise, Components, Processes, and Problems*. **IEEE Consumer Electronics Magazine**, 7(4), 2018, 6-14.
- Rognone, L., Hyde, S. & Zhang, S. S. *News Sentiment in the Cryptocurrency Market: An Empirical Comparison with Forex*. **International Review of Financial Analysis**, 69, 2020, 101462.
- Rundell, J. *David Roberts: Images of Aesthetic Modernity*. **Thesis Eleven**, 152(1), 2019, 76-86.
- Rupeika-Apoga, R. & Nedovis Uraev, R. *The Foreign Exchange Exposure of Non-Financial Companies in Eurozone: Myth or Reality?* **International Journal of Economics and Business Administration**, 3(1), 2015, 54-66.
- Salawu K. M. & Moloi T. (2018). Benefits of Legislating Crypto-currencies: Perception of Nigerian Professional Accountants. **Journal of Accounting and Financial Studies**, 22(6).

- Salawu, M. K. & Moloi, T. *Benefits of Legislating Cryptocurrencies: Perception of Nigerian Professional Accountants*. **Academy of Accounting and Financial Studies Journal**, 22(6), 2018, 1-17.
- Samuelson, P. A. *The Pure Theory of Public Expenditure*. **The Review of Economics and Statistics**, 36(4), 1954, 387-389.
- Siyanbola, T. T., Audu, S. I., Adediran, A. R. & Agbaje, A. *Cryptocurrency and the Nigerian Economy*. **African Journal of Accounting and Financial Research**, 4(3), 2021, 180-193.
- Siyanbola, T. T., Audu, S. I., Adediran, A. R., Agbaje, A. *Cryptocurrency and the Nigerian Economy*. **African Journal of Accounting and Financial Research**, 4(3), (2021), 180-193.
- Swan, M. *Anticipating the Economic Benefits of Blockchain*. **Technology Innovation Management Review**, 7(10), 2017.
- Telley, C. *A Coin for the Tsar: The Two Disruptive Sides of Cryptocurrency*. **Small Wars Journal**, Available online: <http://smallwarsjournal.com/jrnl/art/a-coin-for-the-tsar-the-two-disruptive-sides-of-cryptocurrency> 2018
- Tillemann, T. *Break Corruption with Bitcoin's Backbone*. **Foreign Policy**, 2(227), 2018, 27-28.
- Turpin, J. *Bitcoin: The Economic Case for a Global, Virtual Currency Operating in an Unexplored Legal Framework*. **Indiana Journal of Global Legal Studies**, 21(1), 2014, 364, 352–353.
- Vlasov, A. V. *The Evolution of E-money*. **European Research Studies**, 20(1), 2017, 215-224.
- Wang, S. & Zhu, X. *Evaluation of Potential Cryptocurrency Development Ability in Terrorist Financing*. **Policing**, 2021, 2329- 2340.
- Wu, R., Ishfaq, K., Hussain, S., Asmi, F., Siddiquei, A. N. & Anwar, M. A. *Investigating e-Retailers' Intentions to Adopt Cryptocurrency Considering the Mediation of Technostress and Technology Involvement*. **Sustainability**, 2022, 14(641), 1-21.
- Zimba, A., Wang, Z., Mulenga, M. & Odongo, N. H. *Crypto Mining Attacks in Information Systems: An Emerging Threat to Cyber Security*. **Journal of Computer Information Systems**, 60(4), 2020, 297-308.

Periodical Articles

- Auer, R., Farag, M., Lewrick, U., Orazem, L. & Zoss, M. *Banking in the shadow of Bitcoin? The institutional adoption of cryptocurrencies*. BIS Working Papers, 1013, 2022, 1-21.
- Bech, M. & Garratt, R. *Central Bank Cryptocurrencies*, Bank for International Settlements (BIS) Quarterly Review, 2017,

- BIS, *Cryptocurrencies: Looking beyond the hype*. BIS Annual Economic Report, Bank for International Settlements. 2018.
- Bossert, T. P. *It's Official: North Korea Is behind WannaCry*, Wall Street Journal, 2017.
- Champagne, P. *The Books of Satoshi: The collected Writings of Bitcoin Creator Satoshi Nakamoto*. E53 Publishing LLC, 2014.
- Chiu, J. & Koeppl, T. V. *The Economics of Cryptocurrencies – Bitcoin and Beyond*. Staff Working Papers, 2019, 1-59.
- Fernandes-VillaVerde, J. & Sanches, J. *On the Economies of Digital Currencies*. Working Paper, 18-7, 2018, Federal Reserve bank of Philadelphia.
- Hemmings, J. *Reconstructing Order: The Geopolitical Risks in China's Digital Silk Road*. *Asia Policy*, 15(1), 2020, 5–21.
- Houben, R. & Snyers, A. *Cryptocurrencies and blockchain: Legal context and implications for financial crime, money laundering and tax evasion*. Policy Department for Economic, Scientific and Quality of Life Policies, 2020.
- Huerta de Soto, J. *Money, Bank Credit, and Economic Cycles*. Chelyabinsk. 2008.
- Ingham, G. *Babylonian Madness: On the Historical and Sociological Origins of Money*. *What is Money?* 1, 2000, 16-41.
- J. B. R. Shirakawa & U. Korwatanasakul, *Cryptocurrency Regulations: Institutions and Financial Openness*. ADBI Working Paper Series, 978, 2019, 1-17.
- Keatinge, T., Carlisle, D. & Keen, F. *Virtual Currencies and Terrorist Financing: Assessing the Risks and Evaluating Responses*. Policy department for citizens' rights and constitutional affairs, 2018.
- Kharif, O. *Bitcoin 2.0 shows technology evolving beyond use as money*. Bloomberg. 2014
- Le Maire, B. Bruno. *Facebook's Libra is a Threat to National Sovereignty*. Financial Times, 2019.
- Liebenau, J. & Elaluf-Calderwood, S. M. *Blockchain Innovation Beyond Bitcoin and Banking*, 2016.
- Metz, C. *Tech and banking giants ditch bitcoin for their own blockchains*. Wired. 2015
- Pham, T. & Lee, S. Anomaly detection in Bitcoin network using unsupervised learning methods. 2016.
- Pieters, G. *Does Bitcoin Reveal New Information About Exchange Rates and Financial Integration?* Globalization and Monetary Policy Institute, Working. Paper No. 292. Dallas, TX: Federal Reserve Bank of Dallas, 2016a.

Rothbard, M. *State and Money: How the Government took Possession of the Monetary System of Society*. Chelyabinsk, 2003.

Shin, L. MasterCard, Bain Capital Ventures, New York Life invest in Bitcoin company digital currency group. Forbes. 2015

Starnes, S., Michael, K. & Alex, J. A. *Risking by Banks in Emerging Markets: Effects and Responses for Trade*. EM Compass Note 24, IFC. 2016.

United Nations Security Council, 1718 Sanctions Committee (DPRK) Panel of Experts, *Report of the Panel of Experts Established Pursuant to Resolution 1874*, New York: United Nations Security Council, 2009.

World Economic Forum (Wef), *Building Block (chains) For a Better Planet*. 2018.

Yeow, A. *Global Nodes Distribution*. Bitnodes, 2020.

Zambre, D. & Shah, A. *Analysis of Bitcoin Network Dataset for Fraud*. Stanford CS 224W Project Final Report-Group 30, 2013, 1-13.

Textbooks

Baylis, J., Smith, S. & Owens, P. *Globalization and its Precursors: The Globalization of World Politics*. London: University Press, 2019.

Böhme, R., Brenner, M., Moore, T. & Smith, M. eds. *Financial Cryptography and Data Security*. FC 2014. Lecture Notes in Computer Science, vol 8438. Berlin: Springer.

Brett, C. & Mitsoff, T. *Bitcoin Decoded*. San Bernardino, CA: Propellerhead Marketing Group, 2014, 86

Campbell-Verduyn, M. & M. Goguen, M. *The mutual constitution of technology and global governance – Bitcoin, blockchains, and the international anti-money-laundering regime*. Campbell-Verduyn M. (eds) *Bitcoin and Beyond: Cryptocurrencies, Blockchains and Global Governance*. New York: Routledge, 2018.

Dunne, T. & Schmidt, *The Globalization of World Politics: An Introduction to International Relations*. London: Oxford University Press, 2014.

Gupta, S. et al., *Digital Revolutions in Public Finance*. Washington, DC: International Monetary Fund, 2017, 173–196.

Mccrudden, C. *Buying Social Justice: Equality, Government Procurement, and Legal Change*. New York: Oxford University Press, 2007.

Oyedokun, G. E. *Research Methodology for management and Social Science*, Lagos, Nigeria: Aaron and Hur Publishing. 2020.

Revoredo, T. *Cryptocurrencies in the International Scenario: What is the position of Central Banks, Governments and authorities about cryptocurrencies?* (1st ed.). Tatiana Revoredo, 2018.

Vashisht, V. *Corruption, No More Cash, Corruption and Economic Development*. London: Taylor & Francis Group, 2017.

Vigna, P. & Casey, M. J. *The Age of Cryptocurrency: How Bitcoin and the Blockchain Are Challenging the Global Economic Order* (Reprint ed.). Picador. 2016.

Werbach, K. *The Blockchain and the New Architecture of Trust*. Cambridge, MA: The MIT Press, 2018.

Theses / Dissertations

Carstens, A. Money in a digital age: 10 thoughts. *Speech at Lee Kuan Yew School of Public Policy*, Singapore, 15 November, 2018

Frebowitz, R. L. Cryptocurrency and state sovereignty. A PHD theses presented at the Naval Postgraduate School Monterey, California, 2018

Karen, S. *How Blockchain Is Affecting Globalization*. A Bachelor's Degree Project Submitted to Malmo University, 2019

Lewenberg, Y., Bachrach, Y., Somplolinsky, Y., Zohar, A. & Rosenschein, J. S. *Bitcoin Mining Pools: A Cooperative Game Theoretic Analysis*. In Proceedings of the 14th International Conference on Autonomous Agents and Multiagent Systems (AAMAS 2015), Istanbul, Turkey, 2015, 919- 927

Mignano, J. R. *Follow the (Electronic) Money: How Bitcoin and Blockchain Technology are "Shaking the System"*. Dissertations and Theses Paper presented at Portland State University, 2020.

Websites

Abdullateef, O. A. *Cryptocurrencies in Nigeria: A Legal Analysis*. Available Online: <https://ssrn.com/abstract=3106296> 2021.

Adam, B. *Enabling Blockchain Innovation with Pegged Sidechains*. Available online: <http://www.blockstream.com/sidechains.pdf>. 2014.

Adedipe, A. A. & Atanda, O. *Nigeria Prohibition of Crypto Currency Transactions by the Central Bank of Nigeria*. Available Online <https://pavestoneslegal.com/prohibition-of-cryptocurrency-transactions-by-the-central-bank-of-nigeria/> 2021.

Agu, C. J. *Impact of cryptocurrency on Africa's economy*. 2020. https://www.researchgate.net/publication/347089003_Impact_of_cryptocurrency_on_Africa's_economy

- Ameer, R. *What is cryptocurrency? Everything you need to know?* Available at: <https://blockgeeks.com/guides/what-is-cryptocurrency/> 2021
- Andreas, A. *Introduction to Digital Currencies MOOC 2.0*. University of Nicosia, Available online: <http://mooc.universityofnicosia-online.com/> 2014
- Andreas, A. *The Potential of Blockchain Technology*. Youtube. Available online: <https://www.youtube.com/watch?v=r8JopZWlvtw>
- Antony, L. *Orisi White Paper*. Github. Available online: <https://github.com/orisi/wiki/wiki/Orisi-White-Paper> 2014
- Baker, P. *Blockchain Adoption will Add \$120bn To World Economy*. Crypto Briefing. Available online: <https://cryptobriefing.com/blockchain-adoption-study/> 2018.
- Baratt, H. & Shanti Kumar, S. *Method of Sampling from a Population*. Health Knowledge. Available online: <http://ww.healthknowledge.org.uk/public-health-textbook/research-methods/1a-epedimology/method-of-sampling-population> 2021.
- Bartoletti, M., Carta, S., Cimoli, T. & Saia, R. *Dissecting Ponzi Schemes on Ethereum: Identification, Analysis and Impact*. Available online: <https://arxiv.org>. 2017.
- Blockchain, B. *Total-bitcoins*. Blockchain.Com. <https://www.blockchain.com/charts/total-bitcoins> 2015.
- Capozzalo, O. *Putin Adviser Says 'CryptoRuble' Will Circumvent Sanctions, Government Remains Divided*. Cointelegraph, Available online: <https://cointelegraph.com/news/putin-adviser-says-cryptoruble-will-circumvent-sanctions-government-remains-divided> 2018.
- Central Bank of Nigeria (CBN), *Circular to Banks and other Financial Institutions on Virtual Currency Operations in Nigeria*. available at: <https://www.cbn.gov.ng/out/2017/fprd/aml%20january%202017%20circular%20to%20fis%20on%20virtual%20currency.pdf> (2017)
- Central Bank of Nigeria (CBN), Press Release: Virtual Currencies not Legal Tender in Nigeria. <https://www.cbn.gov.ng/Out/2018/CCD/Press%20Release%20on%20Virtual%20Currencies.pdf> (2018)
- Central Bank of Nigeria, *Response to regulatory directive on cryptocurrencies*. 2021. <https://www.cbn.gov.ng/Out/2021/CCD/CBN%20Press%20Release%20Crypto%2007022021.pdf>
- Coindesk, *Sidechains White Paper*. Available online: <http://www.coindesk.com/sidechains-white-paper-ecosystem-reboot/> 2015.
- Committee on Payments and Market Infrastructures, *Digital Currencies*. Basel, Switzerland: Bank for International Settlements, Available online: <https://www.bis.org/cpmi/publ/d137.pdf>. 2015

- Crypto-Currency Market Capitalizations. *Types of cryptocurrency*. Available online: <https://coinmarketcap.com/all/views/all/> 2018
- De Filippi, P. *Bitcoin: A Regulatory Nightmare to a Libertarian Dream*. **Internet Policy Review**. Available online: <https://policyreview.info/articles/analysis/bitcoin-regulatory-nightmare-libertarian-dream> 2019.
- Drug Enforcement Administration, *National Drug Threat Assessment, DEA-DCT-DIR040-17*. Washington, DC: Drug Enforcement Administration, Available online: https://www.dea.gov/docs/DIR-040-17_2017-NDTA.pdf, 2017, 130.
- Earlytemple, *Earlytemple*, Available online: <https://earlytemple.com:8181/index.jsp#protocol> 2015.
- Europol. *Why Cash is Still King?* Available Online: www.europol.europa.eu/sites/default/files/publications/europolcik.pdf 2015
- Extended Learning Institute (ELI) at Northern Virginia Community College (NOVA). *Reading: The Internet | Introduction to Computer Applications and Concepts*. Lumenlearning.Com, 2019. Available online: <https://courses.lumenlearning.com/computerapps/chapter/reading-the-internet/> 2020.
- Ezekwesili, O. *Implication of CBN Crypto Currency Ban*. The Cable, Available online: <https://www.thecable.ng/how-nigerias-economy-can-benefit-from-cryptocurrency-trading/amp> 2021
- Fanusie, Y. *Terrorist Networks Eye Bitcoin as Cryptocurrency's Price Rises*, The Cipher Brief (blog), <https://www.thecipherbrief.com/terrorist-networks-eye-bitcoin-cryptocurrencys-price-rises> 2017.
- Fanusie, Y. *The New Frontier in Terror Fundraising: Bitcoin*. The Cipher Brief (blog), Available online: https://www.thecipherbrief.com/column_article/the-new-frontier-in-terror-fundraising-bitcoin 2016.
- Farell, R. *An Analysis of the Cryptocurrency Industry*. Available online: http://repository.upenn.edu/cgi/viewcontent.cgi?article=1133&context=wharton_research_scholars 2015
- FATF. *Virtual Currencies, Key Definitions and Potential AML/CFT Risks* Available online: <https://www.fatfgafi.org/media/fatf/documents/reports/Virtual-currency-keydefinitions-and-otential-aml-cftrisks.pdf> 2014.
- FATF. *Virtual Currencies: key Definitions and Potential AML/CFT Risks*. Available online: <http://fatfgafi.org/media/fatf/documents/reports/Virtual-currencykey-definitions-and-potential-amlcft-risks.pdf> 2015
- Hoskinson, C. *The Future Will Be Decentralized*. TEDx. Available online: <https://www.youtube.com/watch?v=97ufCT6lQcY> 2015.

- Iredale, G. *History of Blockchain Technology: A Detailed Guide*. 101 Blockchains. Available online: <https://101blockchains.com/history-of-blockchain-timeline/>
- Kedem, S. *Nigeria Launches eNaira – Africa’s First Digital Currency*. *Nigeria Finance and Services*. Available at, <https://www.mondaq.com/nigeria/fin-tech/1108724/enaira-the-future-of-digital-currency-in-nigeria-2021>.
- Kossow, N. & Dykes, V. *Bitcoin, Blockchain and Corruption: An Overview*. Available online: <https://knowledgehub.transparency.org/helpdesk/bitcoin-blockchain-and-corruption-anoverview>
- Liao, S. *Inside Russia’s Love-Hate Relationship with Bitcoin*, The Verge, Available online: <https://www.theverge.com/2017/10/31/16387042/russia-putin-bitcoin-regulation-ethereum-blockchain-technology> 2017.
- Macdonald, H. *Proprietary data analysis: Suicidality and antidepressants*. *BMJ*, 2009. b4232. Available online: <https://doi.org/10.1136/sbmj.b4232>
- Manheim, D. et al., *Are Terrorists Using Cryptocurrencies?* *Foreign Affairs*, Available online: <https://www.foreignaffairs.com/articles/2017-04-21/are-terrorists-using-cryptocurrencies> 2017.
- Mazikana, T. A. *The impact of cryptocurrencies in Zimbabwe: An analysis of Bitcoin*. **Economics Project**, 2018. Retrieved from https://www.researchgate.net/publication/333413415_The_Impact_of_Cryptocurrencies_in_Zimbabwe_An_Analysis_of_Bitcoins
- Mendel, W. & McCabe, P. eds., *SOF Role in Combating Transnational Organized Crime*, MacDill Air Force Base, FL: Joint Special Operations University Press. Available online: http://cco.ndu.edu/Portals/96/Documents/books/JSOU%20SOF/JSOU16_MendelMcCabe_CTOC_final.pdf, 2016, 101.
- Morgan, R. *BitCongress White Paper*. BitCongress. Available online: <http://bitcongress.org/BitCongressWhitepaper.pdf>. 2014
- Murphy, E., Murphy, M. & Seitzinger, M. *Bitcoin: Questions, Answers, and Analysis of Legal Issues*, CRS Report No. R43339. Washington, DC: Congressional Research Service, 2016. <https://fas.org/sgp/crs/misc/R43339> 2016.
- Namecoin, Namecoin, Available online: <http://namecoin.info/> 2015.
- Namzul, N. *Blockchain Economy; Impact and Future*. LtEconomyBlog. <http://www.lteconomy.it/blog/2018/12/09/blockchain-economy-impact-and-future/> 2018.
- NDIC. *Press Release*. Available online: <https://ndic.gov.ng/ndic-urgescapcaution-on-adoption-of-cryptocurrencies/> 2019.

- Odumosu, D. O. *Digital currency in Nigeria: The next big thing*. Lonsdale Solicitors, 2021, 1-15. Available online: <https://ssrn.com/abstract=3888207>
- Oludimu, T. 5 areas the Nigerian economy can benefit from blockchain technology. <https://techpointAfrica> 2018.
- Omri, M. *Are Cryptocurrencies Super Tax Havens?* Available Online: <http://repository.law.umich.edu/mlrf/vol112/iss1/22013>
- Price, R. *Digital currency Ethereum is cratering because of a 50 million dollar hack*. 2016. Available at: <https://www.businessinsider.com.au/dao-hacked-ethereum-crashing-in-value-tens-of-millions-allegedly-stolen-2016-6>
- PYMNTS.com, *World Bank, IMF Debut 'Quasi-Cryptocurrency*. PYMNTS.com. Available online: <https://www.google.com/amp/s/www.pymnts.com/blockchain/2019/world-bank-imf-private-blockchain-quasi-cryptocurrency/amp/> / 2019
- Rosic, A., Baggetta, M. & Baggetta, M. *What Is Hyperledger? The Most Comprehensive Step-by-Step Guide*. Blockgeeks. Available online: <https://blockgeeks.com/guides/hyperledger/> 2020.
- Sanders, L. *Bitcoin: Islamic State's Online Currency Venture*, DW, Available online: <http://www.dw.com/en/bitcoin-islamic-states-online-currency-venture/a-18724856> 2015.
- Schwarz, M. *Legal Status of Crypto in Nigeria*. Available online: <http://nigerianlawtoday.com/legalstatus-of-crypto-in-nigeria/> 2018.
- Shostak, F. *Myth of Electronic Money*. Available online: <http://www.libertarium.ru/94532> 2016.
- Szabo, P. *Blockchain Adoption and the World Economy*. Crypto Briefing, Available online: <http://szabo.best.vwh.net/idea.html> 2014
- Szubin, A. *National Terrorist Financing Risk Assessment*. Washington, DC: Department of the Treasury, 2015. <https://www.treasury.gov/resource-center/terrorist-illicit-finance/Documents/National%20Terrorist%20Financing%20Risk%20Assessment%20%E2%80%93%202015.pdf>, 2015, 56– 57
- Timi-Koleolu, S. & Aroh, E. *eNaira – The Future of Digital Currency in Nigeria?* Available at, <https://african.business/2021/10/finance-services/nigeria-gears-up-for-enaira/> 2021.
- Tucker, P. *Russia, N. Korea Eye Bitcoin for Money Laundering, Putting it on a Crash Course with Regulators*. Defense One, Available online: <http://www.defenseone.com/technology/2017/12/russia-n-korea-eye-bitcoin-money-laundering-putting-it-crash-course-regulators/144598/> 2017.

- Ugkk, S. R. & Geodezie, U. *KaPor - NajĀĀstějĀĀie otĀĀzky*. Available online: <http://www.katasterportal.sk/kapor/faq.do> 2015.
- Upwork Global Inc. *Upwork: The World's Work Marketplace for Freelancing*. Upwork. Available online: <https://www.upwork.com/> 2016.
- Vitalik, B. *Ethereum White Paper*. Available online: <http://buyxpr.com/build/pdfs/EthereumWhitePaper.pdf> 2014.
- Willet, J. R., Hidskes, M., Johnston, D., Gross, R. & Schneider, M. *The Master: Protocol/Mastercoin Complete Specification*. Available online: <https://github.com/mastercoinMSC/spec> 2014.
- Williams-Grut, T. *Deutsche Bank, HSBC and Five Other Big Banks are Collaborating on a Blockchain Project*. Available online: <http://www.businessinsider.com/deutsche-bank-hsbc-kbc-natixisrabobank-socit-gnrale-andunicredit-work-on-digitaltradechain-dtc-20171?r=UK&IR=T> 2017.
- World Bank. *Annual Remittances Data*. Available online: <https://www.worldbank.org/en/topic/labormarkets/brief/migration-and-remittances> 2019.
- World Bank. *World Bank Financial Inclusion: Overview*. Available online: <http://www.worldbank.org/en/topic/financialinclusion/overview> 2016
- Yoni, A., Buterin, V., Hakim, L. & Rosenfeld, M. *Colored Coins Whitepaper*. Bitcoin X. Available online: <https://tinyurl.com/coloredcoinwhitepaper> 2014.
- Zenk, M. *Bitcoin for Bombs*. Council on Foreign Relations (blog), <https://www.cfr.org/blog/bitcoin-bombs> 2017.

Appendix

DATASET NAME DataSet1 WINDOW=FRONT.

DATASET ACTIVATE DataSet1.

FREQUENCIES VARIABLES=A1 A2 A3 A4 B1 B2 B3 B4 B5 B6 C1 C2 C3 C4 C5 C6 C7
D1 D2 D3 D4 D5 D6 E1 E2 E3

E4 E5 E6 F1 F2 F3 F4 F5 F6 F7

/PERCENTILES=100.0

/STATISTICS=STDDEV MEAN

/ORDER=ANALYSIS.

Frequency Table

Gender

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Female	44	26.7	26.7	26.7
Male	121	73.3	73.3	100.0
Total	165	100.0	100.0	

Age Group

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 20 & below	12	7.3	7.3	7.3
21-30	107	64.8	64.8	72.1
31-40	34	20.6	20.6	92.7

41-50	4	2.4	2.4	95.2
50 & above	8	4.8	4.8	100.0
Total	165	100.0	100.0	

Work Experience

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1-5	97	58.8	58.8	58.8
6-10	40	24.2	24.2	83.0
11-15	15	9.1	9.1	92.1
16-20	6	3.6	3.6	95.8
21 & above	7	4.2	4.2	100.0
Total	165	100.0	100.0	

Occupation

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Banker	43	26.1	26.1	26.1
Cryptocurrency Trader	91	55.2	55.2	81.2
University Lecturer	29	17.6	17.6	98.8
Others	2	1.2	1.2	100.0

Total	165	100.0	100.0
-------	-----	-------	-------

The cryptocurrency ban in Nigeria is due to its anonymity

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	27	16.4	16.4	16.4
Agree	57	34.5	34.5	50.9
Disagree	45	27.3	27.3	78.2
Strongly Disagree	36	21.8	21.8	100.0
Total	165	100.0	100.0	

The usage of cryptocurrency is prone to financial crimes in Nigeria

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	40	24.2	24.2	24.2
Agree	51	30.9	30.9	55.2
Disagree	39	23.6	23.6	78.8
Strongly Disagree	35	21.2	21.2	100.0
Total	165	100.0	100.0	

Cryptocurrency is used as a leverage for money laundering

	Frequency	Percent	Valid Percent	Cumulative Percent
--	-----------	---------	---------------	--------------------

Valid Strongly Agree	33	20.0	20.0	20.0
Agree	55	33.3	33.3	53.3
Disagree	38	23.0	23.0	76.4
Strongly Disagree	39	23.6	23.6	100.0
Total	165	100.0	100.0	

Cryptocurrency is being used to finance terrorist activities

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	26	15.8	15.8	15.8
Agree	41	24.8	24.8	40.6
Disagree	50	30.3	30.3	70.9
Strongly Disagree	48	29.1	29.1	100.0
Total	165	100.0	100.0	

The use of cryptocurrency has become a medium for tax evasion

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	39	23.6	23.6	23.6
Agree	57	34.5	34.5	58.2
Disagree	36	21.8	21.8	80.0

Strongly Disagree	33	20.0	20.0	100.0
Total	165	100.0	100.0	

Cryptocurrencies are devoid of proper regulation

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	33	20.0	20.0	20.0
Agree	61	37.0	37.0	57.0
Disagree	40	24.2	24.2	81.2
Strongly Disagree	31	18.8	18.8	100.0
Total	165	100.0	100.0	

The cryptocurrency ban has reduced virtual buying and selling of goods within Nigeria

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	22	13.3	13.3	13.3
Agree	81	49.1	49.1	62.4
Disagree	42	25.5	25.5	87.9
Strongly Disagree	20	12.1	12.1	100.0
Total	165	100.0	100.0	

**The cryptocurrency ban has reduced virtual payment of service within
Nigeria**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	36	21.8	21.8	21.8
Agree	65	39.4	39.4	61.2
Disagree	47	28.5	28.5	89.7
Strongly Disagree	17	10.3	10.3	100.0
Total	165	100.0	100.0	

**The cryptocurrency ban has affected crypto collateral as regards loan
and debt payment in Nigeria**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	32	19.4	19.4	19.4
Agree	73	44.2	44.2	63.6
Disagree	42	25.5	25.5	89.1
Strongly Disagree	18	10.9	10.9	100.0
Total	165	100.0	100.0	

**The cryptocurrency ban has reduced the wave of virtual importation of
goods in Nigeria**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	39	23.6	23.6	23.6
Agree	67	40.6	40.6	64.2
Disagree	38	23.0	23.0	87.3
Strongly Disagree	21	12.7	12.7	100.0
Total	165	100.0	100.0	

The ban on cryptocurrency in Nigeria has placed a limit on international online shopping

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	34	20.6	20.6	20.6
Agree	63	38.2	38.2	58.8
Disagree	51	30.9	30.9	89.7
Strongly Disagree	17	10.3	10.3	100.0
Total	165	100.0	100.0	

The ban on cryptocurrency in Nigeria has reduced online global presence of companies in Nigeria

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	30	18.2	18.2	18.2

Agree	72	43.6	43.6	61.8
Disagree	43	26.1	26.1	87.9
Strongly Disagree	20	12.1	12.1	100.0
Total	165	100.0	100.0	

The cryptocurrency ban has led to a favourable exchange rate in Nigeria

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	18	10.9	10.9	10.9
Agree	40	24.2	24.2	35.2
Disagree	55	33.3	33.3	68.5
Strongly Disagree	52	31.5	31.5	100.0
Total	165	100.0	100.0	

The cryptocurrency ban in Nigeria has led to increase in the value of Naira

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	12	7.3	7.3	7.3
Agree	41	24.8	24.8	32.1
Disagree	42	25.5	25.5	57.6
Strongly Disagree	70	42.4	42.4	100.0

Total	165	100.0	100.0
-------	-----	-------	-------

**The cryptocurrency ban in Nigeria plays a significant role in the
Introduction of e-Naira**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	43	26.1	26.1	26.1
Agree	65	39.4	39.4	65.5
Disagree	33	20.0	20.0	85.5
Strongly Disagree	24	14.5	14.5	100.0
Total	165	100.0	100.0	

**The cryptocurrency ban in Nigeria has led to increase in the purchase
and usage of e-Naira**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	22	13.3	13.3	13.3
Agree	45	27.3	27.3	40.6
Disagree	57	34.5	34.5	75.2
Strongly Disagree	41	24.8	24.8	100.0
Total	165	100.0	100.0	

**The ineffective performance of e-Naira can be linked to cryptocurrency
ban in Nigeria**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	30	18.2	18.2	18.2
Agree	65	39.4	39.4	57.6
Disagree	41	24.8	24.8	82.4
Strongly Disagree	29	17.6	17.6	100.0
Total	165	100.0	100.0	

**The cryptocurrency ban in Nigeria gives hope/prospects to further
development of digital currencies in Nigeria**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	17	10.3	10.3	10.3
Agree	36	21.8	21.8	32.1
Disagree	67	40.6	40.6	72.7
Strongly Disagree	45	27.3	27.3	100.0
Total	165	100.0	100.0	

The CBN are likely to soon lift the ban on cryptocurrency in Nigeria

	Frequency	Percent	Valid Percent	Cumulative Percent
--	-----------	---------	------------------	-----------------------

Valid Strongly Agree	42	25.5	25.5	25.5
Agree	62	37.6	37.6	63.0
Disagree	46	27.9	27.9	90.9
Strongly Disagree	15	9.1	9.1	100.0
Total	165	100.0	100.0	

The emergence cryptocurrency has necessitated the need for cyber security in bank operations

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	25	15.2	15.2	15.2
Agree	86	52.1	52.1	67.3
Disagree	32	19.4	19.4	86.7
Strongly Disagree	22	13.3	13.3	100.0
Total	165	100.0	100.0	

The emergence cryptocurrency reduced banks monitoring and control of funds

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	21	12.7	12.7	12.7
Agree	65	39.4	39.4	52.1

Disagree	56	33.9	33.9	86.1
Strongly Disagree	23	13.9	13.9	100.0
Total	165	100.0	100.0	

The cryptocurrency ban is a drawback for financial inclusion and cash flow

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	38	23.0	23.0	23.0
Agree	68	41.2	41.2	64.2
Disagree	43	26.1	26.1	90.3
Strongly Disagree	16	9.7	9.7	100.0
Total	165	100.0	100.0	

The cryptocurrency has reduced capital inflow of commercial banks in Nigeria

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	23	13.9	13.9	13.9
Agree	61	37.0	37.0	50.9
Disagree	64	38.8	38.8	89.7
Strongly Disagree	17	10.3	10.3	100.0

Total	165	100.0	100.0
-------	-----	-------	-------

There are sanctions directed to banks that do not adhere to CBN directives on cryptocurrency ban in Nigeria

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	59	35.8	35.8	35.8
Agree	69	41.8	41.8	77.6
Disagree	25	15.2	15.2	92.7
Strongly Disagree	12	7.3	7.3	100.0
Total	165	100.0	100.0	

The cryptocurrency ban in Nigeria has reduced the level of illegal transactions

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	26	15.8	15.8	15.8
Agree	48	29.1	29.1	44.8
Disagree	50	30.3	30.3	75.2
Strongly Disagree	41	24.8	24.8	100.0
Total	165	100.0	100.0	

**The ban has impoverished the teaming unemployed youths who trade on
cryptocurrency as a means of livelihood**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	59	35.8	35.8	35.8
Agree	75	45.5	45.5	81.2
Disagree	20	12.1	12.1	93.3
Strongly Disagree	11	6.7	6.7	100.0
Total	165	100.0	100.0	

**The ban has prevented traders from buying cryptocurrencies with their
credit or debit cards issued by Nigeria banks**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	84	50.9	50.9	50.9
Agree	62	37.6	37.6	88.5
Disagree	13	7.9	7.9	96.4
Strongly Disagree	6	3.6	3.6	100.0
Total	165	100.0	100.0	

**The cryptocurrency ban has led to liquidation of some financial
technology startups in Nigeria**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	50	30.3	30.3	30.3
Agree	71	43.0	43.0	73.3
Disagree	38	23.0	23.0	96.4
Strongly Disagree	6	3.6	3.6	100.0
Total	165	100.0	100.0	

Some financial technology companies have been forced to lay off their staff as a result of poor capital inflow due to the ban on cryptocurrency

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	47	28.5	28.5	28.5
Agree	79	47.9	47.9	76.4
Disagree	30	18.2	18.2	94.5
Strongly Disagree	9	5.5	5.5	100.0
Total	165	100.0	100.0	

The cryptocurrency ban can has prevented traders from receiving proceeds of sales from exchanges which facilitate the buying and selling of cryptocurrency

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	40	24.2	24.2	24.2

Agree	83	50.3	50.3	74.5
Disagree	33	20.0	20.0	94.5
Strongly Disagree	9	5.5	5.5	100.0
Total	165	100.0	100.0	

The sudden ban of cryptocurrency trading and transactions has deeply shaken the market and cryptocurrency industry in Nigeria

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	63	38.2	38.2	38.2
Agree	74	44.8	44.8	83.0
Disagree	18	10.9	10.9	93.9
Strongly Disagree	10	6.1	6.1	100.0
Total	165	100.0	100.0	

There has been a massive downturn at the rate at which people trade cryptocurrencies in Nigeria due to the ban

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Agree	40	24.2	24.2	24.2
Agree	74	44.8	44.8	69.1
Disagree	31	18.8	18.8	87.9

Strongly Disagree	20	12.1	12.1	100.0
Total	165	100.0	100.0	

Test of Hypotheses

DATASET NAME DataSet1 WINDOW=FRONT.

COMPUTE VAR1=B1 + B2 + B3 + B4 + B5 + B6.

VARIABLE LABELS VAR1 'VAR1'.

EXECUTE.

COMPUTE OBJ1=C1 + C2 + C3 + C4 + C5 + C6 + C7.

VARIABLE LABELS OBJ1 'OBJ1'.

EXECUTE.

COMPUTE OBJ2=D1 + D2 + D3 + D4 + D5 + D6.

VARIABLE LABELS OBJ2 'OBJ2'.

EXECUTE.

COMPUTE OBJ3=E1 + E2 + E3 + E4 + E5 + E6.

VARIABLE LABELS OBJ3 'OBJ3'.

EXECUTE.

COMPUTE OBJ4=F1 + F2 + F3 + F4 + F5 + F6 + F7.

VARIABLE LABELS OBJ4 'OBJ4'.

EXECUTE.

Hypothesis One

Correlations

		VAR1	OBJ1
VAR 1	Pearson Correlation	1	.083
	Sig. (2-tailed)		.287
	N	165	165
OBJ1	Pearson Correlation	.083	1
	Sig. (2-tailed)	.287	
	N	165	165

Hypothesis Two

Correlations

		VAR1	OBJ2
VAR 1	Pearson Correlation	1	.322**
	Sig. (2-tailed)		.000
	N	165	165
OBJ2	Pearson Correlation	.322**	1
	Sig. (2-tailed)	.000	
	N	165	165

** . Correlation is significant at the 0.01 level (2-tailed).

Hypothesis Three

Correlations

		VAR1	OBJ3
VAR 1	Pearson Correlation	1	.381**
	Sig. (2-tailed)		.000
	N	165	165
OBJ3	Pearson Correlation	.381**	1
	Sig. (2-tailed)	.000	
	N	165	165

** . Correlation is significant at the 0.01 level (2-tailed).

Hypothesis Four

Correlations

		VAR1	OBJ4
VAR 1	Pearson Correlation	1	-.088
	Sig. (2-tailed)		.263
	N	165	165

OBJ4	Pearson		
	Correlation	-.088	1
	Sig. (2-tailed)	.263	
	N	165	165

Joint Hypothesis

Correlations

		VAR1	OBJ1	OBJ2	OBJ3	OBJ4
VAR 1	Pearson					
	Correlation	1	.083	.322**	.381**	-.088
	Sig. (2-tailed)		.287	.000	.000	.263
	N	165	165	165	165	165
OBJ1	Pearson					
	Correlation	.083	1	.365**	.379**	.407**
	Sig. (2-tailed)	.287		.000	.000	.000
	N	165	165	165	165	165
OBJ2	Pearson					
	Correlation	.322**	.365**	1	.385**	.180*
	Sig. (2-tailed)	.000	.000		.000	.021
	N	165	165	165	165	165
OBJ3	Pearson					
	Correlation	.381**	.379**	.385**	1	.334**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	165	165	165	165	165

OBJ4 Pearson Correlation					1
	-.088	.407**	.180*	.334**	
Sig. (2-tailed)	.263	.000	.021	.000	
N	165	165	165	165	165

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Regression

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.490 ^a	.240	.221	4.44841	.240	12.644	4	160	.000

a. Predictors: (Constant), OBJ4, OBJ2, OBJ3, OBJ1

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1000.852	4	250.213	12.644	.000 ^b
	Residual	3166.141	160	19.788		
	Total	4166.994	164			

a. Dependent Variable: VAR1

b. Predictors: (Constant), OBJ4, OBJ2, OBJ3, OBJ1

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	
	B	Std. Error	Beta			
1	(Constant)	6.642	1.988		3.341	.001
	OBJ1	-.060	.092	-.053	-.650	.517
	OBJ2	.329	.109	.233	3.021	.003
	OBJ3	.600	.122	.390	4.909	.000
	OBJ4	-.305	.099	-.239	-3.089	.002

a. Dependent Variable: VAR1

Questionnaire

Research Topic: Blockchain Technology and Cryptocurrency Ban in Nigeria: Issues and Implications for Digital Currency Traders

This questionnaire is for data collection in respect of the above research topic as part of my MSc. thesis in the Department of Politics and International Relations, Lead City University, Ibadan. Kindly supply the information required in the space provided. All information supplied shall be treated strictly with the principles of confidentiality.

Section A

Demographic Data

- Gender:** Female () Male ()
- Age group:** 20 & below () 21-30 () 31-40 () 41-50 () 50 & above ()
- Years of work experience**
1-5 yrs () 6-10 yrs () 11-15yrs () 16-20 yrs () 20 & above []
- Which of these categories do you belong?**
Banker () Cryptocurrency Trader () University Lecturer () Others.....

Section B

Research Questions

Motives behind cryptocurrency ban in Nigeria

	Statements	SA	A	D	SD
1	The cryptocurrency ban in Nigeria is due to its anonymity				
2	The usage of cryptocurrency is prone to financial crimes in Nigeria				
3	Cryptocurrency is used as a leverage for money laundering				
4	Cryptocurrency is being used to finance terrorist activities				

5	The use of cryptocurrency has become a medium for tax evasion				
6	Cryptocurrencies are devoid of proper regulation				

Implications of cryptocurrency ban on domestic and international trade in Nigeria

	Statements	SA	A	D	SD
	Domestic Trade				
1	The cryptocurrency ban has reduced virtual buying and selling of goods within Nigeria				
2	The cryptocurrency ban has reduced virtual payment of service within Nigeria				
3	The cryptocurrency ban has affected crypto collateral as regards loan and debt payment in Nigeria				
	International Trade				
4	The cryptocurrency ban has reduced the wave of virtual importation of goods in Nigeria				
5	The ban on cryptocurrency in Nigeria has placed a limit on international online shopping				
6	The ban on cryptocurrency in Nigeria has reduced online global presence of companies in Nigeria				
7	The cryptocurrency ban has led to a favourable exchange rate in Nigeria				

Impact of cryptocurrency ban on the development of digital currency in Nigeria

	Statements	SA	A	D	SD
1	The cryptocurrency ban in Nigeria has led to increase in the value of Naira				
2	The cryptocurrency ban in Nigeria played a significant role in the Introduction of e-Naira				
3	The cryptocurrency ban in Nigeria has led to				

	increase in the purchase and usage of eNaira				
4	The ineffective performance of eNaira can be linked to cryptocurrency ban in Nigeria				
5	The cryptocurrency ban in Nigeria gives hope/prospects to further development of digital currencies in Nigeria				
6	The CBN are likely to soon lift the ban on cryptocurrency in Nigeria				

Impact of cryptocurrency ban on the Banking Sector

	Statements	SA	A	D	SD
1	The emergence cryptocurrency has necessitated the need for cyber security in bank operations				
2	The emergence cryptocurrency reduced banks monitoring and control of funds				
3	The cryptocurrency ban is a drawback for financial inclusion and cash flow				
4	The cryptocurrency has reduced capital inflow of commercial banks in Nigeria				
5	There are sanctions directed to banks that do not adhere to CBN directives on cryptocurrency ban in Nigeria				
6	The cryptocurrency ban in Nigeria has reduced the level of illegal transactions				

Cryptocurrency ban and Nigerian Digital Currency Traders

	Statements	SA	A	D	SD
1	The ban has impoverished the teeming unemployed youths who trade on cryptocurrency as a means of livelihood				
2	The ban has prevented traders from buying cryptocurrencies with their credit or debit cards issued by Nigeria banks				

3	The cryptocurrency ban has led to liquidation of some financial technology startups in Nigeria				
4	Some financial technology companies have been forced to lay off their staff as a result of poor capital inflow due to the ban on cryptocurrency				
5	The cryptocurrency ban can has prevented traders from receiving proceeds of sales from exchanges which facilitate the buying and selling of cryptocurrency				
6	The sudden ban of cryptocurrency trading and transactions has deeply shaken the market and cryptocurrency industry in Nigeria				
7	There has been a massive downturn at the rate at which people trade cryptocurrencies in Nigeria due to the ban				

DO NOT COPY. LEAD CITY UNIVERSITY, NIGERIA.

Biodata

A. Personal Data

Full Name: Abdul Malik Olalekan, OLADIPUPO

Address: No 191, Farinu Olore, Oroki, Oyo.

Email: oladipupoabdulmalik888@gmail.com

Phone No: 08124996256

Date of birth: 20 June 1998

Place of Birth: Oyo East, Oyo State

Nationality: Nigerian

Marital Status: Single

Next of Kin: Mrs. Oladipupo Folake Misirat

No 191, Farinu Olore, Oroki, Oyo

B. Educational Background

Educational Institutions Attended and Qualifications

- MSc. in International Relations – Lead University, Ibadan (in view)
- B Sc (Hons) International Relations – Lead University, Ibadan 2019
- S.S.C.E - Olivet Baptist High School, Oyo. 2015

C. Work Experience

- O.A.P on an online TV Station (OPATOLA TV)
- A Founding Member of Social Development and Accountability Project (SDAP)
- A Year I.T Experience in Osun State Governor Office. 2020

- A Columnist on Giant Blog. 2020
- A Columnist on Opera News. 2020
- A Columnist on 24/7 Blog. 2020
- Weekly Columnist on Spygist Blog 2022
- K.Y Pure Water Factory, Oroki, Oyo. 2014
- A Columnist on Marioreporta.com 2018
- Freelancer on Spygist Blog 2022
- Administrative Officer 11, Lead City University, 2020 till date.

D. Membership of Academic and Professional Bodies

- Member, Nigeria United Model Union Society
- Member, New Horizon Certificate on Internet and Computer Core Certificate
- Member, New Horizon Certificate on Customer Relationship Management
- Associate Member IPD-CRM , Institute of Personality Development and Customer Relationship Management

E. Publication

Oladipupo A.O & Amodu A.A (2022), Impact of Cryptocurrency Ban in the Development of Digital Currency in Nigeria, Renaissance University Journal of Management and Social Sciences,8(2).

Signature

Date

DO NOT COPY. LEAD CITY UNIVERSITY, NIGERIA.

University Compliance Certification

This is to certify that the thesis by Oladipupo Abdulmalik Olalekan with the matriculation number LCU/PG/002087 in the Department of Politics and International Relations, Faculty of Management and Social Sciences, Lead City University, Ibadan is in full compliance with the school approved University Format and Style.

.....

Signature

.....

Date

DO NOT COPY. LEAD CITY UNIVERSITY, NIGERIA.

Abdulmalik_Olalekan_OLADIPUPO.docx LCU LIBRARY

ORIGINALITY REPORT

11 %	10 %	1 %	4 %
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	policyreview.info Internet Source	2 %
2	www.scribd.com Internet Source	1 %
3	easychair.org Internet Source	1 %
4	apps.dtic.mil Internet Source	1 %
5	www.e-ir.info Internet Source	1 %
6	Submitted to Caleb University Student Paper	1 %
7	www.econstor.eu Internet Source	1 %
8	www.avekon.org Internet Source	1 %
9	Submitted to University of Kent at Canterbury Student Paper	1 %