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Consumer protection in Kenya in the age of decentralized virtual currency.

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Consumer protection in Kenya in the age of decentralized virtual currency.

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DECLARATION

I declare that this work has not been previously submitted and approved for the award of a degree by this or any other University. To the best of my knowledge and belief, the thesis contains no material previously published or written by another person except where due reference is made in the thesis itself.

Caroline Buyaki Kibwage

Signature …… …….

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Approval

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ABSTRACT

Virtual currencies are an outcome of technological progression and the evolution of money both in form and function. The increased popularity of virtual currencies is by dint of digital confluence of markets from all over the world. The uptake and adoption of decentralized virtual currencies in Kenya continue to grow and there are significant risks associated with their uptake and adoption.

This study makes the case for consumer protection regulation with respect to decentralized virtual currencies by employing a doctrinal approach. The study considers the regulatory provisions in Kenya, South Africa and Mexico and outline the risks posed to Kenyans by the regulatory gaps.

The key findings are that the consumer protection regulatory framework in Kenya is insufficient with respect to decentralized virtual currencies. The legal ambiguities expose Kenyan decentralised virtual currencies users to further risks. Further, consideration of South African and Mexican regimes showed the varied approaches to consumer protection in decentralized virtual currencies: South African takes a limited approach while Mexico, though it does not recognize it as legal tender, allows transactions with approved decentralized virtual currencies therefore offering a layer of consumer protection.

The main recommendation offered is the reviewing of existing consumer protection provisions and other secondary provisions in Kenya to encompass decentralised virtual currencies and ensuring extraterritorial cooperation to ensure judicial compatibility.

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2. *Lipisha Consortium ltd & Another v Safaricom Ltd* [2015] eKLR
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4. *Wiseman Talent Ventures Limited v Capital Markets Authority [2019] eKLR*
5. *Securities and Exchange Commission v Trendon T Shavers and Bitcoin Savings and Trust [2013] Eastern District of Texas No. 4:13-CV-416*
6. *United States v. Ulbricht*, 31 F. Supp. 3d 540 (S.D.N.Y. 2014)

TABLE OF ACRONYMS

AML	Anti-Money Laundering
CBK	Central Bank Of Kenya
CDBC	Central Bank Digital Currency
CDS	Central Depository Systems
CIS	Collective Investment Schemes
CMA	Capital Markets Authority
DAF	Digital Assets Framework
DAO	Decentralised Autonomous Organization
DAPP	Decentralised Applications
DFS	Digital Financial Services
DLT	Distributed Ledger Technology
E-Money	Electronic Money
FATF	Financial Action Task Force
FC	Fiat Currency
GDP	Gross Domestic Product
ICO	Initial Coin Offering
KYC	Know Your Customer
P2P	Peer-to-Peer
URL	Uniform Resource Locator
VC	Virtual Currency
VCF	Venture Capital Firms

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DEDICATION

I dedicate this thesis to my siblings Clive, Mike and Chris, and most importantly my parents, Isaac and Jane.

CHAPTER ONE: INTRODUCTION

1.1 Background

Money is used within different societies to facilitate trading activities. Money's legitimized source of value stems from a collective agreement by society of what is an acceptable tender of payments rather than the physical component of what is used[1]. A common consensus among economists is that money serves three main functions. First, it is a 'medium of exchange', facilitating exchange of goods and services. Second, it is a unit of account, allowing measurement and recordkeeping. Lastly, it is a 'store of value' facilitating transfer of purchasing power from now to the future.

The advancement of technology has influenced the change in the composition of the global economy[2] including the rise of virtual and digital currencies. Virtual currency (VC) is a form of digital currency that is unregulated and exists in electronic form[3]. Virtual currency has been defined as "*digital representation of value that is neither issued by a central bank or public authority nor necessarily attached to fiat currencies but is used as a means of exchange and can be transferred, stored or traded electronically*" by the European Banking Authority[4]. The Financial Action Task Force defined virtual currency as "*a digital representation of value that can be digitally traded and function as a medium of exchange, a store of value or a unit of account, but does not have legal tender status in any jurisdiction*"[5].

Virtual Currency has no intrinsic value, only what consumers are willing to pay for it[6] and it is not issued by a central authority. It is distinguished from electronic money such as pay pal,

[1] John Eatwell and others, *The New Palgrave: A Dictionary of Economics*, Macmillan, Stockton Press, Maruzen, 1987.

[2] Liu J, Kauffman RJ, Ma D, 'Competition, Cooperation, and Regulation: Understanding the Evolution of the Mobile Payments Technology Ecosystem' 14 *Electronic Commerce Research and Applications* (2015), 372.

[3] 'Jake Frankenfield: Virtual Currency' *Investopedia* <https://www.investopedia.com/terms/v/virtual-currency.asp> on 1 August 2020.

[4] 'European Central Bank: EBA Opinion on 'virtual currencies', *EBA* 2014.

[5] Financial Action Task Force, *Virtual Currencies - Key Definitions and Potential Anti Money Laundering and Counter Terrorism Financing Risks*, 4, 2014.

[6] Griffiths ME, 'Virtual Currency Businesses: An Analysis of the Evolving Regulatory Landscape' 16 30.

cashapp and Mpesa. Electronic money ensures a link between the funds, a financial institution and a legal foundation while Virtual currency exist only in digital form as an alternative to Fiat Currency or that can be converted.

Virtual currencies are an outcome of technological progression and the evolution of money both in form and function. The increased popularity of virtual currencies is by dint of digital confluence of markets from all over the world. Transactions from different economies, each with different currencies and relying on different financial institutions has increased over the years with direct interaction on a daily basis[7]. This has been expedited by access to Wi-Fi networks. Subsequently, virtual currencies, Bitcoin being the most popular, have emerged. Virtual Currency can either be centralized or decentralized with the former predating the latter, or convertible or non-convertible.

Centralized Virtual Currencies are issued and controlled by a single organization and cannot be converted into currency for example loyalty points while *decentralized Virtual Currencies* have no singular regulatory authority such as Bitcoin[8] and are open source, math based and peer to peer[9].

Convertible virtual currencies can be exchanged for traditional currency and have an equivalent value in real currency.[10] *Non-convertible* Virtual Currencies, such as Q Coins, exist within a particular virtual domain and cannot be exchanged for real currency. Non-convertible Virtual Currencies are considered centralized, as they are issued by a specific authority that establishes rules that make them non-convertible. As such, they pose fewer risks to the public than decentralized Virtual Currencies.[11]

Decentralized virtual currencies run on a distributed ledger technology named blockchain. Blockchain keeps a record of transactions on a self-reinforcing network[12]. The system itself

[7] Jeans ED, 'Funny Money or the Fall of Fiat: Bitcoin and Forward-Facing Virtual Currency Regulation' 13 30.
[8] 'European Central Bank: EBA Opinion on 'virtual currencies' *EBA* 2014.
[9] Meiring I et al., 'Blockchain and Crytptocurrency Regulation: South Africa', 432.
[10] Meiring I et al., 'Blockchain and Crytptocurrency Regulation: South Africa', 432.
[11] Meiring I et al., 'Blockchain and Crytptocurrency Regulation: South Africa', 432.
[12] Levi D, Kavanaugh B, Korinek K, Sandler B, 'Off the Chain: Blockchain Technology—An Information Organization System' *Technical Services Quarterly* (2019).

serves as a database for information that would normally be stored on a backup system[13]. All computers on the network are referred to as nodes and receive all the encrypted information as triggered by each transaction[14]. Blockchain is transparent and private[15] and no past transactions can be altered. The users are identified using hash values[16] which are used to match transactions with blocks through mining[17]. Blockchain champions argue that in a well-functioning system, no single node controls the system/blockchain[18], therefore reducing the incidences of hacking or exploit[19]. Each user receives their own private key coupled with a public key to access the blockchain[20].

Bitcoin was invented by a computer programmer by the pseudo name Satoshi Nakamoto[21]. It is a "*peer-to-peer network that uses cryptography to allow the secure transfer of unique digital assets (bitcoin) between any two parties in a decentralized manner (independent of a trusted third party)*"[22]. It precludes the need for a trusted third party e.g. a bank by using 'blockchain', a publicly available ledger containing all Bitcoin transactions in chronological order shared with all users upon joining the Bitcoin network, addresses and balances right from the genesis block and is updated regularly upon completion of blocks[23].

[13] Levi D, Kavanaugh B, Korinek K, Sandler B, 'Off the Chain: Blockchain Technology—An Information Organization System'.

[14] Brandon D, 'The blockchain: The future of business information systems?' *International Journal of the Academic Business World* (2016) 34.

[15] Cartier L, Ali S, Krzemnicki, M, 'Blockchain, chain of custody and trace elements: An overview of tracking and traceability opportunities in the gem industry' *Journal of Gemmology* (2018).

[16] Levi D, Kavanaugh B, Korinek K, Sandler B, 'Off the Chain: Blockchain Technology—An Information Organization System'.

[17] Levi D, Kavanaugh B, Korinek K, Sandler B, 'Off the Chain: Blockchain Technology—An Information Organization System'.

[18] Levi D, Kavanaugh B, Korinek K, Sandler B, 'Off the Chain: Blockchain Technology—An Information Organization System'.

[19] Atzori M, 'Blockchain technology and decentralized governance: Is the state still necessary?' *Journal of Governance and Regulation* (2017),4.

[20] Levi D, Kavanaugh B, Korinek K, Sandler B, 'Off the Chain: Blockchain Technology—An Information Organization System'.

[21] Nakamoto S, Bitcoin: A Peer-to-Peer Electronic Cash System 9.

[22] Nakamoto S, Bitcoin: A Peer-to-Peer Electronic Cash System 9.

[23] Eatwell and others, *The New Palgrave: A Dictionary of Economics*.

Virtual Currency users champion for various benefits. Firstly, economic benefits such as lower costs of transactions despite the value of the transaction, no inflation[24] and financial inclusion facilitated by no cost of entry. Secondly, there are no geographical restrictions. Thirdly, anonymity and transparency due to the public record of all transactions[25]. Fourthly, swift transaction speeds[26].

Virtual Currencies continue to grow in popularity and in number. Many of the initial Virtual Currency coins were developed to addresses perceived shortcomings of bitcoin. The surge is also attributed to the relatively costless entry and the pursuit of profits enjoyed by previous developers.[27] Consumers but these currencies for either its potential use as a currency, as an asset, or both[28].

Within the first half of 2020, Kenya saw a 199% volume increase in trading of virtual currency (bitcoin in particular) with 125% increase in Nigeria, 194% in South African and 257% in Ghana[29]. Africa has so far seen bitcoin trade worth a total of $15million placed at the second largest in growth among the youth. Some businesses are already accepting bitcoin payments[30] despite pushback from banks and the government. Kenya is reported as one of the countries that holds the largest amount of decentralized virtual currencies, especially crypto currencies, per capita. Kenyans hold an approximate Kes 163.3 billion which translated to 2.3% of the country's GDP as at November of 2018.[31] This exposes the Kenyan financial system as well as consumers to tremendous risks.

[24]'Tatjana Boshkov: Blockchain and Digital Currency in the World of Finance' *Blockchain and Cryptocurrencies* 2018 <https://www.intechopen.com/books/blockchain-and-cryptocurrencies/blockchain-and-digital-currency-in-the-world-of-finance> on 2 August 2020.

[25]<https://www.intechopen.com/books/blockchain-and-cryptocurrencies/blockchain-and-digital-currency-in-the-world-of-finance> on 2 August 2020.

[26]<https://www.intechopen.com/books/blockchain-and-cryptocurrencies/blockchain-and-digital-currency-in-the-world-of-finance> on 2 August 2020..

[27] Halaburda H, 'Competition in the Crytpocurrency Market', Bank of Canada (2014).

[28] Halaburda argues that both factors influence the uptake of virtual currencies:

[29] 'CryptoGuru: Bitcoin Adoption in Africa Is Setting All-Time Highs Every Week, Say Crypto Analysts' *Bitcoin KE* 1 July 2020) <https://bitcoinke.io/2020/07/africa-p2p-volume-gains/> on 23 July 2020.

[30] 'Mary-Ann Russon: Crypto-Currencies Gaining Popularity in Kenya' *BBC News* 22 February 2019 <https://www.bbc.com/news/business-47307575> on 2 August 2020.

[31] Kenyan Wall street: https://kenyanwallstreet.com/kenya-among-countries-world-highest-per-capita-holding-bitcoin-citi/ on 10 December 2020.

Bitpesa[32] is a digital service that allows receipt of money in Kenya from abroad by converting bitcoin into Kenya shillings. Kipochi is another example of VC in Kenya. It was an e-wallet integrated with Mpesa but has since fallen following disapproval by the Central bank of Kenya among other issues[33]. An e-wallet is a password protected online/virtual account that allows users to store money for use during online transactions[34].

Kenya, through its Ministry of Information, Communication and Technology commissioned the Emerging Digital Technologies for Kenya: Exploration and Analysis, since dubbed the Blockchain Taskforce Report[35]. The Taskforce, tasked with investigating issues of distributed ledger technology and artificial intelligence, in its report looked at the issue of cryptocurrencies, a form of virtual currencies. Two proposals emerged: firstly, to launch a Central Bank Digital Currency (CBDC) and secondly, to enable a Digital Asset Framework (DAF) for virtual currency in Kenya. The report also proposed the creation of a virtual currency regulatory sandbox[36] which has since been implemented by the Capital markets Authority for blockchain technology firms, but none that deal with Virtual Currency. The Capital Markets Authority has stated that it would take a more encompassing approach to include virtual currency[37].

Ensuring consumer protection under financial products is usually a mandate of a supervising authority[38] and the lack of one with decentralized virtual currencies dwindles the necessity to guarantee the same[39]. The decentralized virtual currency providers themselves can ensure certain safeguards within their own networks but they can also decide not to.

[32] 'BitPesa: Africa's Cryptocurrency and BTC Exchange' *BitPesa Africa's Crypto and BTC Exchange* <https://www.bitpesa.co/about/> on 2 August 2020.
[33] 'What Actually Happened at Kipochi?' *Stake Ventures* <https://blog.stakeventures.com/articles/what-actually-happened-at-kipochi> on 2 August 2020.
[34] 'What Is E-Wallets? Definition of E-Wallets, E-Wallets Meaning' *The Economic Times* <https://economictimes.indiatimes.com/definition/e-wallets> on 2 August 2020.
[35] Distributed Ledgers Technology and Artificial Intelligence Taskforce Kenya, *Emerging Digital Technologies for Kenya: Exploration and Analysis*, 2019.
[36] Distributed Ledgers Technology and Artificial Intelligence Taskforce Kenya, *Emerging Digital Technologies for Kenya: Exploration and Analysis*, 2019, 37.
[37] Capital Markets Authority, *The Capital Markets Soundness Reports Quarter 1*, 2021, 33.
[38] Animashaun S, 'Regulating Virtual Currency Payment Systems', 29.
[39] Malala J, Consumer Protection for Mobile Payments in Kenya, 2.

Virtual currencies bare similar characteristics of conventional currency, stores of value, units of account and mediums of exchange, however they are not legal tender[40]. Further, there have been differing opinions on the classification of VC[41]. Classification assists in establishment of institutions and entities involved in the system. This would eventually provide a platform for the correct administrative bodies allowing for avenues of redress whenever issues arise thus decreasing regulatory uncertainty and subsequently protection of consumers. The lack of general consensus as to the classification of decentralized virtual currencies creates holes in antitrust regulation. There is also a need to define whether any specific decentralized virtual currency is akin to a company or a market in itself.

1.2 Statement of The Problem

The uptake of decentralized virtual currencies continues to grow influenced by access to internet resources and the global market. The decentralized nature of these virtual currencies places more risks on consumers than in any other payment systems where the financial institutions bear the burden. DVC pose both immediate and remote risks to consumers including volatility risks and cyber risks. They are however, issued by private entities and are not recognized by most governments.

Ensuring consumer protection under financial products is usually a mandate of a supervising authority[42] and the lack of one with decentralized virtual currencies dwindles the necessity to guarantee the same[43]. The decentralized virtual currency providers themselves can ensure certain safeguards within their own networks but the can also decide not to. It is upon this premise that the study is based.

1.3 Statement Of Objectives

The general objective of the research is to critically analyze consumer protection within the decentralized virtual currency sphere in Kenya.

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[40] Kalbaugh GE, 'Virtual Currency, Not a Currency Conference Articles' 16 *Journal of International Business and Law* (2016) 26.

[41] *Securities and Exchange Commission v Trendon T Shavers and Bitcoin Savings and Trust* [2013] Eastern District of Texas No. 4:13-CV-416.

[42] Animashaun S, 'Regulating Virtual Currency Payment Systems', 29.

[43] Malala J, Consumer Protection for Mobile Payments in Kenya, 2.

The study will focus on the following specific objectives:

I. To examine the extent to which the existing consumer protection regulatory framework in Kenya is efficient.
II. To analyze in what ways an inefficient consumer protection regulatory framework exposes Kenyans to risks within decentralised virtual currency.
III. To draw comparisons from South Africa and Mexico on approaches to regulation of consumer protection within decentralised virtual currency.

1.4 Research Questions

This study seeks to answer 3 principal questions:

1. Is the existing consumer protection regulatory framework in Kenya efficient?
2. What risks does an inefficient consumer protection regulatory framework expose a Kenyan to within decentralised virtual currency?
3. What can be learnt from South Africa's and Mexico's approach to the regulation of consumer protection within decentralised virtual currency?

1.5 Hypothesis

This paper proceeds from the hypothesis that the current legislative framework for consumer protection in Kenya is insufficient for decentralized virtual currency.

1.6 Justification And Significance of The Study

Decentralized virtual currencies are posited to be a revolutionary payment system for transactions. With their continued growth in investment and usage, it is proving increasingly important to address the risks associated with DVC. Their uptake is coupled with threats to national security, market systems as well as the private rights of the users. Thus, Kenya needs to take a proactive approach toward DVC and specially to ensure consumer protection of the Kenyan user.

This study seeks to contribute to the ongoing discussions regarding regulation of virtual currencies and legitimization of the industry in Kenya. It outlines the risks and omissions,

allowing consumers to make informed choices. Furthermore, the recommendations that will be informed by the deductions of this study are expected to assist industry players, lawmakers and policy-makers in designing appropriate tools and strategies to further encourage and address various types of virtual currency and therefore forging the way toward consumer protection.

1.7 Theoretical Framework

The study is premised on the Public Interest theory of Regulation and Libertarian Theory of Innovation.

Public Interest theory of Regulation

This theory as developed by A.C. Pigou (1932)[44] posits that the regulation of enterprises and various economic factors promotes public interest. Regulations are intended to ensure the good for the general public and not that of private individuals[45]. Market failures and efficient government intervention are fundamental concepts to the theory. Due to the ever changing nature of decentralized virtual currencies, there is a need to manage any possible market failures as well as ensure protections of consumer rights. Further, the anonymous nature of the system allows criminal activity to take place. Given the volumes of DVC in Kenya, there is need to prevent market failure and crime.

This theory fits this study because of the overall objective of the study being consumer protection with regards to DVC. The lack of a sufficient or effective policy and legal regulatory framework bolstering the use of VCs poses momentous setbacks to their adoption and usage in Kenya.[46] The nonexistence of proper regulatory framework subjects the traders or users of VCs to credit, liquidity and operational risks combined with the decisiveness and definiteness of VCs dealings.[47] Soft reforms allow for certain liberties to still exist and maintain innovative

[44]Michael Hantke-Domas, 'The Public Interest Theory of Regulation: Non-Existence or Misinterpretation?' 15 *European Journal of Law and Economics* (2003) 165.

[45]'Public Interest Theory – My Assignment Help : Samples & Case Study Review Sample' <https://myassignmenthelp.info/assignments/public-interest-theory/> on 2 August 2020.

[46]Michael Hantke-Domas, 'The Public Interest Theory of Regulation: Non-Existence or Misinterpretation?' 15 *European Journal of Law and Economics* (2003) 165.

[47]Michael Hantke-Domas, 'The Public Interest Theory of Regulation: Non-Existence or Misinterpretation?' 15 *European Journal of Law and Economics* (2003) 165.

environments[48].This body of research argues for the minimum regulation of decentralized virtual currencies in Kenya to ensure protection of consumers and for legitimization of the industry. It champions the rationale[49] that regulation, through legislation, should require the enterprises to disclose certain information and activities that it is taking to ensure the protection of the society at large. VC decentralized nature, pseudonymous nature of its users and irreversibility of transactions solidify the need for regulation to ensure protection of consumers. Eventually, regulation of VC will increase the confidence of the public in their uptake, enlarge the tax base, sustain comparable and associated innovations in Fintech and perhaps map Kenya in the international fiscal dealings.

Libertarian Theory of Innovation

Libertarians theorize that private entities should enjoy freedom of choice, autonomy, individualism and free/voluntary association[50]. Theorists under this school of thought oppose political systems and state power. Hayek, holds the view that government intervention should be minimized in market activities in the interest of freedom[51]. Governments are accused by libertarians of creating barriers to innovation and development by embracing the 'precautionary principle' that results in eventual slowed movement or outright prohibition[52]. Some libertarians justify the state as a necessary instrument in the protection of individual rights.

Hayek popularized the concept of 'catallaxy' that translated from the Greek word *katallato* meaning 'to exchange' and 'to admit into community'. The concept describes the emergence of order from chaos. [53] Decentralized virtual currencies is considered disruptive and an unpredictable technological financial innovation that is cumulated from systems and ideologies by various individuals. A libertarian approach acknowledges the associated uncertainties and

[48] Sandler T, 'Power and Prosperity: Outgrowing Communist and Capitalist Dictatorships by Mancur Olson*' 39 Journal of Economic Literature (*2001),1282. www.jstor.org/stable/2698562. Accessed 21 May 2021.

[49]<https://myassignmenthelp.info/assignments/public-interest-theory/> on 2 August 2020.

[50] https://www.libertarianism.org/essays/libertarian-vision-for-technology on 19 May 2021

[51] Arnold G, 'Libertarian Theories of the Corporation and Global Capitalism' 48 *Journal of Business Ethics*, (2003), 156. www.jstor.org/stable/25075173 on 21 May 2021.

[52] https://www.libertarianism.org/essays/libertarian-vision-for-technology on 19 May 2021.

[53] 'Pouliot F: Catallaxy: The Origins of Bitcoin, Innovation and Spontaneous Order' *Medium*, 19 Septmber 2017https://medium.com/@francispouliot/catallaxy-the-origins-of-bitcoin-and-innovation-93dbc3190eac on 19 May 2021.

risks while holding space for discovery[54]. The theory does however have its short comings in placing enormous importance on individual self-determination above all else. Consequently, it is only applicable under capitalism[55].

Libertarians argue for minimal reliance on government[56] to ensure safeguards of private property, rights and liberties. In this case, the issuers and users of decentralized virtual currencies willingly contracting with each other would only require the government to provide minimum regulatory standards that protect the consumers. This body of research argues that governments, under the current capitalistic economy, should be involved minimally in the decentralized virtual currency sphere. Their involvements should ensure it does not stifle innovation and the free will of its people.

According to Libertarians varying information flows in all directions and thus ensures the public is well aware of their undertakings. [57] All individuals are subjected to read between the lines and choose the information they require and its genuineness pegged fully on human rationality. The channels of information should not be stifled even when criticizing government policies. Even though there is freedom and free flowing information which empowers the media, misuse of power is legally controlled. [58] Overall, this theory encourages transparency in dealings, encourages healthy competition and the same time ensures that the state authorities and the government are kept in check with regards to consumer protection and general regulatory mandates.

Summary

Regulation is a prerequisite to market behavior that ensures protection of public interests. To facilitate the use of VCs, the design of an enabling policy and regulatory framework is imperative, thus, the public interest theory should be the central supervisory and anchoring

[54] https://www.libertarianism.org/essays/libertarian-vision-for-technology on 19 May 2021

[55] Block W, 'The Libertarian Minimal State?: A Critique of the Views of Nozick, Levin, and Rand' *4 Journal of Ayn Rand Studies* (2002), 155. www.jstor.org/stable/41560207 On 21 May 2021.

[56] Block W, 'The Libertarian Minimal State?: A Critique of the Views of Nozick, Levin, and Rand', 142.

[57] Block W, 'The Libertarian Minimal State?: A Critique of the Views of Nozick, Levin, and Rand' *4 Journal of Ayn Rand Studies* (2002), 155. www.jstor.org/stable/41560207 On 21 May 2021.

[58] Block W, 'The Libertarian Minimal State?: A Critique of the Views of Nozick, Levin, and Rand' *4 Journal of Ayn Rand Studies* (2002), 155. www.jstor.org/stable/41560207 On 21 May 2021.

theory. Libertarianism, however, endows governments with powers to vindicate the rights of individuals that they are solicited to protect. Libertarianism also discards the concept of "collective rights," that novel freedoms can spring from the formation of communal units. Rights are inherent in an individual, who may assign or exercise it, nonetheless establishment of officialdom does not develop rights. Moreover, public interest has diminutive value, but their unlimited suppleness provides cover for activities that are to some extent justifiable as enforcing individual rights as paralleled to endorsing a government officer's private interests. Under this theory, the Central Bank of Kenya should be vested with the appropriate regulatory structure whose application will juncture the safeguard of the general public interest, mitigate market failures and at the same time encourage innovation.

1.8 Research Methodology & Approach

This research employed doctrinal focus. Reliance was placed on desktop research, purposing the use of books, articles, law and financial journals, international and regional publications, reports and working papers as informational sources on consumer protection and virtual currencies. The data collected was purely textual. The analysis focused on consumer protection regulatory provisions in the age of virtual currency with elements of comparative analysis.

1.9 Limitations

This study is limited by design as it excludes quantitative data from fieldwork. The area of virtual currency is capricious and change is inevitable during the length of this research. To wit, this study is limited to the state of technology and law between to June 2020 and July 2020.

Further, this thesis will not benefit from informational sources from non-English speaking countries where English translations of resources are not available owing to language limitations. The COVID-19 pandemic and it's consequent effect on the global economy affected the trends in adoption and uptake of DVCs with a huge increase occasioned by lockdowns and avoidance of physical contact.

1.10 Chapter Breakdown

Chapter one of this thesis is the introductory chapter. It provides a background on decentralized virtual currencies including their adoption, nature, risks, and evolution as well as a background on consumer protection laws. It sets out the research questions, research objectives, justification, limitation and the methodology. The chapter hypothesizes that the existing consumer protection regulatory framework is insufficient under the decentralized virtual currency sphere and that some level of regulation is necessary.

The **second chapter** provides insight into decentralized virtual currencies and gives examples of popular ones. The chapter further gives advantages and disadvantages and discusses the decentralized VC vis-à-vis fiat currency characteristics. The chapter discusses consumer protection and the principles upon which effective consumer protection laws should be founded. Further, the chapter draws a comparison between decentralized virtual currencies and fiat currency. The chapter concludes by discussing the specific consumer risks raised by decentralized virtual currencies.

The **third chapter** discusses the regulatory framework of consumer protection and digital payment systems in Kenya. The chapter posits that by simple definition decentralized virtual currencies could fall under the definition of digital payment systems. It further addresses the challenges associated with regulation of consumer protection withing decentralized VC by Kenya.

The **fourth chapter** draws admonition from the regulatory approaches in Mexico and South Africa in the face of adoption of virtual currency and subsequent consumer protection concerns. The chapter identifies their approaches and consequent appropriateness for Kenya.

The **fifth chapter** makes recommendations and conclusions based on chapter one, two, three and four.

2 CHAPTER TWO: CONSUMER PROTECTION IN DECENTRALIZED VIRTUAL CURRENCIES

2.1 Introduction

An impartial appraisal of consumer protection issues in decentralized virtual currency necessitates a basic understanding of the notions on which decentralized virtual currency technology stands. To begin, we contemplate upon the query "What is the genesis of the money?". The existing global financial system borrowed its current form from the closure of the Bretton Woods system in the year 1972: when the globe transformed to rely on currency unlike the previous reliance on inherently valuable possessions, like gold, to fiat currency[59]. Fiat currency banks on government's backing in ensuring that they are acceptable as a legal tender. It is valuable, partially, since governments necessitate that duties be paid in legal tender, thus this guarantees demand for it will ever exist. Money is consequently generally deliberated to be a formation of governments, nonetheless the commercial banks likewise have a vital part in the manner of creating money[60].

Before something can be called money, it must fulfill three requirements: it must function as a store of value, a medium of exchange, and a unit of account[61]. As a result, despite the fact that fiat money has no inherent worth, it nevertheless serves as a store of value (as a promise to pay) in that its paper or coin form may be traded for goods of comparable value at a reasonably steady rate. Consequently, money is fundamentally a reflection of public trust in a currency's ability to maintain a system of value exchanges. National governments and their central banks are usually the ones that maintain this trust.

However, the question today is whether, if a section of the population has faith in an alternative financial system, such an alternative currency can survive without proper protections for consumers. The introduction of new payment technologies, which include decentralized systems for ledger administration, payment verification, and currency supply, brings about consumer risks to reconsider.

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[59] Economic Commission for Latin America and the Caribbean, *Opportunities and risks associated with the advent of digital currency in the Caribbean*, 2016.

[60] Economic Commission for Latin America and the Caribbean, *Opportunities and risks associated with the advent of digital currency in the Caribbean*, 2016.

[61] Stanley W J, *Money and the Mechanism of Exchange*, D Appleton & Co, New York, 1876.

Owing to Bitcoin being the first decentralized virtual currency, it will be used to demonstrate how such systems function. The capitalized term Bitcoin will be used in referring to the payment scheme throughout this chapter, while "bitcoins," written in lower case, will refer to the currency's units. This adheres to a Bitcoin community standard.

2.2 Consumer Protection

2.2.1 Who is a Consumer?

The Black's Law Dictionary defines a consumer as one who buys goods or services for personal or commercial use. The Consumer Protection Act Kenya[62], gives a broad definition of the meaning of consumer as:

1. One to whom particular goods or services are marketed in the ordinary course of the supplier's business;
2. a person who has entered into a transaction with a supplier in the ordinary course of the supplier's business, unless the transaction is exempt from the application of this Act;
3. a user of particular goods or a recipient or beneficiary of particular services, irrespective of whether that user, recipient or beneficiary was a party to a transaction concerning the supply of those particular goods and services; and
4. a franchisee in terms of a franchise agreement, to the extent applicable in terms of this Act.[63]

The Kenyan Consumer Protection Act's definition, unlike Black's Law Dictionary's, refers broadly to mean both natural and artificial persons. The research paper will adopt the definition in the Kenyan Act because it captures broadly various elements of consumer protection.

Financial consumer protection generally ensures a fair exchange between providers and consumers of various financial services[64]. It entails measures meant to safeguard consumers of goods and services from unfair market practices and fraudulent transactions[65].

[62] Consumer Protection Act (2012).
[63] Section 2, Consumer Protection Act (2012).
[64] Financial Sector Deepening, Kenya, Consumer Protection Diagnostic Study Kenya, January 2011.

2.2.2 What is the rationale for Financial Consumer Protection?

The United Nations Manual on Consumer Protection 2016 addresses the importance of consumer protection by highlighting disparities in bargaining power, knowledge and resources between consumers and service providers. It states that state intervention is necessary for ensuring individual rights are protected and distributive justice[66].

Malala asserts that consumer protection is elucidated and rationalized by the concept of a "weaker party" [67].Consumers are considered to be at a disadvantage compared to their contracting partners and the professionals[68]. They are assumed to need help with protecting their interests owing to their subjacent bargaining power. Further, the concept of vulnerability asserts that some consumers are more vulnerable than others, an aspect that has been recognized by legislation. Consumer protection is notably imperative in Kenya where financial education levels are generally lower and information flows strained[69].

2.2.3 Principles for Consumer Protection

Consumers enjoy various universal rights[70]. The first is the right to basic needs which ensures the access to affordable and good quality basic goods like food, clothing, shelter, water, proper sanitation, healthcare, public utilities and education. The second is the right to safety. Consumers are entitled to goods and services that are not harmful to their health and wellbeing and the onus is on the provider to carry out sufficient safety tests. Third is the right to commensurate information regarding the products and services to allow for an informed choice. The information should include instructions, elements/ingredients, precautions and all other necessary information. The same should be informative rather than persuasive[71]. Fourth is the

65 Harvey BW and Penny DL, The Law of Consumer Protection and Fair Trading, 6ed, Oxford University Press, 2000, 25.

66 United Nations Conference on Trade and Development (UNCTAD), Manual on Consumer Protection 2016 2.

67 Malala J, Consumer Protection for Mobile Payments in Kenya: An Examination of the Fragmented Legislation and the Complexities It Presents for Mobile Payments, (2013), 22.

68 Malala J, Consumer Protection for Mobile Payments in Kenya, 23.

69 Malala J, Consumer Protection for Mobile Payments in Kenya, 23.

70Ibarra V, Revilla C, 'Consumers' Awareness of their Eight Basic rights: A comparative study of Filipinos in the Philippines & Guam 'International *Journal of Management and Marketing Research* (2014), 67-69.

71 Ibarra V, Revilla C, 'Consumers' Awareness of their Eight Basic rights: A comparative study of Filipinos in the Philippines & Guam ', 67.

right to freely choose from a diverse portfolio of available quality alternatives within the market. Fifth, consumers enjoy the right to representation in the formation of relevant policies as well as in regulatory processes. The sixth is the right to a healthy environment which includes clean air and surroundings through proper waste management as well as sustainable exploitation of natural resources. The seventh right ensures consumer education resulting in an informed consumer. Consumer education encompasses four important aspects: (i) informed choice- this empowers the consumer to obtain information on their own and make judgments based on the same; (ii) value systems - expose consumers to the impact of their individual choices on resource allocation within the community; (iii) wise decision making; and (iv) stimulus for change - this ensure knowledge of the power which consumers hold to influence change[72]. The eighth consumer right is the right to redress which constitutes the right to legal remedies in a court of law and compensation for misrepresentation of defective goods and services[73].

The United Nations has indexed principles[74] upon which consumer protection frameworks are to be built as they represent the bare minimum standards. The objectives of the principles are: to ensure maintenance of sufficient consumer protection; to ensure production mirrors consumer demand; to spur ethical conduct among producers and distributors; to promote sustainability; to curb abusive business practices and to facilitate international partnership[75]. The principles apply to both private and state enterprises. 2020 marks thirty-five (35) years since the adoption of the first variant of the principles however some scholars[76] argue that there has never been any observational study on the tangible effect of the principles therefore inhibiting the ability to note their contribution to national consumer protection laws.

Consumer protection principles under *digital financial services (*DFSs) exist as well. *'Good consumer protection practices protect the interests of consumers, creating trust in using digital financial services (DFS), while preserving the commercial incentive to provide these services at*

[72] 'Singh B: Consumer Education on Consumer Rights and Responsibilities' *Code of Conduct for Ethical Business and Importance of Product Labelling. For Direct Selling Association of Malaysia* (2002).
[73] Ibarra V, Revilla C, 'Consumers' Awareness of their Eight Basic rights: A comparative study of Filipinos in the Philippines & Guam ', 68
[74] United Nations Guidelines for Consumer Protection 35.
[75] United Nations Guidelines for Consumer Protection.
[76] Durovic M, 'International Commercial Law: What is it all about?' *Journal of Consumer Policy* (2020), 129.

scale'[77]. Firstly, clear, transparent and complete product disclosure. Consumers must understand the different rights and obligations. Secondly, clear, available and accessible recourse, redress and dispute resolution mechanisms. Thirdly, timely and accurate disclosure of terms and all relevant information. Fourthly, provision for continuity in the event of disruption and network outages.[78]

2.2.4 Approaches to Consumer protection

A consumer is any person who purchases a product or service and uses it. Consumer dissatisfaction has been a result of unsafe products and services and poor quality of information. Consumers have previously been in a disadvantaged position in the merchant-consumer relationship. As a result of the same as well as global financial crises, consumer protection has increasingly gained importance. Consumers are to be protected from abusive business practices and encouraged to make informed decisions[79].

Two approaches exist toward consumer protection:

Risk Based Approach

A risk-based approach allows allocation of resources and strategic prioritization of interventions to address assessed risks[80]. According to the GPFI white paper[81], the increasing remonstrance to effective consumer protection extended by digital financial inclusion and emerging consumer risks further bolster the need for specific guidance on risk-based consumer protection supervision.

This approach argues that risk currently holds four main capacities in regulation. Firstly, as an object of regulation. Secondly, providing a justification for regulation. Thirdly, 'constituting and framing regulatory organizations and regulatory procedures'. Lastly, 'framing accountability

[77] Malady L, 'Consumer Protection Issues for Digital Financial Services in Emerging Markets' *Social Science Research Network* (2016).

[78] Malady L, 'Consumer Protection Issues for Digital Financial Services in Emerging Markets'.

[79] 'World Bank Group: Good Practices for Financial Consumer Protection' *2017 Edition World Bank* 2017 <http://elibrary.worldbank.org/doi/book/10.1596/28996> on 2 August 2020.

[80] 'Risk-Based Supervision in the Digital Financial Inclusion Era' <https://www.cgap.org/blog/risk-based-supervision-digital-financial-inclusion-era> on 2 August 2020.

[81] 'Global Standard-Setting Bodies and Financial Inclusion: The Evolving Landscape' *GPFI* <https://www.gpfi.org/publications/global-standard-setting-bodies-and-financial-inclusion-evolving-landscape> on 2 August 2020.

relationships.[82] Risk suggests the probability of an undesirable outcome as a result of human activities and thus mandating the government to intervene and prevent the same[83]. Technology advancements are coupled up with regulation in an attempt to manage the subsequent risks.

Principle Based Approach

The principle-based approach to consumer protection shifts toward broadly stated standard principles and away from detailed strict rules[84]. Principles have a number of characteristics: they are outlined at a high level of generality, with the intention to overarch and be applied flexibly to rapidly changing industries; they contain qualitative terms rather than quantitative; they are purposive and explain reasons; they are broadly applicable to a range of circumstances; they are mostly behavioral standards and are concerned with manner of carrying out business and treatment of consumers; and breach of a Principle must involve an element of fault and can involve public enforcement action[85]. This approach has the potential benefit of flexibility and a higher chance of success and thus fulfilling regulatory objectives as it is easier to comply with.

2.2.5 Regulatory responsibilities

Durovic[86] posits that consumer law as a discipline arose from the increase of consumer protection frameworks. He argues that, contemporaneously with the development of national laws around consumer protection, there has been internationalization of consumer protection law with its two main goals being minimum standards for consumer protection and ease of cross border trade and transactions[87].

[82] Black J, 'The Role of Risk in Regulatory Processes' in Baldwin R, Cave M, Lodge M (eds), *The Oxford Handbook of Regulation*, Oxford University Press, 2010.
[83] Baldwin R, Cave M, Lodge M , *The Oxford Handbook of Regulation*, 1st edition, Oxford University Press, 2010.
[84] Black J, Hopper M, Band C, 'Making a Success of Principles-Based Regulation' 1 *Law and Financial Markets Review*, (2007), 191.
[85] Black J, Hopper M and Band C, 'Making a Success of Principles-Based Regulation' 191.
[86] Durovic M, 'International Commercial Law: What is it all about?', 126.
[87] Durovic M, 'International Commercial Law: What is it all about?', 127.

Lumpkin emphasizes the need for balance between consumer protection and financial innovation[88]. He makes an argument that market confidence and consumers are undermined if adequate protections do not exist.[89]

Malady[90] notes that the nature of digital financial services diversifies the range of regulators leading to variability in regulatory and protection regimes[91]. According to Aminashaun[92], clarity of consumer accountability enables proper approach and redress. Traditional financial services are regulated mainly by the central bank[93]. They are catalysts and liquidity providers. The central banks' role as a catalyst ensures stability through various regulations, rules and guidelines[94]. In cross-border transactions, central banks act as clearing institutions.

Malala[95] notes that the lack of regulatory provisions exposes consumers to risks. Further, rapidly changing technologies hamper the government's ability to forecast and pinpoint the future[96]. There exists a connection between consumer protection and the stability of the market[97].

International regulatory bodies like the International Monetary Fund (IMF), World Bank, United Nations Conference for Trade and Development (UNCTAD), Organization for Economic Cooperation and Development (OECD) and International Organization for Securities Commissions (IOSCO) are also involved in the regulation of financial services[98] and ensuring consumer protection[99]. They ensure international cooperation and coordination toward global

[88] Lumpkin S, 'Consumer Protection and Financial Innovation: A few Basic Propositions' 1 *Financial Market Trends* (2010), 128.
[89] Lumpkin S, 'Consumer Protection and Financial Innovation', 128.
[90] Malady L, 'Consumer Protection Issues for Digital Financial Services in Emerging Markets'.
[91] Malady L, 'Consumer Protection Issues for Digital Financial Services in Emerging Markets'.
[92] Animashaun S, 'Regulating Virtual Currency Payment Systems' 4 *Cambridge Law Review* (2019), 29.
[93] Animashaun S, 'Regulating Virtual Currency Payment Systems' 4 *Cambridge Law Review* (2019), 29.
[94] Animashaun S, 'Regulating Virtual Currency Payment Systems', 29.
[95] Malala J, Consumer Protection for Mobile Payments in Kenya, 2.
[96] Malala J, Consumer Protection for Mobile Payments in Kenya, 20.
[97] Malala J, Consumer Protection for Mobile Payments in Kenya, 22.
[98] Animashaun S, 'Regulating Virtual Currency Payment Systems', 29.
[99] Durovic M, 'International Commercial Law: What is it all about?', 129.

financial stability[100]. Rules and laws by international bodies for soft, nonbinding laws that require voluntariness to implement[101].

2.3 Decentralized Virtual Currency

The decentralized virtual currency marketplace is a novel playing arena where diverse players each has a certain and unique part to play for the success[102].

2.3.1 Main Actors

Consumers

First and foremost, and a very central actor is the DVC user. This is a legal entity or an ordinary individual who acquires virtual currencies to spend them (1) to carryout peer-to-peer (P2P) disbursements, (2) to make investments and withholds them in speculation of the future dealings, or (3) to buy virtual or real services or goods from a set of particular dealers. These users are able to get their coins in numeral ways. First, they can basically purchase their coins using a different decentralized virtual currency or fiat money on a decentralized virtual currency exchange; Second, they can purchase from a different virtual currency consumer directly through a transaction platform frequently denoted as a "P2P exchange"; Third, rewards from mining of new coins in virtual currencies is founded on Proof of Work (PoW) agreement strategy; Fourth, in some circumstances they can get the coins straight from the coin offeror, either in crowd sale framework put in place by the offeror or as portion of a free preliminary offering of coins; Fifth, if an individual vends services or goods in exchange for virtual currency, the individual obtains coins as compensation[103]; sixth, if a coin's blockchain "hard forks", the individual will spontaneously receive an amount of the recently fashioned coin; and lastly, the individual can obtain coins as donations or gifts from a different cryptocurrency customer.

Virtual currency exchanges

[100] Animashaun S, 'Regulating Virtual Currency Payment Systems'.

[101] Alexander K, Dhumale R, Eatwell J, *Global Governance of Financial Systems: The International Regulation of Systemic Risk*, Oxford University Press, 2006.

[102] Financial Action Task Force, Virtual Currencies – Key Definitions and Potential Anti Money Laundering/Counter Terrorist Financing Risk, June 2014.

[103] Sadhaseevan L, 'The Regulation of Crytpocurrencies in the Context of South Africa's Financial Sector' Unpiblished LLM Thesis, University of KwaZulu-Natal, 11 September 2019.

The second cluster of important participants are the "virtual currency exchanges." A decentralized virtual currency exchange is a person or organization that provides exchange amenities to DVC customers, and usually requires a certain commission.[104] They permit DVC operators to sell their coins in fiat currency. Use fiat currency to buy currency or acquire a new currency. They habitually act as foreign exchange offices and some kind of exchange offices. It is noteworthy that a number of transactions are purely virtual currency deals, meaning that they usually only receive disbursements in other virtual currencies rather than Bitcoin (such as Binance), while others also accept payments in U.S. dollars or euros (such as Coinbase) and other legal currency payments.

In addition, several virtual currency exchanges merely permit their consumers to purchase a specific set of coins. Many decentralized virtual currency exchanges (that is, regular and pure virtual currency exchanges) act as providers of custodial banks (such as Bitfinex). Currency Exchange provides its users with a variety of payment choices, like credit cards, PayPal transfers, bank transfers and other currencies. A number of exchanges also offer figures about the virtual currency market (such as transaction volume and currency volatility) and provide conversion services to traders who agree to take virtual currency payments.

Miners

The third player is a "miner" who plays a part in transaction verification on the blockchain and solves the "cryptographic puzzle".[105] As mentioned, the mining procedure refers to the cryptocurrency grounded on the PoW unanimity mechanism. Use computing supremacy to verify dealings and get rewards for coins that are newly mined (that is, via automatic devolved re-issuance). For fiat currencies (such as U.S. dollars or euros) or other cryptocurrencies. A number of miners are grouped in professed mining pools to increase computing supremacy. Currently, the alleged "mining"-related risk business" seems to be underestimated.[106]

Coin offerors

[104] Sadhaseevan L, 'The Regulation of Crytpocurrencies in the Context of South Africa's Financial Sector' Unpiblished LLM Thesis, University of KwaZulu-Natal, 11 September 2019.
[105] Sadhaseevan L, 'The Regulation of Crytpocurrencies in the Context of South Africa's Financial Sector' Unpiblished LLM Thesis, University of KwaZulu-Natal, 11 September 2019.
[106] Maanda MH, 'Legal Implications of Virtual Currencies', LLM Thesis, University of Pretoria, January 2019.

The key players in the last group that should be emphasized are the "bidders." A coin product is an individual or organization provided to cryptocurrency users when the coin is first launched, for a fee (through bulk sales) or free (as part of a special (registered) plan (z below)), usually to fund the coin, promote development or increase its preliminary visibility[107]. Official coin issuer is either partly pre-mined, or pre-mined (that is, cryptocurrency consumers can create additional coins after issue) or completely pre-mined. It should be noted that not every coin has a distinguishable coin dealer, not all coins are pre-mined, or all their inventory is pre-minted. Token issuer can be the identical individual as the originator of the token, or a different person or business.[108]

Coin inventors

There are also players called "coin inventors". The coin inventor is the person or organization that develops the practical foundation of cryptocurrency and makes the primary guidelines for using it. In some circumstances, their identities are recognized (such as Ripple, Litecoin, Cardano), nevertheless usually they are still unknown (z, Bitcoin, Monero). Some maintenance and improvement of encryption Currency codes and underlying algorithms (in principle, no administrator rights), while others simply disappear (such as Bitcoin). [109]

2.3.2 Transactions, mining, and the block chain

Customarily, financial systems necessitate the Central Bank to preserve a transactions ledger within the commercial banking scheme that is capable for use in verification of transactions amid clients of these commercial banks. Though, a system based on distributed ledger-based employs regular cryptographic methods in maintaining a public score of any transactions that has ever been carried out in that system. A system of this kind does not need a central authority to uphold the reliability of the transaction ledger, as a replacement for, the reliability of the civic ledger is

[107] Sanz-Bas D, Rosal C, Alonso SLN, and Fernández MAE, 'Cryptocurrencies and Fraudulent Transactions: Risks, Practices, and Legislation for Their Prevention in Europe and Spain' *Laws* (2021)

[108] Sadhaseevan L, 'The Regulation of Crytpocurrencies in the Context of South Africa's Financial Sector' Unpiblished LLM Thesis, University of KwaZulu-Natal, 11 September 2019.

[109] Sadhaseevan L, 'The Regulation of Crytpocurrencies in the Context of South Africa's Financial Sector' Unpiblished LLM Thesis, University of KwaZulu-Natal, 11 September 2019.

guaranteed through the arithmetic of cryptography. For instance, in the Bitcoin procedure[110], whenever two parties take part in a payment deal, a log is generated showing that value has been transmitted to an "address" contained in a "wallet" of a party and into the others address contained in another wallet. This record of the transaction is transmitted to the network, as a verification that the funds being transmitted have not previously been transmitted somewhere else in the system. The role of verification is done by exceptional contributors on the system named "miners." Miners constantly receive broadcasts of dealings on the system and carry out verification of the transactions.

However, these verified transactions will not automatically become part of the transaction book. Instead, mining systems must use computing power to solve complex mathematical problems. Each group of confirmed transactions added to the distributed ledger is called a "block". Each block is cryptographically linked to all previously generated blocks and later generated blocks. This series of mathematically related blocks collectively records all transactions that occur in the system and is called a "blockchain"[111].

Considering the limitations of modern technology and computing power, the encrypted connection between each block in the blockchain is so strong that forgery is almost impossible. The computational complexity of creating a new block on the blockchain has been improved and adjusted so that all the mining power on the network creates a new block approximately every 10 minutes. This transaction can be integrated into the block immediately when it occurs for the first time. There a period until the next block is created. Transactions occurring at the same time when the last block is created, means transactions can be intertwined. After 10 minutes, a transaction becomes a block. After a transaction is integrated into the blockchain at the six-block level, it will be sent to the block after you write the block of the transaction. After five blocks are added to the chain, it is considered a complete "confirmation". This mechanism is designed to prevent double spending of Bitcoin.

[110] Lyndell K, 'Virtual currencies: regulatory and tax compliance issues', Nova Science (2014).

[111] Scott T, Blockchain Blueprint to dissecting the hidden economy: Smart contracts, Bitcoin and Financial technology, CreateSpace Independent Publishing Platform, 2016, 12.

2.3.3 Advantages & Disadvantages of decentralised virtual currency

Virtual and digital currencies have become more prominent through the development of diverse digital coins[112]. With the attractiveness of these currencies growing, several pros and cons can be acknowledged when using this payment system. Novel technologies, predominantly cloud-based and network technologies like block chains, suggest prospects for meaningful competition and innovation. Nevertheless, the regulation of payment structures ought to have objectives and competing policy at equilibrium. It also must preserve the balance between competition-driven invention, stability and efficiency as well as ensure integrity and confidence. Consequently, novel technologies like virtual currencies essentially should focus on sustaining some degree of efficiency and stability just like present electronic payments have, which will certainly show their advantages. Bitcoin being the most prominent and oldest digital currency will be used as an example in exploring the weakness the system and the ways in which these impacts consumers and businesses. [113] The probable pitfalls and benefits are outlined below.

2.3.3.1 Benefits of decentralized virtual currency

There are fundamental benefits of the usage of decentralized virtual currencies.

No Appropriation of Funds[114]

DVC offers safety from freezing and seizure of funds or wallets by governments during transactions since DVC is not centralised. Andreessen records that Bitcoin offers security and safety whenever one user transfers digital property to another through a decentralised system of trust that is non-reliant on or necessitate a central intermediary. Consequently, Bitcoin is devoid of government interference and the consumers who desire to transfer lump sum sums of currency, for instance, across many countries, can agree to take Bitcoin as a means of transaction. In addition, as previously alluded to, Bitcoin is not aided by a mediator like the Central Bank and hence government intervention is irrelevant except it is controlled in ways that assist in the process of being accepted as legal tender and thus a legitimate exchange in Kenya.[115]

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[112] Small S, 'Bitcoin: The Napster of Currency', 37 *Houston Journal of International Law* (2015), 581.

[113] Australian Payments Clearing Association, Submission 43 to the Senate Economics References Committee, *Inquiry into Digital Currency*, November 2014, 3.

[114] Stanford University, *Advantages of Bitcoin: Decentralized, Peer-to-Peer, Cryptocurrency*, 2010.

[115] Stanford University, *Advantages of Bitcoin: Decentralized, Peer-to-Peer, Cryptocurrency*, 2010.

Anonymity and Privacy[116]

Bitcoin dealings are principally done in private via the adoption of assumed names, and dealings can be undertaken during the consumer's own time in any geographical region minus going into a banking establishment. Customers therefore continue to be unidentified as a private key is designated for each user that merely shows their key digit without a name. Anonymity is describable dually: Nothing links organisations or individuals to the accounts acknowledged in the dealings and the fact that the wallet is hard to be traced back to its proprietor. And so, the entities in the Bitcoin deals are not declared explicitly by name, but by use of a Bitcoin address making it the chief advantage and enticements for consuming Bitcoin as a product. [117]

No Transaction or Minimal Costs[118]

During transactions, there are negligible or no operating costs involved. This is because Bitcoin, as a digital exchange, has no participation of a third party like banking establishments which have high charges for client transactions. What's more is that the Bitcoin system is free to use. As a consequence, institutions like the World Bank have been contemplating the use of decentralised virtual currencies due to this beneficial feature. Equally, arrangements like BitPesa offer reasonably priced access to making transactions with the intention of assisting individuals who are not able to pay for traditional banking charges when making transnational payments. In the long run this may result in banking institutions plummeting their transaction and banking subscriptions as Bitcoin extends and becomes popular. [119]

2.3.3.2 Pitfalls of decentralized virtual currency

Criminal Activities

Bitcoin like many DVC is unregulated and runs on anonymity, making it easier for individuals to utilise Bitcoin disbursements for unlawful or illegitimate undertakings. These deeds often comprise money laundering, tax evasion, fraud or theft, and terrorist financing, among others.

[116] Stanford University, *Advantages of Bitcoin: Decentralized, Peer-to-Peer, Cryptocurrency*, 2010.
[117] Stanford University, *Advantages of Bitcoin: Decentralized, Peer-to-Peer, Cryptocurrency*, 2010.
[118] Stanford University, *Advantages of Bitcoin: Decentralized, Peer-to-Peer, Cryptocurrency*, 2010.
[119] Stanford University, *Advantages of Bitcoin: Decentralized, Peer-to-Peer, Cryptocurrency*, 2010.

Moreover, as a consequence of the decentralised nature of Bitcoin, it is challenging for the enforcement of the law because of challenges relating to tracing the illegal undertakings and thus 'decentralised virtual currencies … are employed in ways that can possibly be used by ordinary currencies'[120]. An instance where such illicit use of Bitcoin is the *Silk Road* case whereby an individual would be able to order illicit goods and drugs on this website via Bitcoin. The state and the transnational battle against these cyber-criminal actions is a hard nut to crack for governments. [121]

Variation in Valuation

Due to the lack of a set currency value allocated to it as a scheme of payment the valuations fluctuate on a daily basis. This means that the exchange rates for Bitcoin experience variations. This potentially brings difficulties when an individual wish to accumulate Bitcoins, since the exchange rate never stays constant. Consequently, concerns are raised whether Bitcoin have to be controlled as a currency. It is worth noting of Bitcoin's prominence as a venture scheme, regardless of it being utilised in day to day actions; nevertheless, venture capitalist ought to be cognisant of the fluctuating feature of the exchange rate owing to the fact that consumers and businesses still use traditional system of payment as compared to Bitcoin for the sole reason of maintaining the value. This property makes Bitcoin a vulnerable payment scheme when compared to traditional methods like Electronic Funds Transfer (EFTs). [122]

Irrevocable Transactions

Presently there is inadequate security for users desiring to employ Bitcoin in their normal transactions because they prefer it as a means of payment with concerns about an erroneous transaction. Anonymity makes Bitcoin transactions irreversible, meaning that once payment is made to a wrong account, there is no charge back as the case is with normal bank transactions like 'PayPass' and credit card dealings. According to Moore and Christin this irrevocability renders Bitcoin transaction concerning a single or many intermediaries prone to an increased risk, for example, if the intermediary turns out to be bankrupt or leaves suddenly with user's deposits. For that reason, consumer protection holds an indispensable role in every undertaking

[120] Stanford University, *Advantages of Bitcoin: Decentralized, Peer-to-Peer, Cryptocurrency*, 2010.
[121] Stanford University, *Advantages of Bitcoin: Decentralized, Peer-to-Peer, Cryptocurrency*, 2010.
[122] Stanford University, *Advantages of Bitcoin: Decentralized, Peer-to-Peer, Cryptocurrency*, 2010.

when trading with Bitcoin thus ensuring users are well cognisant of the risks inherent when utilising this scheme.[123]

Instability of Bitcoin

Although Bitcoin has gained prominence in usage by consumers and businesses as a means of payment, not everyone in the society trust Bitcoin transactions due to the point that Bitcoin is not recognized as legal tender by many governments, hence it leads to it being unstable and a poor exchange. The key matter with appropriateness of Bitcoin is the anonymity of consumers. This renders the old banking establishments to continue being the most chosen way through which financial transactions are done. Consequently, consumers as well as businesses without Bitcoin accounts are not indebted to consent to being paid by individuals who use it as a means of payment. Additionally, the Finance Discipline Group (FDG) in Sydney's University of Technology pointed out that Bitcoin is highly esteemed in investment domains better than a 'medium of exchange' or currency. [124]

After considering the pros and cons of Bitcoin as a DVC, the enquiry is whether DVC is capable and should be deliberated on as store of value, medium of exchange and a unit of account when gauging the roles of money and whether it satisfies the meanings of legal currency and tender. This is pertinent when the intention is to ensure consumer protection under DVCs. As Brito and Castillo[125] during their consideration of DVCs within the realm of legal tender and money, posit that DVC transactions are not denominated in yen, euros, or dollars, as on PayPal. Instead, they are denominated in bitcoins. As a result, it is both a VC and a decentralized payment network. The currency's worth is determined by the value that people place on it, not by gold or government fiat. A DVC's dollar worth is decided on an open market, just like any other currency. This explanation demonstrates why DVC transactions are distinct from ordinary ones in that worth is assigned to DVC and the DVC network by society and network users, rather than by a government. To establish if DVC is legal tender, it is important to examine the roles of money and consequently the status of legal tender alongside the features of DVCs.

[123] Stanford University, *Advantages of Bitcoin: Decentralized, Peer-to-Peer, Cryptocurrency*, 2010.
[124] Stanford University, *Advantages of Bitcoin: Decentralized, Peer-to-Peer, Cryptocurrency*, 2010.
[125] Brito J and Castillo A,Mercatus Centre, *Bitcoin: A Primer for Policymakers*, 2013.

2.3.4 Decentralised virtual currency and the Roles of Money

The foregoing discussions thus beg the question surrounding the legal standing of Bitcoin and its position, or lack thereof, as currency. Its determination as currency or not guides its government recognition, legal acceptability and consequent consumer protection[126].

Medium of Exchange

Bitcoin, a DVC, can only be employed as a medium of exchange after being acknowledged as a way of disbursement for services or goods. Darling J believes that DVCs are a medium of exchange under the following circumstances: Things that move freely in the community end up with debt relief and full payment of goods. Regardless of the character or credibility of Davidson and Block, they point out that "if a commodity... has been valued only because of the services in their direct use (production or consumption), then they are appreciated because of their role in indirect exchange"[127]. As Davidson and Brock explained, "If it has an objective exchange value based on other purposes when it is used as currency, then it cannot be used as a currency object." The means of payment has added value, so Bitcoin functions as an intangible commodity and as a medium of exchange[128]. Graf also explained that Bitcoin serves as a medium of exchange because it has been used to create value on the network and does not have to be tangible for this role[129]. This shows that the design of modern disbursement systems is that tangibility is not a prerequisite of being a medium of exchange thus may comprise digital payment networks like Bitcoin. Likewise, Tucker pointed out that Bitcoin is associated with payment systems because of its connection to the blockchain that determines the sale and acceptance of Bitcoin worth[130]. The usage of Bitcoin is only controlled in certain nations, which is equivalent to the role of a medium for international exchanges. The cost depends on the user who buys digital currency on

[126] Mandjee T, 'Bitcoin, Its Legal Classification and Its Regulatory Framework' 15 *Journal of Business and Securities Law* (2014), 12.

[127] Davidson L and Block W, 'Bitcoin, the Regression Theorem, and the Emergence of a New Medium of Exchange' 18(3) *The Quarterly Journal of Austrian Economics* (2015) 313.

[128] Barnett W and Block W, 'Crash and Carry: Financial Intermediaries, the Intertemporal-Carry Trade, and Austrian Business Cycles' *Ethics & Politics* (2009) 455.

[129] 'Konrad Graf, Bitcoins: The Regression Theorem, and that Curious but Unthreatening Empirical World' Blog 27 February 2013 .

[130] Jeffrey Tucker, Bitcoin and Mises's Regression Theorem (September 2014) Liberty

the trading platform[131]. The only distinguishing feature of Bitcoin is that it will depreciate once it reaches its limit, but as the previous discussion shows, Bitcoin will perform its first function: currency as a means...just because it can be used by companies and consumers as exchange if they accept it as a means of payment.

Unit of Account

In order for Bitcoin to become a unit of account, Bitcoin needs to be measurable as a unit related to services or goods. Carlson posits that a currency unit means "the sum of commodities..…. which means all commodities exist in each currency unit"[132]. An attractive feature of DVCs is that they are changeable and divisible as similarity with electronic currency. According to Barber, Boyan, Shi, and Uzun, "this is the Achilles heel of the electronic money system (strictly anonymous)" because the denominations must be standardized so that they cannot be linked, which in turn leads to the calculation cost of the transaction. However, due to fluctuations in the exchange rate of DVCs like Bitcoin, it is occasionally problematic to know the precise price, so Bitcoin is all the time measured in Euros or U.S. dollars[133]. Therefore, it is not a disbursement scheme that allows operators to apply for credit cards or credit due to fluctuations in value, because they are not government legal tender[134]. Bitcoin is mainly used as a trading platform. In the past two years, the transaction volume of Bitcoin goods and services has increased slightly, so it can be compared to a unit[135]. An instance is the Winkdex index, which is a track fashioned around the price of Bitcoin[136]. It is safer. Therefore, although the exchange rate of Bitcoin fluctuates, it can be regarded as a unit of measurement whenever utilised as a disbursement scheme.

Store of Value

After all, money must have some store of value. This role is usually challenging to achieve since the "value" of Bitcoin is intangible, so it is hinged on how individuals receive goods in Bitcoin

[131] Federal Reserve Bank of Boston , Stephanie Lo and Christina Wang, *Bitcoin as Money*, 2014.
[132] Carlson D, Money as Measure, 33 *Cardozo Law Journal* (2012) 2543.
[133] Barber S, Boyen X, Shi E and Uzun E, Bitter to Better - How to Make Bitcoin a Better Currency, 7397 *Financial Cryptography and Financial Security* (2012).
[134] George O, Bridging Bitcoin's Gender Gap, 12(2) *New York University Journal of Law and Business* (2016), 440.
[135] Pagliery J, *Bitcoin and the Future of Money,* Triumph Books, 2014, 3.
[136] 'Jose Pagliery: Winklevoss Twins Launch the Bitcoin 'Winkdex' 20 February 2014 CNN Money

transactions. In Bitcoin transactions; nevertheless, digital currency is deposited electronically (in the wallet) and will not be used instantaneously, indicating that Bitcoin can perform this function if there are multiple Bitcoin reserves for future use. It is that the value of Bitcoin fluctuates differently, depending on the public's acceptance of Bitcoin, so the only exception is the value that may fluctuate between Bitcoin and the "save" function. Butler and Boylan also pointed out[137] that if the savings function of all major currencies is severely damaged, whether it is due to unsustainable monetary and fiscal guidelines around the world, or due to a universal reluctance to permit important relative appreciation, venture capitalist must find alternatives. This clearly shows that DVCs can be used as a store of value.

Although Bitcoin has its shortcomings as mentioned above, they can still be used as investment and profit storage to stimulate capital growth. Regarding if Bitcoin fulfills the function and definition of virtual currency provided by Financial Action Task Force (FATF), the definition states: "A digital value representation that can be digitally traded, which can be used as (1) an exchange medium; (2) accounting unit; (3) a store of value in any jurisdiction, but not legal tender (that is, if offered to a lender, it is a valid legal tender offer)[138]. Bitcoin is deliberated to fulfill the role of money; nevertheless, the query lingering is if Bitcoin is regarded as legal currency hence a legal tender.

2.4 Self-regulation framework of decentralised virtual currency

Self-regulation frameworks typically involve administration and governance within the community[139]. Some operators of blockchain technology believe that a central approach to management and regulation will limit access and the freedoms enjoyed alongside it[140].

Blockchain technology is the basis of decentralised virtual currencies. It uses a distributed ledger system that secures information within the system and carries out distribution among the

[137] 'John Butler and Jon Boylan: Is Money a Store of Value?', Financial Insider (online), November 2010

[138] Financial Action Task Force, Virtual Currencies – Key Definitions and Potential Anti Money Laundering/Counter Terrorist Financing Risk, June 2014.

[139] 'Giovanni Perani: Blockchain: Is Self Regulation Sufficient?' *Medium,* 2 May 2018 https://medium.com/coinmonks/blockchain-is-self-regulation-sufficient-5bb68ac7e33f on 20 April 2021.

[140] Joseph Young, 'Interview: Vitalik Buterin on Scaling Ethereum, Its Popularity in Asia and ICOs' *Bitcoin Magazine*, 8 June 2017 link on 20 April 2021

users therein[141]. The nature of the system makes all blocks within it visible to all participants. The systems maintains records of any edits as well as deletions, providing an alert to all users in the event of deletion[142]. This security feature promotes transparency and accountability as it inhibits any manipulation and fraudulent behaviour.

Further, the technology utilizes smart contracts as the basis of each transaction. These contracts contain the terms and conditions governing the transaction without the need for an intermediary. The execution of these smart contracts is based on automated algorithms and creates a layer of trust between the parties[143]. It requires permissions and cryptography to ascertain the identity[144] of the user preventing tampering and access by unauthorized persons.

Access to transaction records allows users to verify information without the need for a third party of intermediary. The system also ensures access to free-flowing information through the distributed ledger. The fair and relatively affordable access to the information informs better decisions and increases efficiency. The information efficiency and decentralized nature minimizes instances of concentration of power. Some virtual currency exchanges, for example *Paxful* and *Luno*, have provisions that ensure the transfer of cryptocurrencies in the administration of a deceased's estate, provided all relevant documentation is presented[145]. This ensures that the rightful beneficiaries receive their due.

It is evident that despite the decentralised nature, there exists a minimum standard for the varied decentralised virtual currencies. The system provides its own checks and balances, albeit not so thorough. Avenues for redress are not always available making it more difficult to enforce rights under the smart contracts.

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[141] 'Heckstall V: Blockchain Technology- The Key to Self Regulation in the Digital Revolution' *Medium,* 28 March 2018 https://medium.com/blockchain-technology-the-key-to-self-regulation-in-the-digital-revolution-4c9303094fba on 20 April 2021.

[142] Distributed Ledgers Technology and Artificial Intelligence Taskforce, Emerging Digital Technologies for Kenya: Exploration and Analysis, 2019, 29.

[143] Heckstall V: Blockchain Technology- The Key to Self Regulation in the Digital Revolution' *Medium,* 28 March 2018 https://medium.com/blockchain-technology-the-key-to-self-regulation-in-the-digital-revolution-4c9303094fba on 20 April 2021.

[144] Distributed Ledgers Technology and Artificial Intelligence Taskforce, Emerging Digital Technologies for Kenya: Exploration and Analysis, 2019, 30.

[145] https://www.luno.com/help/en/articles/11000093637?contact_reason=29

2.5 Consumer risks with decentralised virtual currencies

A myriad of risks is associated with decentralised virtual currencies including volatility, cyber and structural risks.. The Silk Road scandal[146] where sale of illegal drugs and money laundering took place and the Mt Gox[147] scandal where 740,000 bitcoin were stolen from customers raised fundamental issues around consumer protection regarding virtual currencies. Regardless of the enhanced security that decentralized virtual currencies may bring, cyber risks, for example hacking, remain a material issue These issues include sensitivity to fraudulent activities, cyber-attacks and devaluation of currency[148] occasioned by cyber, volatility and structural risks.

Volatility of Decentralised virtual currencies

Decentralised virtual currencies, being a creation of a few individuals, can be affected by any manner of thing. For example, there was a recent crash in the cryptocurrency market[149] following tweets by the CEO of Tesla, Elon Musk. On more than one occasion, his utterances have affected the market and the price of the currencies. On this specific occasion, he stated that Tesla would no long be receiving bitcoin as a form of payment since their mining has huge environmental implications. This volatility is one aspect which presents a risk to Kenyan users. It is difficult to regulate what affects the market entirely.

The risk of loss due to hacking or the loss of private keys

Yermack[150] notes that no deposit insurance for decentralized virtual currency balances exist compared to those in banks. This means that once a user has lost their currency, there is no

[146] 'Silk Road: The Dark Side of Cryptocurrency' <https://news.law.fordham.edu/jcfl/2018/02/21/silk-road-the-dark-side-of-cryptocurrency/> on 1 August 2020.

[147]'Matthew Beedham: A Brief History of Mt. Gox, the $3B Bitcoin Tragedy That Just Won't End' *Hard Fork The Next Web*, 14 March 2019 <https://thenextweb.com/hardfork/2019/03/14/a-brief-history-of-mt-gox-the-3b-bitcoin-tragedy-that-just-wont-end/> on 1 August 2020.

[148] Griffiths ME, 'Virtual Currency Businesses: An Analysis of the Evolving Regulatory Landscape' 16 30.

[149] '@MattWallace888: Elon Musk: Makes Bitcoin go down 100billionin market cap with Tesla no longer accepting it.' *Twitter*' https://twitter.com/MattWallace888/status/1393930223004098564?s=20 on 19 May 2021.

[150] Yermack D, 'Is Bitcoin a real currency? An economic appraisal', National Bureau of Economic Research (2013).

reprieve or compensation. Ali *et al*[151] indicate that 146 strains of malware designed to steal bitcoins from individuals' computers have been discovered. The malware steals by obtaining private keys from digital wallets or switching addresses to deliver funds erroneously. This exposes consumers to loss of their currency.

A change in structure can happen at any time putting consumers' funds at risk. For example, the Decentralized Autonomous Organization hack where a bug in the code allowed a hacker to withdraw funds from other users. Following this, the developers employed a hard fork[152] to protect the remainder of the funds and ensure the rightful owners received their money.

Irreversibility and lack of recourse mechanisms

Yet another risk is that a transactor could erroneously send decentralized virtual currency balances to an incorrect or non-existent address. The lack of a central authority or intermediary means that there is no mechanism to reverse unintended transactions. Most electronic payment systems provide mechanisms to protect consumers against unauthorized transfers, and indeed such protections are often codified into law. The absence of such protections in decentralized virtual currency poses risks to consumers[153].

2.6 Conclusion

Based on the fore going, it is evident that decentralized virtual currencies bare various monetary advantages and they encourage intercontinental trade and connections. Nevertheless, there exist glaring consumer issues that require attention by governments and the international community. Literature reveals various incidences of loss of significant amounts of balances by consumers. Their volatility, occasioned by their reliance on fiat currency, further cements the need for proper

[151] Ali, S.T., Clarke, D. and McCorry, P, 'Bitcoin: Perils of an unregulated global P2P currency' International Workshop on Security Protocols (2015).

[152] 'Frankfield J: Hard Fork (Blockchain), *Investopedia* 4 March 2021' https://www.investopedia.com/terms/h/hard-fork.asp on 19 March 2021: A hard fork in blockchain technology is a change within a network's protocol that rendered previously valid transactions invalid or vice versa.

[153] Bohme R and others, 'Bitcoin: Economics, Technology, and Governance', 29 Journal of Economic Perspectives, (2015).

tailored consumer protection frameworks. There is a gap related to the consumer risks associated with decentralized virtual currencies. An extensive portion of literature in Kenya and the world over provides informative descriptions of structures and processes of decentralized virtual currencies. The literature also focuses mainly on issues of terrorist financing, taxation, and money laundering, neglecting consumer protection. This presents a clear gap because although there is an increased uptake of decentralized virtual currencies and continued increase in the literature on consumer risks, consumer protection regulatory frameworks covering decentralized virtual currencies are minimal. In summation, decentralized virtual currencies present risks to consumers occasioned by their design. Their decentralized, anonymous and irreversible nature introduce a complexity in the assurance of consumer protection.

3 CHAPTER THREE: REGULATORY FRAMEWORK FOR CONSUMER PROTECTION AND DIGITAL PAYMENT SYSTEMS IN KENYA

3.1 Introduction

The adoption rates of decentralized virtual currency in Kenya are prodigious. The consequent efforts and implications, both negative and positive, warrant the existence of an efficient consumer protection regulatory framework as evidenced by the discussion in the previous chapter. Decentralized virtual currencies are a form of digital currency which may fall under the purview of digital payment systems in Kenya. Digital payment systems constitute of financial services and instruments that rely on digital technologies[154].

Digital Payment Systems (DPS) are championed for financial inclusion as they allow cheaper and more convenient access to financial services. Digital payment Systems have a myriad of uses including investment, currency and payment services. They provide an interaction between various currencies and the economy exposing risks and therefore warranting the existence of a framework that regulates conduct within the system. The nature of digital financial systems engenders a variability in regulatory and protection regimes[155] as there is a diversification in the range of regulators. Further the nature of certain Digital payment systems, for example, non-recognition as legal tender, creates further legal ambiguities. Regulation ensures the safeguarding of consumers and enterprises within the system from the various risks. Decentralized VC run into peculiar regulation challenges due to their nature.

Furthermore, this thesis chapter acknowledges the interaction between regulation and innovation in Kenya with a particular focus on institutional arrangements and regulatory tools. This is intended to give deeper understanding of Kenya's regulatory capacity to address the consumer risks posed by decentralized virtual currencies. The added focus of payment systems regulatory framework is because decentralized virtual currencies could fall under digital payment

[154] World Bank Group, *Digital Financial Services*, 2020, 1.
[155] Malady L, 'Consumer Protection Issues for Digital Financial Services in Emerging Markets'.

systems.[156] A payment system is a generally accepted transfer of value between parties in a transaction[157]. An efficient payment system gives value to the completion of a transaction without third party confirmation and within a secure environment[158]. Ergo, decentralized virtual currencies can be considered to fall within the definition of a payment system. Consenting parties have accepted it as a transfer of value, allowing them to give value to the completion of a transaction within the blockchain network.

This study hypothesizes that the existing consumer protection and digital payment systems regulatory frameworks require codicil in order to be inclusive of the risks under decentralized virtual currency. What inadequacies, if any, necessitate a more robust regime? This chapter examines the existing relevant consumer protection and digital payment systems regulatory framework in Kenya and what inadequacies in the framework expose Kenyans disproportionately to consumer risks within decentralized virtual currency in pursuit of an answer.

3.2 Consumer Protection Regulatory Framework

The ***Constitution of Kenya 2010 (COK)***, the ground law[159], contains a bundle of rights and freedoms enjoyed in Kenya[160] unless limited by law[161]. Of notable importance to cryptocurrency are: Firstly, that persons' information, property and communications are protected and not infringed[162]. This includes access by parties without consent to access. In the cases of *Kenya Human Rights Commission v Communications Authority of Kenya & 4 others [2017] eKLR* and *Okiya Omtatah Okoiti v Communication Authority of Kenya & 8 others [2017] eKLR*, the courts posited that a user's data could only be kept and shared upon their consent. In decentralized virtual currency transactions, users consent to the publication of their data in the public ledger by

[156] Malala J, 'Mobile Payments Systems in Kenya: A New Era or False Dawn and An examination of the Legal and Regulatory Issues Arising 'Post" Financial Inclusion' PHD Thesis, University of Warwick, September 2019.
[157] Humphrey BH, 'Payment Systems: Principles, Practice and Improvement' 23 *World Bank Publication* (1995).
[158] Sifers RW, 'Regulating Electronic Money in Small-Value Payment Systems: Telecommunication Law as a Regulatory Model' (1996) 701.

[159] Section 3, Judicature Act (Cap 8 Laws of Kenya).
[160] Chapter IV, Constitution of Kenya (2010).
[161] Article 24, Constitution of Kenya (2010).
[162] Article 31, Constitution of Kenya (2010).

virtue of their participation as this is a feature of the system. Consequently, the issue of data privacy would not arise.

Secondly, every person may express themselves freely[163] including seeking, imparting and receiving information and ideas[164] so long as it respects others' rights[165]. This protects persons' rights to discovery of new components and innovations, in this case, engaging in new forms of financial technologies and services. This allows the willful participation in new emerging innovations like decentralized virtual currencies. Thirdly, the right of access to information from private entities like VC companies should the information be necessary in exercise or protection of another right or a fundamental freedom[166]. This ensures that every person engaging in new financial technology services is protected from private entities that take advantage of an increase in uptake to try and swindle the citizens by falsely representing the value of their products or services.[167] An example is when the Central Bank of Kenya issued a warning regarding crypto assets and advised Kenyans to proceed with caution. Fourth, consumer rights are guaranteed[168]. The COK 2010, reiterated the rights that a consumer enjoys: a right to information that is necessary to ensure the enjoyment of full benefit from goods and services[169]; the right to protection of their economic interests[170] and; to compensation resulting from any loss from faulty goods and services[171] offered by either public entities or private persons[172]. Parliament carries the onus to ensure enactment of consumer protection legislation[173]. Lastly, access to justice by all is guaranteed[174].

The ***Competition Act*** holds relevance as its main object is to promote social and economic welfare of Kenyan consumers as it enables exercise of the rights enshrined in the constitution of

[163] Article 33(1), Constitution of Kenya (2010).
[164] Article 33(1)(a), Constitution of Kenya (2010).
[165] Article 33(1)(3), Constitution of Kenya (2010).
[166] Article 35, Constitution of Kenya (2010).
[167] Samora Marshel, 'The Regulation of Virtual Currencies in Kenya' (Unpublished Master's Thesis, University of Nairobi 2017).
[168] Article 46, Constitution of Kenya (2010).
[169] Article 46(1)(b), Constitution of Kenya (2010).
[170] Article 46 (1)(c), Constitution of Kenya (2010).
[171] Article 46(1)(d), Constitution of Kenya (2010).
[172] Article 46 (3), Constitution of Kenya (2010).
[173] Article 46(2), constitution of Kenya (2010).
[174] Article 48, Constitution of Kenya (2010).

Kenya. The Act is all-encompassing and far reaching into all sectors including digital finance. Issuers and movers of DVC are prohibited against unconscionable conduct[175].

The ***Consumer Protection Act***[176] is elemental to consumers' guarantee to their rights. The Act makes no specific mention of decentralized virtual currencies but recognizes online agreements[177]. The Act requires sufficient disclosure of information relating to the agreement[178] and ensuring the consumer receives a copy of the same[179], providing an opportunity for the consumer to accept or deny[180]. The Act further allows for the cancelation of the agreement under certain circumstances: where there was no full disclosure and no express opportunity to decline or accept the agreement.

The ***Data Protection Act*** operationalizes Article 31 of the *COK* and exists to manage the handling of personal data and provide for the enforcement of rights. Financial service provision in general requires the collection of a variety of personal data. Occasionally, the data may be stored or transferred by and between various participants within the system. The nature of DVC is that transaction records are stored on a public ledger. This feature ensures transparency but may be a risk as it contains various personal information of users.

3.3 Digital Payment Systems Regulatory Framework

3.3.1 International Regulatory Framework

The Constitution of Kenya provides for the application of international law general rules in Kenya[181]. Consequently, various international instruments would apply to decentralized virtual currencies in Kenya where made relevant.

[175] Section 56, Competition Act (No.12 of 2010).
[176] Consumer Protection Act (2012).
[177] Section 2, Consumer Protection Act (2012): An internet Agreement is a consumer agreement formed by text-based internet communications.
[178] Section 31(1), Consumer Protection Act (2012).
[179] Section 32(1), Consumer Protection Act (2012).
[180] Section 31(2), Consumer Protection Act (2012).
[181] Article 2(5), Constitution of Kenya (2010).

The ***United Nations Guidelines for Consumer Protection*** contains principles for the betterment of consumer protection. The objectives of the principles are: to ensure maintenance of sufficient consumer protection; to ensure production mirrors consumer demand; to spur ethical conduct among producers and distributors; to promote sustainability; to curb abusive business practices and to facilitate international partnership[182]. The guideline provides for continued adoption of consumer protection regulations to meet the needs of changing forms of business. Further, member countries of the United Nations Charter are required to legislate instruments that consummate the provisions of guidelines in relation to electronic commerce[183] as well as financial services[184]. The guidelines further call for the review of existing provisions to encompass the special nature of electronic transactions and processes[185] and consider benchmarks from other countries[186].

The ***OECD Guidelines for Multinational Enterprises*** are non-binding proposals to multinational corporations operating in OECD party states. The cross-boundary nature of decentralized virtual currencies eliminates geographical barriers to their issuers and users. These guidelines are intended to ensure that participating institutions employ fair business practices and responsible business conduct. The guidelines provide for upholding of consumer interests[187] including by ensuring that consumers have adequate information to make informed choices[188] and ensuring consumer education and sensitization[189]. Following the complexity of the inter boundary nature of decentralized virtual currencies, the guidelines encourage the multinationals to self-regulate.

[182] United Nations Guidelines for Consumer Protection (2016).
[183] Clause 63, United Nations Guidelines for Consumer Protection (2016).
[184] Clause 66, United Nations Guidelines for Consumer Protection (2016).
[185] Clause 64, United Nations Guidelines for Consumer Protection (2016).
[186] Clause 65, United Nations Guidelines for Consumer Protection (2016).
[187] Clause 81, OECD Guidelines for Multinational Enterprises (2011).
[188] Clause 85, OECD Guidelines for Multinational Enterprises (2011).
[189] Clause 89, OECD Guidelines for Multinational Enterprises (2011).

3.3.2 National Regulatory Framework

The ***Central Bank of Kenya Act***[190], established the Central Bank of Kenya (CBK) charged with general governance of the Kenyan currency and all other related matters[191]. It recognizes various entities involved in the discharge of monetary activities including banks, bureaus, dealers and all other financial institutions. Currency is defined as bank notes and coins issued by the CBK[192] and that only such notes and coins are legal tender in Kenya[193]. Consequently, virtual and cryptocurrency are not legal tender in Kenya and they are neither issued by the Central Bank of Kenya nor foreign currency. The central bank of Kenya has monetary policy functions, holding the monopoly on approving legal tender[194]. Decentralized virtual currencies however circumvent this monopoly as they are issued by private entities.

The Central bank of Kenya oversees the systems of transfer of funds between participants (payment systems)[195] as well as regulates the conduct of digital financial products[196]. A digital financial product is one through which a person makes a digital investment, manages digital risk or makes non-cash payments[197]. Digital financial systems are defined as the provision in relation to a digital financial product, financial product advice, market, administrative or management services or credit. Decentralized Virtual Currencies meet the basic definition as digital financial products, yet many countries treat DVCs as property accruing relevant applicable gains taxes. The elimination of a mediating regulatory authority such as the Central Bank in VC transactions reduces the overall cost of the transaction[198] and eliminates the need for trust that may hinder the frequency of transactions, and at the same time institutes irreversibility of transactions. As a result, should a service paid for not be rendered, there is no body for which redress can be sought.

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[190] Central bank of Kenya Act (No. 10 of 2010).
[191] Section 4, Central Bank of Kenya Act (No.10 of 2010).
[192] Section 2, Central Bank of Kenya Act (No.10 of 2010).
[193] Section 22(1), Central Bank of Kenya Act (No.10 of 2010).
[194] Okonjo J, 'The Impact of Convergence of Mobile Telecomms and Financial Services on Regulation of Mobile Telecomms' (2014).

[195] Section 4A (1)(d), Central Bank of Kenya Act (No.10 of 2010).
[196] Section 4A (da), Central Bank of Kenya (Amendment) Act (2020).
[197] Section 2A(1), Central bank of Kenya (Amendment) Act (2020).
[198] Joseph Githinji Choto, 'Virtual Currency as a Medium of Exchange in Kenya' (Unpublished Master's Thesis, United States International University 2018).

The ***Capital Markets Act***[199] recognizes technology driven finance and gains relevance where financial institutions and commodities are issued of the Nairobi Stock Exchange. The Capital Markets Authority (CMA)[200] is tasked with the supervision of Kenyan capital markets[201] to ensure orderly, fair and efficient dealings. The Act grants authority to the Capital Markets Authority to regulate the use of electronic commerce while dealing securities[202]. Securities in Kenya are described to include shares, debt instruments, rights options, futures relating to assets or property, depository receipts and asset backed securities[203]. The broad nature of the definition allows cryptocurrencies to be prescribed as securities. In *Wiseman Talent Ventures Limited v Capital Markets Authority* [2019] eKLR, Wiseman sought to issue an Initial Coin Offer (ICO) and stated that the CMA had no authority to deal with cryptocurrencies. The court applied the '*Howey Test'- SEC v. W.J. Howey Co., 328 U.S. 293* [1946] *("Howey")*; an "investment contract" is considered in force when there is investment of money in a common enterprise with a reasonable expectation of profits to be derived from the efforts of others. The test applies to any transaction regardless of any typical security characteristics. It takes into account the form of the instrument (in this case VCs), and the manner in which it is offered, sold and resold in analyzing whether security laws apply.

The court held that in the absence of specific legal provisions, cryptocurrencies are interpreted as securities as they involve investment of money in a common enterprise with profits to be derived from the efforts of others- satisfying the threshold of the '*Howey Test'*. This would allow participants of cryptocurrencies to be protected as holders of securities. Ordinarily, issuers of securities are required to maintain internal controls and to adhere to reporting requirements and standards[204]. Issuers of cryptocurrencies maintain a public ledger of transactions and rely on blockchain technology to maintain controls. The clear declaration of them as securities would make the processes official. The global debate as to whether cryptocurrencies should in fact be treated as security or currency rages on, and the varying national positions on the issue results in differentiated legal regimes application, increasing market volatility.

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[199] Capital Markets Act (No. 15 of 2018).
[200] Section 5, Capital Markets Act (No. 4 of 2012)
[201] Section 11, Capital Markets Act (No. 15 of 2018).
[202] Section 11(3)(c), Capital Markets Act (No. 15 of 2018).
[203] Section 2, Capital Markets Act (No. 15 of 2018).
[204] Section 30 (G)(A)(1), Capital Markets Amendment Act (2018).

The ***National Payments Systems Act***[205]provides for the governance of payment systems and their providers. Payment systems effect payment, facilitate money circulation and include any institution and procedure related to the system[206]. This may include the decentralized virtual currency system as it is at times used to effect and facilitate money movement between those who consent to it. The volumes and values of participants are pieces of information required to be provided to the Central Bank of Kenya[207]. This would allow flagging of any suspicious amounts and activities and may curb money laundering[208].

Consequent to decentralized virtual currency not being considered legal tender or currency in Kenya, without government backing and relatively lower levels of stability in value, persons who accept DVCs as a means of payment are exposed to relatively higher risks of value devaluation owing to the erratic changes in beliefs and opportunities[209]. There have also been cases of manipulation of prices of cryptocurrencies. The rise in the price of Bitcoin in 2013 for instance, is attributed to suspicious purchases and a rise in prices at the Mt. Gox Bitcoin currency exchange[210].

The ***National Payment System Regulations*** provide for the authorization of payment system providers[211] and well as the necessary information[212] and disclosure requirements[213]. It provides for redress by providing for receipt of complaints and their resolution[214]. This allows grievances to be heard and cleared. A majority of DVC ecosystems have decentralized authority mechanisms[215]. There is no central server or governing body, and any users have the ability to contribute resources to the set mechanism a feature referred to as consensus-verification[216].

[205] National Payments Systems Act (No.39 of 2011).
[206] Section 2, National Payments Systems Act (No.39 of 2011).
[207] Section 20(1)(b), National Payments Systems Act (No.39 of 2011).
[208] Section 20(3)(b), National Payments Systems Act (No.39 of 2011).
[209] Wilko Bolt and Maarten RC van Oordt, 'On the Value of Virtual Currencies' (Bank of Canada 2016) Bank of Canada Staff Working Paper.
[210] Neil Gandala and others, 'Price Manipulation in the Bitcoin Ecosystem' (2018) 95 Journal of Monetary Economics 86.
[211] Section 4, National Payment System Regulations (2014).
[212] Section 29, National Payment System Regulations (2014)
[213] Section 35, National Payment System Regulations (2014).
[214] Section 39 & 40, National Payment System Regulations (2014).
[215] Joshua Baron and others, *National Security Implications of Virtual Currency: Examining the Potential for Non-State Actor Deployment* (RAND 2015).
[216] Baron and others (n 117).

Consensus however may take time as it requires multiple users to agree on the best course of action otherwise small groups of fraudulent users may threaten the security of the decentralized scheme. Other studies however propose a semi-centralized VC system distributed among a restricted set of participants[217]. In order to integrate the VC ecosystem better into international finance and payment systems, regulators may want to reassess the policies that leave the ecosystem unregulated and prescribe an active oversight mechanism[218].

The ***Money Remittance Regulations***[219] require the licensing of institutions offering money remittance services or remittance of any representation of monetary value without the creation of accounts in the payer or payee's names[220]. The said institutions must also comply with anti-money laundering regulations[221] which are wide enough to include blockchain technology and trade institutions. In *Lipisha Consortium ltd & Another v Safaricom Ltd* [2015] eKLR, Safaricom suspended the access to Mpesa by Lipisha Consortium and Bitpesa as they were remitting money using bitcoin without approval from the Central Bank of Kenya. Safaricom argued that the lack of fulfillment of KYC requirements occasioned by the anonymous nature of the transactions put them at risk. The court agreed in favor of Safaricom. Acceptance of decentralized virtual currency in Kenya minimizes such losses where clients cannot access their funds due to substantive and procedural issues.

The ***Computer Misuse and Cyber Crimes Act***[222] is intended to address offences relating to computer systems. The Act established the National Computer and Cybercrimes Coordination Committee[223] tasked with providing counsel to the government on issues relating to cybercrime, blockchain technology and critical infrastructure and frameworks[224]. The Act further prohibits transactions and online actions like fraudulent use of electronic data[225] and computer fraud[226] and

[217] Baron and others (n 117).
[218] Gandala and others (n 112).
[219] Money Remittance Regulations (2013).
[220] Section 4, Money Remittance Regulations (2013).
[221] Section 37(1), Money Remittance Regulations (2013).
[222] Computer Misuse and Cyber Crimes Act (No 5. Of 2018).
[223] Section 4, Computer Misuse and Cyber Crimes Act (No 5. Of 2018)
[224] Section 6, Computer Misuse and Cyber Crimes Act (No 5. Of 2018).
[225] Section 38, Computer Misuse and Cyber Crimes Act (No 5. Of 2018).
[226] Section 26, Computer Misuse and Cyber Crimes Act (No 5. Of 2018).

allows for the forfeiture of assets or monies following a court order[227] with regard to the offences. Under Part V of the Act, there is acknowledgement of the use of International cooperation to curb and prosecute the offences despite a person's domicile. This is relevant due to the cross boundary nature of decentralized virtual currency transactions and dealings. This part of the Act is supported by the *Extradition (Contiguous and Foreign Countries) Act*[228] and the *Mutual Legal Assistance Act*[229].

The ***Kenya Information and Communications Act*** legitimizes digital and virtual contracts as it gives them equal standing as physical contracts[230]. This would render agreements between the issuer of DVC, buyer and seller, valid and legally enforceable. The Consumer Protection Regulations existing under the Act ensure protection against any unfair practices and anti-competitive behavior.

The ***Anti-Corruption and Economic Crimes Act***[231] prohibits various actions that could amount to economic crimes including dealing with public property[232]. Cryptocurrencies allow the transfer of payments between individuals and allow anonymous identities within certain systems. This loophole could allow one to get away with economic crimes as there is not necessary flagging of activities and no requirement to provide information on the source of funds.

The ***Proceeds of Crime and Anti-Money Laundering Act*** criminalizes the use of proceeds of crime and money laundering. In its definition of proceeds, it does not restrict itself to money but also includes property[233]. The use of proceeds of crime and laundered money through blockchain technology would be a criminal offence. Under the act, any institution within the system would have upon it a reporting obligation.

The ***Banking (Amendment) Act*** [234] governs the conduct of various financial institutions as defined within the Act other than the Central Bank of Kenya[235]. Financial institutions are

[227] Section 44, Computer Misuse and Cyber Crimes Act (No 5. Of 2018).
[228] Cap 76, Laws of Kenya.
[229] Cap 71 A, Laws of Kenya.
[230] Section 83, Kenya Information and Communications Act (No. 25 of 2015).
[231] Anti-Corruption and Economic Crimes Act (No. 12 of 2012).
[232] Section 45(1), Anti-Corruption and Economic Crimes Act (No. 12 of 2012).
[233] Section 2, Proceeds of Crime and Anti-Money Laundering Act
[234] Banking (Amendment) Act (No. 25 of 2016).
[235] Section 2, Banking (Amendment) Act (No. 25 of 2016).

required to obtain licensing[236] and provide information through reporting[237]. Their business conduct on trading and investments is restricted[238] to ensure protection of the whole system as well and consumers. Recognition of entities that are involved in the cryptocurrency system at any point, for examples processing of payments and loading of wallets, adds an extra layer of protection.

Decentralized virtual currency are bought, sold and traded on digital platforms/ digital markets. This subjects them to a 1.5% tax rate on the gross transaction value, according to the amendment to the ***Income Tax Act*** introduced by the ***Finance Act 2020***[239]. Due to its digital nature, decentralized virtual currency are subjected to the taxes that apply to the digital economy. The Kenya Revenue Authority (KRA) however notes that currently, the precise definition of a digital market place and those who will be subject to this tax is not yet clear[240]. The KRA asserts that DVC systems fall under the digital market place designation as they allow interactions between buyers and sellers electronically[241]. This incident of taxation has the potential to improve regulation of decentralized virtual currency in Kenya which could in some way increase consumer protection. An avenue that is at yet not fully employed.

Kenyan laws do not clearly define decentralized virtual currency. The ***Law of Succession Act***[242] governs the administration and distribution of a deceased person's estate. DVCs if considered part of digital assets would be subject to the challenges that exist in the inheritance of items that fall in this category of assets, the main one being access[243]. Terms of Service Agreements (TOSA) between service providers and users are vital in determining who is eligible to access a digital asset in the case of death or incapacitation of the original owner[244]. But in the internet, service agreements tend to change making the process complicated to an heir. Writing a will and

[236] Section 4, Banking (Amendment) Act (No. 25 of 2016).
[237] Section 27-31, Banking (Amendment) Act (No. 25 of 2016).
[238] Section 12, Banking (Amendment) Act (No. 25 of 2016).
[239] Section 12E, Finance Act (2020).
[240] Bitcoin.com, 'New Kenyan Digital Tax to Affect Crypto Platforms' (*Bitcoin News*, 2020) <https://news.bitcoin.com/new-kenyan-digital-tax-to-affect-crypto-platforms/> accessed 25 July 2021.
[241] Bitcoin.com (n 148).
[242] Law of Succession Act (2012).
[243] Family Division of the High Court, *Simplified Resource Tool on Inheritance and Related Family Law Practice in Kenya* (Family Division of the High Court 2018).
[244] Family Division of the High Court (n 151).

letting the executor consolidate all the assets will not suffice in this case. The death or loss of mental capacity sans instructions on how to access the virtual wallet of the said party may likely lead to loss of VC assets. This gap prevents the intended beneficiaries from receiving their rightful inheritance unless the decentralized virtual currencies' policies make provisions for the same.

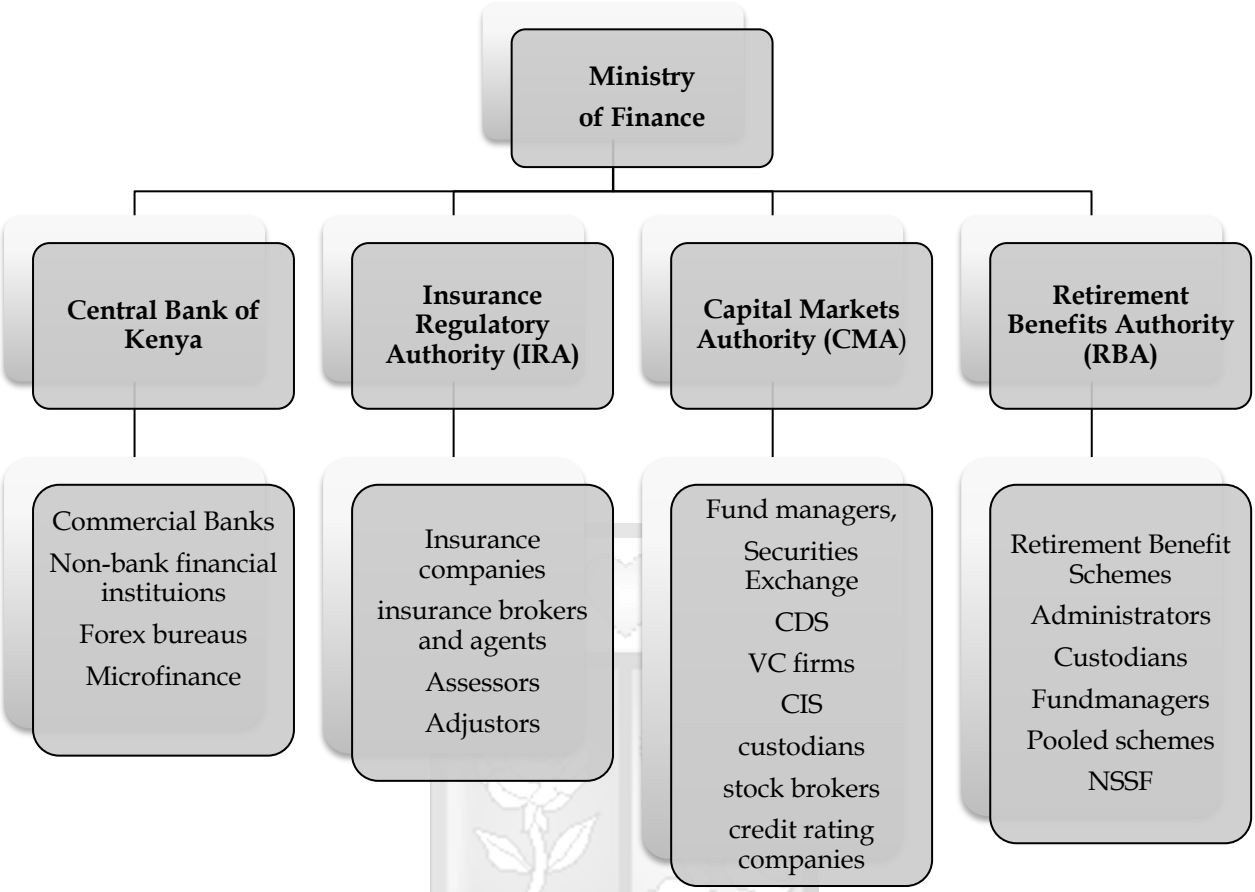
3.4 Kenyan Regulatory Approach to Digital Payment Systems Regulation

The Kenyan regulatory approach is both broad as some regulations are drafted broadly and inclusively allowing interpretation and encompassing of different aspects. The approach also involves active regulation with regulatory authorities for example the Central Bank of Kenya and the Capital Markets Authority, having legislatively and supervisory powers with minimal accountability mechanisms[245].

3.4.1 Institutional/Functional Approach

In Kenya, financial services oversight and regulation is characterized by different subsectors[246]. Similar activities within the financial sector in Kenya are regulated alike. Institutions carrying out similar functions fall under the jurisdiction of the same regulator. A different regulator exists for the various industries/functions. This is illustrated in the table below.

[245] Gakeri J, 'Regulating Kenya's Securities Market: An Assessment of the Capital Market's Enforcement Jurisprudence' 20 *International Journal of Humanities and Social Science* (2012).
[246] Mutuku N, 'Case for Consolidated Financial Sector Regulation in Kenya' *Retirement Benefits Authority* (2008).



Entities within the same industry fall under the ambit of the same regulatory authority. For example, insurance companies and assessors are answerable to the Insurance Regulatory Authority. Both these types of entities deal with the value of property and compensation. Entities that collect and store money and give credit fall under the Central Bank of Kenya. Those involved in trading of securities, private equity and investments are regulated and supervised by the Capital Markets Authority. The Retirement Benefits Authority regulates pooled funds and schemes that pay out retirement or death benefits.

This approach's efficacy is questioned due to overlapping roles and functions. Some institutions carry out more than one function and are therefore answerable to multiple regulators. For example, some insurance companies are involved in asset management which falls under the Capital Markets Authority. This might increase uncertainties.

3.4.2 Partial Consolidation Approach

Various regulations and authorities within the Kenyan system exist for specific purposes and objectives. For example, the Competition Authority of Kenya is tasked with ensuring fair markets and consumer protection; the Kenya Revenue Authority collects revenue for the government from various taxes and the Communications Authority of Kenya is in charge of communications and technology. It is therefore not a farfetched suggestion to have a body that oversights, regulates and protects consumers' interest specifically around VC systems.

3.5 Consumer Protection Regulatory Challenges in Decentralized Virtual Currency in Kenya

3.5.1 Regulatory uncertainty

Kenya's legal framework does not address or acknowledge decentralized virtual currencies. Neither does it define or classify it. Kenya's passive approach to the new innovation of decentralised virtual currency hampers its regulatory process. Issuing a caution against decentralised virtual currency is prudent in the early stages. However, it is important to remain proactive with increasing adoption and use.

3.5.2 Regulatory overlap

In most instances, multiple regulatory and supervisory authorities could provide checks and balances[247]. However, more often than not, overlaps create conflict further increasing challenges. Each regulator may require different licensing guidelines which is an example of the conflict within regulatory overlaps.

Distinct nascent markets like decentralized virtual currencies pose regulatory challenges as there is an intertwine between different industries, technology and finance. This results in conflict as between supervisory authorities in the different industries. Decentralized virtual currencies in Kenya could fall under different definitions: as currency and as an investment item. This means it could fall under different regulatory authorities. Regulatory overlaps are usually dealt with

[247] Carmichael J and Pomerleano M, 'The Development and Regulation of Non-Bank Financial Institutions' *World Bank Publication* (2002).

administratively[248] but due to the lack of recognition of decentralized virtual currencies in Kenya, and regulatory gaps, there exist no provisions to deal with the challenge.

3.5.3 Regulatory arbitrage

Regulatory uncertainties and inconsistencies as well as overlaps allow the private entities issuing the decentralized virtual currencies to evade regulation or choose regulators whose regulatory burden is lessened[249]. Traditional legal frameworks place jurisdiction under a single authority or country[250]. Decentralised virtual currencies have no legal recognition within Kenya's framework. The lack of regulation for certain services and products fuels regulatory arbitrage[251]. This means that issuers could bypass meeting certain standards or could use the jurisdiction to facilitate illegal activities. This allows consumers' safety to fall by the wayside.

3.6 Conclusion

In a public notice cautioning on VCs, the Central Bank of Kenya offers that currently, there exists no entity that is licensed to offer money remittance services and products in Kenya using VCs. The CBK also warns that there are no legal ways as of yet to protect users should a platform that holds or exchanges VC fail or go out of business. The main risks associated with holding VCs include but are not limited to, untraceable and anonymous transactions making users susceptible to criminal activities, lack or regulation on exchange platforms inhibiting the seeking of legal redress and the lack of backing of assets by national institutions leading to

[248] Malala J, 'Mobile Payments Systems in Kenya: A New Era or False Dawn and An examination of the Legal and Regulatory Issues Arising 'Post" Financial Inclusion' PHD Thesis, University of Warwick, September 2019.

[249] Muvillo GM and Macinnes I, 'The Impact of Technological Convergence on the Regulation of ICT Industries' 5 International Journal on Media Management (2002).

[250] Malala J, 'Mobile Payments Systems in Kenya: A New Era or False Dawn and An examination of the Legal and Regulatory Issues Arising 'Post" Financial Inclusion' PHD Thesis, University of Warwick, September 2019.

[251] Malala J, 'Mobile Payments Systems in Kenya: A New Era or False Dawn and An examination of the Legal and Regulatory Issues Arising 'Post" Financial Inclusion' PHD Thesis, University of Warwick, September 2019.

erratic and volatile market systems that are highly speculative in nature. As a result, investors are exposed to high gains and large losses as well.

As the unprecedented innovation that is the virtual currency appears to be a mainstay, the lack of specific legal provisions presents a missed opportunity to the detriment of the users. The evolving nature of the financial and technology industry presents increasing innovations and consequently, challenges. This necessitates the evolution of regulation as well as the approaches to regulation. This chapter's analysis illustrates the substantive inadequacy of the existing regulatory framework.

In Kenya, the confluence of technology and financial services has caused the coming together of differently mandated authorities leading to further regulatory and legal challenges. Further the riving of consumer protection legal provisions cements these challenges. Regulatory inertia, overlap and arbitrage obstruct the efficiency of regulatory and supervisory authorities leading to duplicated and conflicting regulation. This inhibits consistent and rational regulatory approaches[252]. The Central bank of Kenya has taken a piecemeal approach to decentralized virtual currencies translating to the lack of clarification of decentralized virtual currencies in Kenya's regulatory framework, minimizing accountability and consequently consumer protection. Lack of clarity in the legal framework is a source of risks in itself as there are incorrect perceptions of the exposures to potential losses.

It is evident that the deficiencies put consumers at relatively higher risk than would be if there were specific regulations addressing the same. For effective consumer protection, it would be necessary to provide a clear-cut definition of decentralized virtual currency and give it acceptable legal status in Kenya as a foundation. This would allow easier classification of the decentralized virtual currency as well as the institutions and entities involved in the system. This would eventually provide a platform for the correct administrative bodies allowing for avenues of redress. A healthy balance can also be struck between governmental regulation and self-regulation of the entities within the decentralized virtual currency system to avoid stifling of innovation and industry. The creation of the Capital Markets Authority regulatory sandbox and interpretation by courts and a step toward filing the gaps.

[252] Malala J, 'Mobile Payments Systems in Kenya: A New Era or False Dawn and An examination of the Legal and Regulatory Issues Arising 'Post" Financial Inclusion' PHD Thesis, University of Warwick, September 2019.

4 CHAPTER THREE: DIGITAL FINANCIAL SERVICES REGULATORY FRAMEWORK IN SOUTH AFRICA AND MEXICO

4.1 Introduction

The global rise of decentralised virtual currencies continues to present a prodigious challenge to regulators. The response requires a healthy balance between protection of financial systems and consumers, and ensuring technological innovation is not stifled. Virtual currencies can be said to be in the early days of regulation[253] as only a few countries have taken and are taking steps to regulate them. In general, virtual currency actors are bound by contractual and criminal laws[254].

Different jurisdictions have adopted various cryptocurrency and virtual currency regulatory regimes. These regimes relate to the legality of the currencies as well as tax treatment. With regard to legal recognition, there have been different approaches. Firstly, there are jurisdictions that permit the operation of virtual currency markets[255]. Some of these have effectuated specific laws for example Mexico and Belarus[256], while some do not have industry specific laws but allow the markets to operate like France and Brazil[257].

Jurisdictions that permit the operation and use of virtual currencies more often than not impose taxes depending on how the virtual currencies are categorized[258].Some countries treat virtual currencies as securities, for example Argentina[259] while others categorise them as foreign currency[260]. Majority of these jurisdictions subject institutions participating in the use, transfer and provision of virtual currency to anti-money laundering, organized crime and terrorist financing rules[261].

This chapter draws admonition from the regulatory approaches in South Africa and Mexico in the face of adoption of virtual currency and subsequent consumer protection concerns.

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[253] Bollen R, 'The legal Status of Online Currencies: are bitcoin the future?' Journal of Banking and Finance Law (2013), 272, 277.

[254] Mc Connel K, 'Best Practice for Bitcoin: Regulatory, Legal and Financial Approaches to Virtual Currencies in A Hesitant Global Environment' Unpublished Thesis, Monash University.

[255] Goitom H, 'Regulation of Cryptocurrency in Selected Jurisdictions' *Law Library of Congress* (2018), 1.

[256] Goitom H, 'Regulation of Cryptocurrency in Selected Jurisdictions', 1.

[257] Goitom H, 'Regulation of Cryptocurrency in Selected Jurisdictions', 1.

[258] Goitom H, 'Regulation of Cryptocurrency in Selected Jurisdictions', 1.

[259] Goitom H, 'Regulation of Cryptocurrency in Selected Jurisdictions', 2.

[260] Goitom H, 'Regulation of Cryptocurrency in Selected Jurisdictions', 1.

[261] Goitom H, 'Regulation of Cryptocurrency in Selected Jurisdictions', 1.

4.2 South Africa

South Africa is considered one of the leading economies in adoption of technology and innovation within the African continent[262]. Initially, South Africa embraced the 'wait and see' approach with regards to decentralised virtual currencies[263].

At the onset of the increasing use and trade of virtual currencies in South Africa, the South African Reserve Bank (SARB), in December of 2014 put out a position paper- similar to the CBK- emphasizing the risks affiliated with virtual currencies[264]. The paper distinguished virtual currency from e-money[265] which is defined as monetary value stored electronically issued following the receipt of funds and representation by a claim on the issuer[266]. E-money is a mode of payment generally accepted by entities other than the issuer and is recoverable for physical cash upon demand[267]. The paper covered money laundering and terrorist financing, consumer protection, price stability and financial stability[268]. The paper emphasized that only the South African Reserve Bank had the authority to issue legal tender and that decentralised virtual currencies were not[269] as they are not generally accepted[270]. The paper cautioned against using decentralized VCs as payment for the discharge of any obligation in a manner that points toward them being a perfect substitute for legal tender[271]. Further, the South African Reserve Bank stated that no protection or recourse would be made available to any party involved in the use and trade of virtual currencies[272]. The South African Reserve Bank does not oversee, supervise

[262] World Bank Group, *Taking the Pulse of Africa's Economy* World Bank 2019 available at https://www.worldbank.org/en/region/afr/publication/taking-the-pulse-of-africas-economy accessed 4 May 2021, 110.

[263] Mukwehwa B, 'Rethinking The Regulation of Virtual Currencies in South Africa' Unpublished LLM Thesis, University of Pretoria (2019).

[264]'Regulatory Approaches to Crypto assets: South Africa' April 2019 *Library of Congress Law* https://www.loc.gov/law/help/cryptoassets/southafrica.php#_ftn23 on 29th April 2021.

[265] Meiring I et al., 'South Africa' in Dewey J (ed), *Blockchain and Crytptocurrency Regulation*, Global Legal Group Limited, United Kingdom, 2019, 432.

[266] National Payment System Department Paper on Electronic Money 01/2009.

[267] Meiring I et al., 'South Africa' in Dewey J (ed), *Blockchain and Crytptocurrency Regulation*, Global Legal Group Limited, United Kingdom, 2019, 432.

[268] South African Reserve Bank, *Position Paper on Virtual Currencies*, 2014.

[269] 'Regulation of Crypto Currency Around the World' June 2018 *Library of Congress Law https://www.loc.gov/law/help/cryptocurrency/world-survey.php* on 29th April 2021.

[270] Meiring I et al., 'Blockchain and Crytptocurrency Regulation: South Africa', 432.

[271] Meiring I et al., 'Blockchain and Crytptocurrency Regulation: South Africa', 432.

[272]'Regulatory Approaches to Crypto assets: South Africa' April 2019 *Library of Congress Law* https://www.loc.gov/law/help/cryptoassets/southafrica.php#_ftn23 on 29th April 2021.

or regulate the virtual currency landscape, systems or intermediaries for effectiveness, soundness, integrity or robustness and therefore all activities relating to decentralized activities are performed at the end-user's risk[273]. It however emphasized the need for continuous monitoring[274].

Following the growth of Fintech, South Africa established an intergovernmental Fintech Working Group with representatives from the National Treasury, the Financial Intelligence Centre and the Financial Conduct Authority[275]. The Group was mandated to harmonize the understanding of Fintech developments among policy makers and regulators in South Africa and the implications on the financial sector and economy[276] as well as to investigate innovation structures like innovation accelerators, innovation hubs and regulatory sandboxes[277].

In the latter part of 2017, the working group initiated Project Khokha, with the project team consisting of seven banking industry participants, a technical service provider (ConsenSys), and consulting practice, PricewaterhouseCoopers Inc. The Project Khokha was intended to trial interbank wholesale settlement using distributed ledger technology ("DLT")[278]. The results of Project Khokha indicated that the typical daily volume of the South African payments could be processed in under two hours, with transactions being fully confidential and settlements final. The visibility of the transaction details by the South African Reserve Bank satisfied the requirement to allow for regulatory oversight[279]. The project provided footing for future work but pointed out that issues surrounding legal and regulatory factors, impact on the economy and implementation factors of a DLT-based payment system needs to be taken into account[280].

[273] Meiring I et al., 'Blockchain and Crytptocurrency Regulation: South Africa', 432.
[274] 'Regulatory Approaches to Crypto assets: South Africa' April 2019 *Library of Congress Law* https://www.loc.gov/law/help/cryptoassets/southafrica.php#_ftn23 on 29th April 2021.
[275] Crypto Assets Regulatory Working Group South Africa, *Consultation Paper On Policy Proposals for Crypto Assets*, 2019.
[276] Crypto Assets Regulatory Working Group South Africa, *Consultation Paper On Policy Proposals for Crypto Assets*, 2019.
[277] Meiring I et al., 'Blockchain and Crytptocurrency Regulation: South Africa', 433.
[278] Meiring I et al., 'Blockchain and Crytptocurrency Regulation: South Africa', 433.
[279] Meiring I et al., 'Blockchain and Crytptocurrency Regulation: South Africa', 433.
[280] Meiring I et al., 'Blockchain and Crytptocurrency Regulation: South Africa', 433.

In 2018, the Crypto Assets Regulatory Working Group comprising of the Intergovernmental Fintech Working Group and the South African Revenue Service was constituted[281]. Its mandate was to deliberate South Africa's position on crypto assets[282]. The consequent report identified multiple crypto assets and mentioned the buying and selling of the same as well as the use of crypto assets to make payments[283]. The report defined crypto assets as "a digital representation of value that is not issued by a central bank, but is traded, transferred and stored electronically by natural and legal persons for the purpose of payment, investment and other forms of utility, and applies cryptography techniques in the underlying technology in South Africa"[284]. The institution of this national definition served to improve the common understanding among regulators and policymakers of financial technology on VCs.

4.2.1 Provisions Targeting Decentralized Virtual Currencies

The *Electronic Communication and Transactions Act*[285] applies to electronic transactions including financial services and does not limit the kind of financial service[286]. The *Financial Markets Act*[287] provides the regulatory framework for securities in South Africa. The definition of securities under the Act[288] does not encompass decentralized virtual currencies as none of the definitions bear any semblance to them. Further, the securities listed within the Act all have a single issuer against whom consumers can bring a claim. Unfortunately, decentralized virtual currencies do not[289]. Decentralized virtual currencies can however be treated as investments.

The *Financial Advisory and Intermediary Services Act*[290] supervises the provision of financial advisory services in South Africa[291]. The first point of enquiry under the act is the involvement

[281] Crypto Assets Regulatory Working Group South Africa, *Consultation Paper On Policy Proposals for Crypto Assets*, 2019.
[282] Crypto Assets Regulatory Working Group South Africa, *Consultation Paper On Policy Proposals for Crypto Assets*, 2019.
[283] Crypto Assets Regulatory Working Group South Africa, *Consultation Paper On Policy Proposals for Crypto Assets*, 2019, 7-8.
[284] Crypto Assets Regulatory Working Group South Africa, *Consultation Paper On Policy Proposals for Crypto Assets*, 2019, 9.
[285] Electronic Communication and Transactions Act (No. 25 of 2002) (South Africa).
[286] Section 42, Electronic Communication and Transactions Act (No. 25 of 2002) (South Africa).
[287] Financial Markets Act (No. 19 of 2012) (South Africa).
[288] Section 1, Financial Markets Act (No. 19 of 2012) (South Africa).
[289] Meiring I et al., 'Blockchain and Crytptocurrency Regulation: South Africa', 433.
[290] Financial Advisory and Intermediary Services (No. 37 of 2002) (South Africa).

of a financial product and whether financial advice is consequently rendered. The definition of financial product does not include direct reference to decentralized virtual currencies and no declaration by the Registrar exists.

The South African legislators published a draft *Taxation Laws Amendment Bill*[292] proposing amendments to the *Income Tax Act 58 of 1962* and the *Value Added Tax Act 89 of 1991*, which, in consideration with other instruments, undertake to clarify the existing provisions dealing with decentralized virtual currencies in the South African tax law[293]. The Bill proposes to include decentralized virtual currencies as a financial instrument for the purpose of taxation[294]. If the amendment to the *Value Added Tax Act 89 of 1991* is accepted, all transactions in decentralized virtual currencies will be exempt from VAT[295]. Moreover, the Bill[296] proposes to include the acquisition or disposal of any decentralized virtual currencies to assess loss provisions[297]. This proposal will hinder traders from offsetting losses incurred from decentralized virtual currencies elsewhere.

The *Financial Intelligence Centre Act*[298], imposes Anti-money laundering duties upon institutions, like banks and money remitters[299], to verify their client's identities, maintain records and report transactions that fall within certain thresholds to the Financial Intelligence Centre. These provisions apply to all business entities in South Africa[300]. The Act requires all and any persons to report proceeds of unlawful activities, suspicions of money laundering, financing of terrorist activities[301]. These provisions could apply to decentralized virtual currencies.

Currently the SARB does not oversee, police, or regulate the crypto assets ecosystem. All activities related to the acquisition, sale and distribution of crypto assets are exercised at the end

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[291] Section 1, Financial Advisory and Intermediary Services (No. 37 of 2002) (South Africa): Financial service means the furnishing of advice and/or the rendering of intermediary services in respect of a financial product.
[292] Taxation Laws Amendment Bill (2020) (South Africa).
[293] Meiring I et al., 'Blockchain and Crytptocurrency Regulation: South Africa', 434.
[294] Section 2(c), Taxation Laws Amendment Bill (2020) (South Africa).
[295] Section 12, Value Added Tax Act (No. 89 of 1991) (South Africa).
[296] Section 24, Taxation Laws Amendment Bill (2020) (South Africa).
[297] Section 20A, Value Added Tax Act (No. 89 of 1991) (South Africa).
[298] Financial Intelligence Centre Act (No. 38 of 2001) (South Africa).
[299] Schedule 1, Financial Intelligence Centre Act (No. 38 of 2001) (South Africa).
[300] Meiring I et al., 'Blockchain and Crytptocurrency Regulation: South Africa', 434.
[301] Section 29, Financial Intelligence Centre Act (No. 38 of 2001) (South Africa).

users' sole and independent risk, with no recourse to the SARB. However, no restrictions on ownership by investment managers for investment purposes exist. Moreover, no licensing requirements are imposed on investment parties[302]. The goal is to adopt a balanced and responsible view to innovation by fostering the creation of an enabling regulatory structure and analyzing both the risks and the benefits of innovations.

The *Financial Institutions (Protection of Funds) Act*[303] imposes duties on persons dealing with property of clients controlled by financial institutions, either funds or trust property. The definition of trust property is wide enough to encompass decentralized virtual currencies. The Act requires[304] these persons to act in good faith and employ proper care ad diligence, and avoid use of the property or funds to gain an improper advantage . The Act, however, does not enforce any regulatory approval or registration requirement on the said financial institutions.[305]

The Currency and Exchanges Act[306] (as amended) and the Exchange Control Regulations as well as published Exchange Manuals and guidelines by the SARB enforce exchange in South Africa. These regulations require any person intending to move funds offshore to purchase decentralized virtual currencies to seek approval through authorized foreign exchanges. These Authorized Exchanges are South African commercial and merchant banks, appointed by the Minister of Finance, to buy and sell foreign exchange, subject to conditions prescribed by the Treasury and the SARB and acting on behalf of their customers[307].

Although the reporting requirements under Financial Intelligence Centre Act require the reporting of cash transactions that fall within certain thresholds, the definition of cash therein[308] does not expressly include decentralized virtual currencies[309].

[302] Meiring I et al., 'Blockchain and Crytptocurrency Regulation: South Africa', 435.
[303] Financial Institutions (Protection of Funds) Act (No. 28 of 2001) (South Africa).
[304] Section 2, Financial Institutions (Protection of Funds) Act (No. 28 of 2001) (South Africa).
[305] Meiring I et al., 'Blockchain and Crytptocurrency Regulation: South Africa', 436.
[306] Currency and Exchanges Act (No.9 of 1933) (South Africa).
[307] Meiring I et al., 'Blockchain and Crytptocurrency Regulation: South Africa', 436.
[308] Section, Financial Intelligence Centre Act: Cash includes, firstly coin and paper money of South Africa or of another country that is designated as legal tender and that circulates as, and is customarily used and accepted as, a medium of exchange in the country of issue; and secondly travellers' cheques.
[309] Meiring I et al., 'Blockchain and Crytptocurrency Regulation: South Africa', 436.

4.2.2 Consumer protection provisions

The South African *Consumer Protection Act*[310] establishes norms and standards for consumer protection, improved standards of information available to consumers and promotes continued legislative support. The *Electronic Communication and Transactions Act*[311] applies to consumer protection in electronic transactions including financial services and does not limit the kind of financial service[312]. It further requires the disclosure of various information to consumers concerning the legal status of online entities[313].

Further, the *Protection of Personal Information Act* [314]addresses data security and privacy issues in online transactions. *Regulations of Interception and Provision of Communication-Related Information Act*[315] also seeks to prevent unauthorized exposure of user's private information. Although no direct consumer protection provisions cover decentralized virtual currencies, inference may be drawn and a connection made using existing provisions, upon the legitimization by government.

4.3 Mexico

In releases dated March 2014[316] and December 2017[317], the *Banco de México* cautioned its citizen about the participation, use and purchase of Virtual Assets in general and Initial Coin Offerings schemes. The releases endorsed that virtual currencies (under the umbrella of virtual assets) were not legal tender in Mexico; that the use of virtual currencies as forms of fulfillment of payments was insecure and no one had any obligation to accept them; that virtual currencies were not monitored by the Central Bank of Mexico; that no guarantee of recourse was available

[310] Consumer Protection Act (No. 68 of 2008) (South Africa).
[311] Electronic Communication and Transactions Act (No. 25 of 2002) (South Africa).
[312] Section 42, Electronic Communication and Transactions Act (No. 25 of 2002) (South Africa).
[313] Section 43(1), Electronic Communication and Transactions Act (No. 25 of 2002) (South Africa).
[314] Protection of Personal Information Act (No. 4 of 2013) (South Africa).
[315] Regulations of Interception and Provision of Communication-Related Information Act (2002) (South Africa).
[316] http://www.banxico.org.mx/informacion-para-la-prensa/comunicados/miscelaneos/
[317] https://www.gob.mx/shcp/prensa/las-autoridades-fi

to anyone under the transactions; and that institutions within the Country's financial system carrying out transactions with them were not legitimized to do so[318].

Mexico took a tremendous step by enacting the Law *to Regulate Financial Technology Institutions* (Fintech Law) that provided a legal basis for regulating the functions of Financial Technology Institutions (FTI). The law governs entities, transactions, services and operations offered by Financial Technology Institutions including: Joint Funding Institutions (Crowd funding); Payment Funds Institutions (e-wallets and cryptocurrency exchanges); and novel models and sandboxes[319]. Consequently, other financial sector laws were amended[320]. These include the S*ecurities Market Law*, the *Law of Credit Institutions*, the *General Law of Organizations* and *Auxiliary Credit Facilities*[321]. The same led to the enactment of the *Law to Regulate Credit Information Societies*, the *Law of Protection and Defense of the User of Financial Service*s, the *Law of National Banking and Securities Commission*, the *Law for Transparency and Regulation of Financial Services*, the *Law to Regulate Financial Groups* and the *Federal Law for the Prevention and Identification of Operations with Resources of Illicit Origin*[322]. The Fintech law however, does not attempt to govern the decentralized virtual currencies, but rather the undertakings of operators and intermediaries[323]. Institutions previously authorized by *Banco de México* are allowed to operate virtual currencies approved by *Banco de México*[324].

4.3.1 Provisions Targeting Decentralized Virtual Currencies

Mexico is the first country to decree financial technology (Fintech) industry specific legal provisions including cryptocurrency operators, sandboxes, crowd-funding and e-money[325]. The country has achieved this by technological advancements like using mobile phones, increasing financial inclusion in Mexico and influencing radical change to accommodate the needs and

[318] Angel M et al., 'Mexico' in Dewey J (ed), *Blockchain and Crytptocurrency Regulation, Global Legal Group Limited, United Kingdom*, 2019, 386.
[319] Angel M et al., 'Blockchain and Crytptocurrency Regulation: Mexico', 388.
[320] Angel M et al., 'Blockchain and Crytptocurrency Regulation: Mexico', 387.
[321] The Law to Regulate Financial Technology Institutions (2018) (Mexico).
[322] The Law to Regulate Financial Technology Institutions (2018) (Mexico).
[323] Angel M et al., 'Blockchain and Crytptocurrency Regulation: Mexico', 389.
[324] Angel M et al., 'Blockchain and Crytptocurrency Regulation: Mexico', 389.
[325] Angel M et al., 'Blockchain and Crytptocurrency Regulation: Mexico', 386.

customs of emerging bank users[326]. The law provides mitigation against risks and illegal money operations, legal certainty to the participants and makes financial services accessible to excluded persons and sectors[327].

The instrument recognizes and prescribes virtual assets including virtual currencies[328] and chronicles the operations that financial technology institutions and other traditional financial bodies can undertake using virtual assets after obtaining prior authorization by *Banco de México*[329]. The instrument further asseverates rules requiring financial technology institutions to employ applications and programming interfaces[330]. Finally, the law constitutes a regulatory framework with criminal and administrative sanctions against the infringement of the provisions therein or the secondary provisions[331].

The Fintech law is based on six main principles[332]: Consumer and user protection, preserving financial stability, financial inclusion and innovation, preventing illegal operation, promotion of competence and technological neutrality[333]. The law is supported by over twenty secondary financial provisions issued by the Ministry for Finance, *Banco de Mexico* (Central Bank of Mexico), the National Insurance and Bonding Commission, the National Retirement Savings System Commission, the National Banking and Securities Commission and the National Commission for the Protection and Defence of Financial Service Users[334]. Due to its minimum regulation characteristics, the Fintech law allows financial authorities to adapt flexibly to the instrument[335]. Further, the law provides for the creation of the Financial innovations group

[326] Angel M et al., 'Blockchain and Crytptocurrency Regulation: Mexico', 386.
[327] Angel M et al., 'Blockchain and Crytptocurrency Regulation: Mexico', 386.
[328] Article 30, The Law to Regulate Financial Technology Institutions (2018) (Mexico): 'Virtual asset is the representation of value electronically recorded and used among the public as payment means to any kind of legal acts and which transfer can solely be carried out by electronic means. In any case, a virtual asset will be of legal tender in the national territory, a foreign currency or any other asset denominated in a legal tender or foreign currency'.
[329] Angel M et al., 'Blockchain and Crytptocurrency Regulation: Mexico', 387.
[330] Angel M et al., 'Blockchain and Crytptocurrency Regulation: Mexico', 387.
[331] Angel M et al., 'Blockchain and Crytptocurrency Regulation: Mexico', 387.
[332] Article 2, The Law to Regulate Financial Technology Institutions (2018) (Mexico).
[333] Angel M et al., 'Blockchain and Crytptocurrency Regulation: Mexico', 386.
[334] Angel M et al., 'Blockchain and Crytptocurrency Regulation: Mexico', 386.
[335] Angel M et al., 'Blockchain and Crytptocurrency Regulation: Mexico', 386.

(*Grupo de Innovación Financiera*)[336] consisting of both public and private sector members, the creation of trade associations and allows for the integration of cross sector committees[337].

Mexican authorities postulate that virtual assets, including virtual currencies, are a unit of investment and a transfer of value. Secondary provisions decree oversight authority onto *Banco de México* to foreordain virtual currency financial technology institutions[338], banks[339] and other entities[340] that may operate[341]. In doing so and determining viable virtual currency in Mexico, the *Banco de México* is required to consider its use as either a unit of storage, means of exchange or unit of account by the public[342], the rules systems that guide their generation and control, and admonition of the virtual currencies by other jurisdictions[343].

Consequent to the legislation of the Law to Regulate Financial Technology Institutions, the *Securities Market Law* was revised to reflect that firstly, instruments handled by financial technology institutions are to be regulated under the Law to Regulate Financial Technology Institutions rather than the Securities Market Law. Secondly, the Securities instrument states that even transactions deriving from or containing virtual assets (virtual currencies) as the underlying assets are not regulated under the Law. [344]

Mexico does not have any virtual currency specific tax rules regarding earnings. However, they are subject to general tax rules as the exchanges by the participating institutions are regulated. It is asserted that handling of decentralized virtual currencies includes foreign exchange gains to accruals and should therefore be treated as interest while other parties put that it involves gains from a sale of goods. [345]

Pursuant to the consequent amendments made to the *Federal Law to Forecast and Identify Operations Using Illicit Proceeds*, financial technology institutions, naturally falling under the

[336] Article 93, The Law to Regulate Financial Technology Institutions (2018) (Mexico).
[337] Angel M et al., 'Blockchain and Crytptocurrency Regulation: Mexico', 387.
[338] Article 88, The Law to Regulate Financial Technology Institutions (2018) (Mexico).
[339] Article 88, The Law to Regulate Financial Technology Institutions (2018) (Mexico).
[340] Article 80, The Law to Regulate Financial Technology Institutions (2018) (Mexico).
[341] Article 88, The Law to Regulate Financial Technology Institutions (2018) (Mexico).
[342] Angel M et al., 'Blockchain and Crytptocurrency Regulation: Mexico', 387.
[343] Angel M et al., 'Blockchain and Crytptocurrency Regulation: Mexico', 387.
[344] Angel M et al., 'Blockchain and Crytptocurrency Regulation: Mexico', 389.
[345] Angel M et al., 'Blockchain and Crytptocurrency Regulation: Mexico', 389.

definition of financial entities, are required to implement measures that preclude transactions involving illegal proceeds[346]. These measures must include know your customer (KYC) procedures, internal controls, implementation of automated processes, occasional audits and internal training and officers[347]. The instrument further requires the entities to file periodic reports with the Secretariat of Finance and Public Credit through the National Banking and Securities Commission. The reports must contain information regarding transactions by the clients, officers and directors of entities that may be assumed to be financing terrorism or operating with illegal proceeds. [348]

Financial technology institutions are forbidden to sell, assign or transfer ownership, loan or to have in custody decentralized virtual currencies, aside from sale or allocation upon client's request[349]. Under estate planning, the common legislation regarding beneficiaries of an account owner apply[350].

4.3.2 Consumer protection provisions

The Law to Regulate Financial Technology Institutions[351] states that financial technology institutions transacting decentralized virtual currencies are required to inform consumers that firstly, decentralized virtual currencies are not considered legal tender in Mexico. Secondly, that decentralized virtual currencies are prone to volatility in value. Thirdly, certain risks like cyber risks and fraud are latent to decentralized virtual currencies. [352]

4.4 Conclusion

Fintech developments portend unique advantages and risks for consumers as well as new challenges in financial services regulation. Fintech services often are spurred on by their cost efficiency, reduced information asymmetries, faster transactions, and a client-centric approach. The associated risks however include, cyber-risk, and the potential of information insecurity,

[346] Angel M et al., 'Blockchain and Crytptocurrency Regulation: Mexico', 390.
[347] Angel M et al., 'Blockchain and Crytptocurrency Regulation: Mexico', 390.
[348] Angel M et al., 'Blockchain and Crytptocurrency Regulation: Mexico', 390.
[349] Article 22, The Law to Regulate Financial Technology Institutions (2018) (Mexico).
[350] Angel M et al., 'Blockchain and Crytptocurrency Regulation: Mexico', 392.
[351] Article 34, The Law to Regulate Financial Technology Institutions (2018) (Mexico).
[352] Angel M et al., 'Blockchain and Crytpto currency Regulation: Mexico', 388.

fraud, and money laundering[353]. The gap lies in; defining and classifying the different Fintech products and services, identifying potential risks and benefits to the financial sector, and providing workable and effective regulatory and oversight approaches[354].

Unlike in Kenya, the regulatory authorities in South Africa including the SARB acknowledge DVCs as a new financial innovation and recommend accommodating the system within the regulatory framework, where appropriate and requisite regulatory provisions can be implemented. South Africa's national position is, considered extended application of existing legal framework as well as the incorporation of regulatory developments under consideration, such as the draft *Conduct of Financial Institutions Bill (CoFI Bill)* and the *2020 Financial Markets Review*. South Africa has an extensive legal framework governing financial activities in the country. The challenge with extending and redefining the scope of existing law is, it requires substantial organization among regulators and may affect existing financial services[355]. The option of adding new regulations targeting the VC ecosystem may result in an exigent financial legal framework[356]. The answer may therefore lie in a broad consultative process that strikes a balance between increasing the reach of existing regulation and introducing new laws that are specific to VCs.

Mexico has taken a concrete step toward financial technology. The enacted Fintech law mainly provides the legal basis for the operation of two types of FTIs; Electronic Payment Institutions (EPIs) and crowdfunding entities, both being allowed to deal in virtual assets that are authorized by the Bank of Mexico[357]. Many countries around the world already had laws and regulations that dealt with e-money transfer and crowdfunding entities but Mexico provided regulation for these entities under one law which is a unique feature[358]. Lumping multiple institutions into a single law has its fair share of challenges; for instance, the regulatory authorities have been

[353] Association of Supervisors of Banks of the Americas, *An Overview of FinTechs: Their Benefits and Risks* (Association of Supervisors of Banks of the Americas 2017).
[354] Association of Supervisors of Banks of the Americas (n 272).
[355] Deon Erasmus and Susan Bowden, 'A Critical Analysis of South African Anti-Money Laundering Legislation with Regard to Cryptocurrency' (2020) 41 Obiter 309.
[356] Erasmus and Bowden (n 274).
[357] Stefan Staschen and Mehmet Kerse, 'Is Mexico's "Fintech Law" Leading a New Trend in Fintech Regulation?' (2021) <https://www.cgap.org/blog/mexicos-fintech-law-leading-new-trend-fintech-regulation> accessed 26 July 2021.
[358] Staschen and Kerse (n 276).

flooded by new applicants all at once seeking licenses some for e-money issuance and others for crowdfunding services and the overwhelming nature of these requests may be a factor as to why to date, only one license has been issued in the county[359]

Mexico still does not completely accept decentralized virtual currencies. It allows for authorized virtual currencies upon permission from *Banco de México.* The Law however does allow the advancement and innovation of new technologies and approaches to financial technology instruments by allowing 'novel models'[360]. It is however important to note that Fintech laws are context specific. Policy makers in Kenya will therefore need to consider a wide range of issues unique to the Kenyan financial system that the Mexico Fintech law may not address. It is also vital for regulators to consider whether an innovation or a business model fits into the existing legal framework and as such whether new regulations or even a new law is required.

These two countries, albeit in their infancy of recognition of decentralized virtual currencies, recognize their existence. The make provision for minimum regulation of entities involved in their dealing as well and a minimum standard for AML and CTF guidelines. Kenya should adopt this as an initial step toward ensuring consumer protection of Kenyan decentralized virtual currency users.

[359] Staschen and Kerse (n 276).

[360] Article 34, The Law to Regulate Financial Technology Institutions (2018) (Mexico) ."Novel Model is that which in order to render financial services uses tools or technology means with different fashions to those already existing in the market at the time of temporarily authorizing under the terms set forth in this Law".

5 CHAPTER FOUR: FINDINGS AND RECOMMENDATIONS

5.1 Introduction

This chapter considers the discussion and findings of the First, Second, Third and Fourth chapters. It draws lessons from the approaches by South Africa and Mexico and how appropriate they are for Kenya's financial landscape.

Incipient financial innovation like decentralized virtual currencies require supporting and operationalized legal structures which in turn lead to mature markets and consequently enlightened market participants who demand for better laws. It is clear that legal recognition and structures are important in addressing consumer protection issues. Individual consumers have collective interests outside of public interests and adaptive approaches to consumer protection laws are more likely to address the social aspects of consumer needs[361].

5.2 Findings

The study concludes that Decentralised Virtual Currencies lack classification clarity and therefore causes legal uncertainty and consequently little accommodation consumer protection frameworks. Chapter 2 explored the characteristics of DVC vis-à-vis fiat currency. It also discussed principles upon which efficient consumer laws should be founded. The chapter outlined the consumer risks associated with DVCs that warrant regulatory attention.

Literature reveals that regulations as they exist in most jurisdictions, do not properly encompass this novel innovation. The regulation for consumer protection in Kenya does not specifically relate to sectors. However, through inference, it is applicable across the board, with certain sectors having their own secondary consumer protection measures. Decentralised virtual currencies do not have any legal legitimacy in Kenya. Further, its nature is that it is multi-jurisdictional making it more likely to fall outside the ambit of the existing laws. Kenya's legal framework surrounding electronic and digital assets and rights is inarticulate and not clearly defined creating further ambiguity around consumer protection.

[361] Bourgoignie T, 'Characteristics of Consumer Law', 14 *Journal of Consumer Policy* (1992) 293-315.

Chapter 3 analysed the consumer protection provisions in Kenya's regulatory framework. It noted that consumer protection is regulated by a central authority as well as by sector specific regulators. DVCs were also posited to fall within the definition of digital payment systems. To wit, the chapter analysed Kenya's digital payment systems regulatory frameworks. It established that DVCs are not legally recognized in Kenya. This exposes Kenyan DVC participants and users to the risks identified in chapter two. Chapter three concluded that the Kenyan consumer protection regulatory framework has the potential to accommodate the regulation of DVCs.

The regulatory challenges, overlaps, arbitrage and uncertainty, expose Kenyans further to the various risks already associated with decentralised virtual currencies. The risks apply to both transactions whose payments are fulfilled using decentralised virtual currencies as well as transactions in respect of decentralised virtual currencies. Among the risks are the potentially persisting nature of decentralised virtual currencies transactions, unavailability of forums for redress and complaints and the lack of transparency associated with anonymity of certain decentralised virtual currencies.

As the unprecedented innovation that is the virtual currency appears to be a mainstay, the lack of specific legal provisions regulating the buying, selling and distribution of these assets in Kenya likely presents a missed opportunity to the detriment of the users. The evolving nature of the financial and technology industry presents increasing innovations and consequently, challenges. This necessitates the evolution of regulation as well as the approaches to regulation. Thus there are substantive inadequacy of the existing regulatory framework in Kenya. Cyber risks are also a present risk. A security breach may result in consumers losing their money and without recourse. Some structural weaknesses within the decentralised virtual currency ecosystem such as requiring users to store their access keys on the platforms make consumers susceptible to loss. These kinds of breaches have extensive effects considering the volumes of decentralised virtual currencies held by Kenyans.

It is evident that the deficiencies put consumers at relatively higher risk than would be if there were specific regulations addressing the same. For effective consumer protection, it would be necessary to provide a clear-cut definition of decentralized virtual currency and give it acceptable legal status in Kenya as a foundation. This would allow easier classification of the decentralized virtual currency as well as the institutions and entities involved in the system. This

would eventually provide a platform for the correct administrative bodies allowing for avenues of redress. A healthy balance can also be struck between governmental regulation and self-regulation of the entities within the decentralized virtual currency system to avoid stifling of innovation and industry. The creation of the Capital Markets Authority regulatory sandbox and interpretation by courts and a step toward filing the gaps.

Chapter 4 discusses regulatory regimes that have adopted different levels of regulation and subsequent consumer protection provisions for decentralised virtual currencies. South Africa's approach is one of limited approach. It has prescribed to include crypto currencies in its FIC by requiring crypto assets service providers to ensure Anti Money Laundering and CFT frameworks. South Africa does not however consider decentralised virtual currencies/cryptocurrencies legal tender. Mexico, through its decree of La Ley Fintech, regulates decentralised virtual currencies to an extent. Fintech companies in Mexico are required to register with the National Banking and Securities Commission in order to operate virtual assets in Mexico. This has created a decentralised virtual currency friendly ecosystem despite poor attitudes by some authorities. Due to its minimal regulative nature, the Fintech law allows financial authorities to adapt flexibly to the instrument as the law provides for the creation of the Financial innovations group consisting of both public and private sector members. Mexican authorities postulate that virtual assets, including virtual currencies, as units of investment and transfer of value. The *Banco de México* is required to consider its use as either a unit of storage, means of exchange or unit of account by the public, the rules systems that guide their generation and control, and admonition of the virtual currencies by other jurisdictions.

Cross boundary partnership is the way to go since VCs are employed across boundaries by use of UN consumer protection guidelines and OECD guidelines which ensures sufficient consumer protection and curbing of abusive business practices. The guideline also provides for continued adoption of consumer protection regulations to meet the needs of changing forms of business. Following the complexity of the inter boundary nature of decentralized virtual currencies, the guidelines encourage the multinationals to self-regulate.

5.3 Recommendations

It is prudent to consider Kenyan consumer's welfare in the rapidly growing decentralised virtual currencies sphere. Consumer protection issues should not be limited to decentralised virtual

currencies interaction with fiat currency but should also cover data protection and cyber risk issues. Based on the foregoing discussions, the following recommendations are made:

1. *Adoption of consumer protection regulatory frameworks covering dsecentralised cvirtual currencies specifically*

This review recommends the improved participation of CMA and CBK in the VC market to ensure users are cushioned against risks because they are the institutions that are mandated with regulating financial sector. A revision of consumer laws to accommodate VC thus encouraging best practices by firms running VC business.

The government of Kenya may set up minimum standards to which decentralised virtual currency participants in Kenya may adhere. This may include specific Anti-Money Laundering provisions, minimum cyber security levels and recourse procedures for consumers.

In the development of an articulate framework, it is important to ensure involvement of the various stakeholders through an endogenous regulatory approach. The various relevant stakeholders include developers, miners, investors, research and innovation agencies, mining hardware manufacturers, exchange platforms, traders, trading platforms, industry associations, academia and consumers. Involvement of stakeholders like value recorded developers creates a positive environment and incentivises proper conduct.

5.4 Conclusion

With the evolution of technology and ideals, it is natural that society may feel the need to evolve past certain institutions and systems. One of the championed selling points of decentralized virtual currencies is that the system does not require the services or involvement of third party intermediaries for example banks and governments. However, history proves that unbridled avidity and iniquitous activities more often than not rear their ugly heads, being a result of a vicious capitalistic society.

Decentralized virtual currencies, and consumer protection therein, are difficult to regulate. However, a work around the decentralization is to target exchanges and the various other intermediaries that provide links, no matter how inadvertent, between decentralized virtual

currencies and the rest of the financial system. Further, to minimize undermining behavior of country's sovereignty and regimes, it is important to encourage and apply international standards.

This study consequently makes a case for the adoption of consumer protection regulations that encompass the peculiar nature of decentralized virtual currencies while ensuring innovation is not stifled.

5.5 Further research

This study recommends further research into the motivations of decentralized virtual currency in developing countries in order to inform appropriate regulatory frameworks.

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Strathmore UNIVERSITY

1st November 2021

Ms Kibwage Caroline
buyaki.kibwage@strathmore.edu

Dear Ms Kibwage,

RE: Consumer Protection in Kenya in the Age of Decentralized Virtual Currency

This is to inform you that SU-IERC has reviewed and **approved** your above **SU-master's** research proposal. Your application reference number is **SU-IERC1183/21.** The approval period is **1st November 2021 to 31st October 2022.**

This approval is subject to compliance with the following requirements:

i. Only approved documents including (informed consents, study instruments, MTA) will be used
ii. All changes including (amendments, deviations, and violations) are submitted for review and approval by SU-IERC.
iii. Death and life-threatening problems and serious adverse events or unexpected adverse events whether related or unrelated to the study must be reported to SU-IERC within 48 hours of notification
iv. Any changes, anticipated or otherwise that may increase the risks or affected safety or welfare of study participants and others or affect the integrity of the research must be reported to SU-IERC within 48 hours
v. Clearance for export of biological specimens must be obtained from relevant institutions.
vi. Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. Attach a comprehensive progress report to support the renewal.
vii. Submission of an executive summary report within 90 days upon completion of the study to SU-IERC.

Prior to commencing your study, you will be expected to obtain a research license from National Commission for Science, Technology, and Innovation (NACOSTI) https://research-portal.nacosti.go.ke/ and also obtain other clearances needed.

Yours sincerely,

for: Prof Fred Were,
Chairperson; SU-IERC

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