

Exploring institutional factors enabling the Nigerian digital economy policy and strategy

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ABSTRACT

This study explores the viability of the deployed institutional framework that are mandated to enable the implementation of the National digital economy and strategy in Nigeria. The study employed a qualitative research approach utilising interpretative phenomenological data analysis and interpretation due to the emergent policy implementation and the nuances associated with digital economy evolution in Nigeria.

Purposive sampling method was used for selecting participants from the primary stakeholders mandated to drive the implementation of the National digital economy policy and strategy. The research approach necessitated the use of semi-structured interviews for data collection, leveraging digital meeting platforms like Zoom and Microsoft Teams due to the restrictions on physical meetings occasioned by the COVID-19 pandemic. All interviews were recorded as agreed by the participants and collected data was transcribed and analysed using the interpretative phenomenological analysis.

Discussions emanating from presented data were guided by research questions posed by the study. The findings obtained from this research show that institutional frameworks are key enablers of the national digital economic policy and strategy; established institutional frameworks needs to be operationalised synergistically to enable the national digital economic policy and strategy and that well-resourced institutional frameworks are vital to enabling the national digital economy policy and strategy in Nigeria.

Amongst others, the study provides recommendations that the National digital economy policy and strategy document be reviewed to ensure collaboration with, and participation of all stakeholders. The study further recommends an outcomes-based approach for policy and strategy implementation. The study further provides suggestions for further research to nurture the development and implementation of digital economic policy and strategy in alignment.

KEYWORDS

Digital economy, Institutional framework, Governance Structure, Digital ecosystem, Digital transformation, Digital Literacy, Leadership commitment, Institutional culture, Digital infrastructure, Digital Access, Institutional operations.

DECLARATION

I, confirm that this research report is a product of my own knowledge and work done engaging with referenced sources and materials. This research report has not been submitted for any degree previously or for any examination in any other university. It is submitted in partial fulfilment of the requirements for the degree of Management in the field of Digital Business at the University of the Witwatersrand, in Johannesburg.

30 April 2021

DEDICATION

This dissertation is dedicated to God almighty, Olubunmi Olanusi (Ololufe), Ayanfeoluwa Olanusi and Ireoluwa Olanusi for their love, prayers, and support. I love and celebrate you guys always.

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LIST OF ACRONYMS

List of Acronyms	
Academic Staff Union of Universities	ASUU
African Continental Free Trade Area	AfCFTA
African Union Financial Institutions	AUFI
Association for Licensed Telcom Operator	ALTON
Association of Telcom Companies of Nigeria	ATCON
Bureau of Public Procurement	BPP
Digital Economy for Africa	DE4A
Digital Economy Policy and Strategy	DEPS
Digital Single Market	DSM
Digital Transformation Technical Working Group	DT-TWG
Economic Recovery Growth Plan	ERGP
E-Government Development Index	EGDI
Federal Executive Council	FEC
Federal Ministry of Communications	FMOC
Federal Ministry of Communications and Digital Economy	FMoCDE
Federal Public Institution	FPI
Free Movement of Persons	FMP
Gross Domestic Product	GDP
Information and Communications Technology	ICT
Information Technology	IT
Internet of Things	IOT
Interpretative Phenomenological Analysis	IPA
Ministries Departments and Agencies	MDAs

National Adopted Village for Smart Agriculture	NAVSA
National Digital Economy Policy and Strategy	NDEPS
National Identity Management Commission	NIMC
National Information Technology Development Agency	NITDA
Nigeria Data Protection Regulation	NDPR
Nigeria Governors Forum	NGF
Nigerian Army Finance and Administration	NASFA
Nigerian Communications Commission	NCC
Nigerian Communications Satellite Limited	NIGCOMSAT
Nigerian Council on Communication and Digital Economy	NCCDE
Nigerian Economic Summit Group	NESG
Nigerian e-Government Interoperability Framework	Ne-GIF
Nigerian Government Enterprise Architecture	NGEA
Nigerian Postal Service	NIPOST
Organization for Economic Cooperation and Development	OEDC
Policy and Regulatory Initiative for Digital Africa	PRIDA
Presidential Enabling Business Environment Council	PBEC
Programme for Infrastructure Development in Africa	PIDA
Right of Way	ROW
Single African Air Transport Market	SAATM
Small and Medium-Sized Enterprises	SMEs
Terms of Reference	TOR
United Nations	UN
United Nations Conference on Trade and Development	UNCTD
United Nations Department of Economic and Social Affairs	UN DESA
Universal Service Provision Fund	USPF
Whole-of-Government	WoG

CHAPTER 1. INTRODUCTION

1.1 Purpose of the study

The ubiquitous nature of technology and momentum of technological innovation, albeit with varying levels of adoption across nations, and the realities of the Fourth Industrial Revolution are driving changes in individuals, businesses, and across governments. These changes impact psychosocial, economic, security, political, and institutional behaviours. With reference to previous industrial revolutions, it is evident that investment in and adoption of innovation forms the major source of economic advancement for most countries (Vickers & Ziebarth, 2019).

The Digital Evolution Index (2017) assesses the adoption of digital economy in a bid to comprehend the digital evolution process of different countries with focus on strategic pillars driving digital evolution, namely: infrastructure, digital uptake, institutional digital ecosystem, entrepreneurship, and innovation. A major outcome of the digital planet report (2017) emphasises the crucial role of innovation and institutions as drivers in the acceleration of the adoption of a digital economy (Chakravorti & Chaturvedi, 2017).

The purpose of this qualitative study is to investigate the viability of the deployed institutional factors that are mandated to enable the implementation of the digital economy policy and strategy in Nigeria.

This study focuses on the service infrastructure pillar as described in Nigeria's National Digital Economy Policy and Strategy, which is intended at fostering the provision of a holistic and viable digital platforms to drive the nation's digital economy. This qualitative study explores the institutional frameworks as established that enable the implementation of digital economy policy and strategy in Nigeria.

1.2 Context of the study

The Economist Intelligence Unit Report on Technological Readiness Rankings (2018), which assessed countries digital economy infrastructure by analysing e-government services amongst other factors, suggested that efficiency and transparency are major benefits from a governmental perspective. Increased levels of engagement and ease of access to public services are also

perceived to be significant benefits from the citizens perspective (The Economist Intelligence Unit, 2018).

The World Bank Group and African Union are notable organisations driving initiatives to ensure digital enablement for individuals, businesses, and governments in Africa (World Bank Group, 2019). The Digital Economy for Africa (DE4A) in collaboration with the Digital Transformation Initiative for Africa, are the key initiatives powering Africa's digital evolution founded by the World Bank and the African Union, respectively. The Digital Economy for Africa (DE4A) initiative is founded on the principles of comprehensiveness, transformation, inclusiveness, homegrown and collaboration. This initiative comprises of five pillars namely: digital infrastructure, digital ability, digital platforms, digital financial initiatives, and digital enterprise development, as foundations crucial to the development of a successful and all-inclusive digital economy (World Bank, 2019).

With an estimated population of 200 million representing about 47% of West Africa's population, Nigeria's digital readiness and maturity becomes integral to the success of the initiatives proposed by the World Bank Group in partnership with the African Union for Africa to attain a sustainable all-inclusive digital economy (World Bank Group, 2019). In Nigeria, digitization initiatives have yielded commendable return on investment reaped on past e-government implementations in the public service, and have also improved cost effectiveness, accountability, and transparency (Federal Ministry of Communications and Digital Economy, 2019).

According to the World Bank Group, (2019) global digital economy was estimated to be worth about eleven trillion five hundred billion dollars in 2016, which represents 15.5% of the global gross domestic product (GDP) and is projected to hit 25% in a decade (World Bank Group, 2019). The National Bureau of Statistics second quarter report for 2020 indicated that the Information Technology and Communication sector grew by 15.09% and is reflected in the sector's contribution of 17.83% to the nation's GDP in the second quarter of 2020, an increase to its input of 14.55% and 14.07% in previous quarters (National Bureau of Statistics, 2020).

However, Nigeria's adoption and investment in digital technological initiatives has been hampered by poor electricity infrastructure and significant digital divides, resulting in an inability to achieve a holistic digital government transformation (Okunola, Rowley, & Johnson, 2017).

The Federal Ministry of Communications and Digital Economy developed The National Digital Economy Policy and Strategy, (NDEPS) (2020-2030) in alignment with the Economic Recovery and Growth Plan of the Federal Government. It addresses economic development, anticorruption, and security and represents the country's blueprint and framework to achieving an advanced and holistic digital economy by 2030. It describes a vision "to transform Nigeria into a leading digital economy providing quality life and digital economies for all".

The National Digital Economy Policy and Strategy document is founded on eight pillars identified as crucial to driving the digital economy namely:

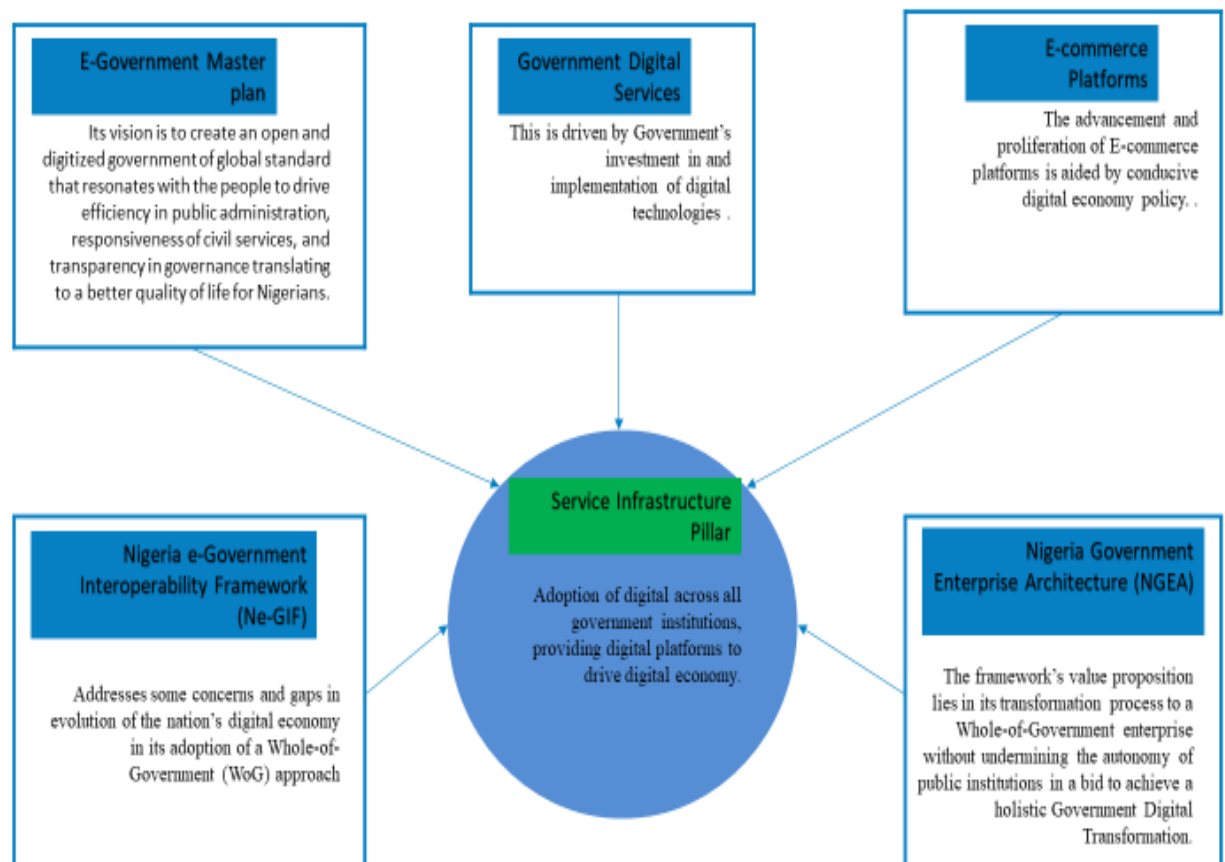
- 1) Development Regulation: Rapid assimilation of digital adoption to ensure availability of effective regulations that drive development, innovation, entrepreneurship, and citizen centricity.
- 2) Digital Literacy & Skills: Training facilitation across educational, vocational, SMEs and government institutions.
- 3) Solid Infrastructure: Provision of sufficient fixed and mobile infrastructure to foster broadband penetration.
- 4) Service Infrastructure: Adoption of digital across all government institutions, providing digital platforms to drive digital economy.
- 5) Digital Services Development & Promotion: Promotion of digital entrepreneurship and innovation by developing a digital ecosystem for businesses to thrive.
- 6) Soft Infrastructure: Gaining public trust to participate in the use of digital platforms.
- 7) Digital Society & Emerging Technologies: Creating a synergy between digital economy initiatives and everyday lives of citizens.
- 8) Indigenous Content Development & Adoption: Securing public and private sector patronage/support for digitally skilled citizens.

The Service Infrastructure Pillar is driven by the following policies and services as listed below and illustrated as shown in Figure 1.

- e-Government Masterplan
- Government Digital Services

- Nigerian e-Government Interoperability Framework (Ne-GIF)
- Nigerian Government Enterprise Architecture (NGEA)
- E-commerce Platforms

Figure 1. Drivers of the Service Infrastructure Pillar of the National Digital Economy Policy and Strategy.



Source: Researcher (2021)

1.3 Research problem

In 2019, Nigeria's Government, in a bid to achieve a digitally transformed economy, made a significant commitment towards improving Nigeria's level of digital maturity and readiness, and

empowered the Federal Ministry of Communication to develop a strategy, to coordinate and implement Government's digital economy mandate. This was followed by an official re-designation of the ministry to The Federal Ministry of Communications and Digital Economy on 17th October 2019, to reflect the ministry's new mandate of driving the initiatives to fulfil the nation's digital economy agenda.

The Service Infrastructure Pillar as described in the National Digital Economy Policy and Strategy document is supported/underpinned by the e-Government Masterplan, Government Digital Services, Nigerian e-Government Interoperability Framework (Ne-GIF), Nigerian Government Enterprise Architecture (NGEA), and E-commerce Platforms. Digitalization of institutions are integral to the evolution of a digital economy; hence it is imperative to develop government institution's digital ecosystem to drive digital evolution (Chakravorti & Chaturvedi, 2017).

This qualitative study investigates the suitability of the established institutional frameworks that are mandated to enable the implementation of the digital economic policy and strategy in Nigeria.

The problem of this qualitative study was centred on investigating the roles, responsibilities, efficacy, and current state of the institutions mandated to enable the implementation of the National digital economy policy and strategy in Nigeria.

1.4 Research Questions

The questions of this research are outlined below:

- 1) What are the institutional frameworks mandated to enable the Nigerian digital economy policy and strategy?
- 2) How are these institutional frameworks operationalised to enable the Nigerian digital economy policy and strategy?
- 3) Are these institutional frameworks adequately resourced?

1.5 Significance of the Study

Although the implementation of e-government systems in developing nations is slowly emerging, there are several components that impact the diffusion and uptake of e-government namely information technology, institutional and environmental components (Zhang et al., 2014).

User-centric design of e-government platforms and initiatives coupled with the use of public campaigns to promote benefits and encourage access of e-government platforms would alleviate the adoption of digital government initiatives in the drive to actualize digital economy (Verkijika & Wet, 2018). Ease of use of digital government initiatives deployed in relation to prevalent need of respective institution is a key to offsetting resistance encountered in alleviating the adoption process of digital transformation initiatives (Rey-Moreno et al., 2017).

This study investigates institutional frameworks as established that are mandated to enable the implementation of digital economy policy and strategy in Nigeria. The outcomes of this research are expected:

- 1) To provide a model that clearly identifies the institutional frameworks and its role in the evolution of the digital economy, thus setting a benchmark for national and regional digital policy as well as strategy formulation and implementation across states in the country and countries in the West African Region and sub-Saharan Africa.
- 2) To better understand how the enablement of key institutional frameworks would facilitate attainment of policy objectives of the service infrastructure pillar.
- 3) To address the need to devolve adequate resources to the institutional framework in alignment with the implementation strategies for the service infrastructure pillar of the National Digital Economy Policy and Strategy.

1.6 Delimitations of the Study

This study focuses on the organisational structure and influence of public institutions on the adoption of digital government transformation initiatives in a bid to implement digital economy programs contained in Nigeria's Digital Economy Policy and Strategy (Federal Ministry of Communications and Digital Economy, 2019). The core of this study is concentrated on the Service Infrastructure pillar, one of the eight pillars which Nigeria's Digital Economy Policy and Strategy is anchored on, with its theme focused on the adoption of digital transformation initiatives across all government institutions, providing digital platforms to drive digital economy. This study

investigates institutional frameworks as established that enable the implementation of digital economy policy and strategy in Nigeria.

1.7 Definition of Terms

The evolution of Digital Economy has been well researched and defined by various authors with interesting nuances regarding the concept. However, for the purpose of the proposed study and context Digital Economy is simply defined as leveraging digital technologies to stimulate growth of total economic output (United Nations Conference on Trade and Development, 2019).

A Whole-of-Government approach is an integrated and holistic system that emphasises collaboration among government institutions using e-government to deliver public service in a more effective and efficient manner, driven by the demand of the citizens (United Nations, 2012).

Enterprise architecture may be defined as a discipline of organising an enterprise resource to generate competences that foster the achievement of desired organisational vision and goals (NITDA, 2019).

The concept of e-Government has been extensively researched by various authors and scholars. However, for the purpose of the proposed study and context, e-Government is defined as the use of information technology capabilities and internet to deliver public services through innovation in a citizen centric manner (Mergel et al., 2019).

Leveraging several definitions from other frameworks and Gartner's research, in adaptation to the context of the proposed research, digital Government is defined as the creation of collaborative, efficient and effective service delivery models leveraging on utilization of data, analytics, and other digital technologies (Williams & Valayer, 2018).

1.8 Assumptions

This study assumed that there are institutional frameworks established for the purpose of driving the implementation of digital economy policy and strategy in Nigeria as mandated by the National Digital Economy Policy and Strategy. The study was also based on the assumption that although the private sector and academic institutions are key enablers needed to catalyse the momentum of implementing the National Digital Economy Policy and Strategy. The National Information Technology Development Agency is the primary government intuition in the public sector

mandated to implement the National Digital Economy Policy and Strategy, through the deployment of the Digital Transformation Technical Working Groups (DT-TWG) as the anchor for propagating the implementation of the National Digital Economy Policy and Strategy across the federation.

1.9 Chapter Outline

Chapter 1 encompasses a summary of the purpose, context, and background of the proposed study. It expatiates further providing problem statement and research questions that will guide the study, and this is followed by the highlighted contributions and delimitations of the proposed study.

Chapter 2 focuses on the analytical framework which includes the theoretical and conceptual framework used to anchor this study. It further explores digital government transformation frameworks, regional and National digital economy strategies and National digital economy strategies in Africa that are pertinent to the study. These are reviewed in alignment with the research questions and propositions.

Chapter 3 provides details of the methodology adopted for the study, this includes the research approach, research design, data collection methods, population and sample, research instrument, procedure for data collection, data analysis and interpretation, and associated limitation of the study.

Chapter 4 focuses on data presentation from the semi-structured interview conducted with research participants that were selected through purposive sampling based on the relevance of their role in respective institutions and the importance of institution's mandate in relation to the implementation of the National digital economic policy and strategy in Nigeria.

Chapter 5 discusses and interprets data presented in Chapter 4 in relation to the theory base and literature review documented in chapter 2 of this report.

Chapter 6 presents findings in relation to the research questions of the study to draw conclusions and recommendations in alignment with the corresponding propositions, purpose of study and research problem.

CHAPTER 2. LITERATURE REVIEW

2.1 Introduction

The aim of this chapter is to provide a summary and review of relevant institutional and scholarly perspectives on digital economy and the relevance of an enabled institutional framework, with emphasis on notable indexes and frameworks that have been used to analyse and model digital government transformations on a global scale.

2.2 Background discussion

The evolution of digital economy and the rapid advancement of digital technology changes have hampered the development of a universal definition for digital economy (OECD, 2017; Barefoot, Curtis, Jolliff, Nicholson, & Omohundro, 2018; UNCTAD, 2019). Bukht and Heeks (2017) investigation of the concept of digital economy using a compendium of sources through the evolution of definitions in a chronological order from 1996 till 2017, classified the focus of diverse definitions into perspectives namely: structural, resource, process, and business model perspectives.

Digital economy is understood as any economic activity that utilizes forms of digital technologies as leverage in the pursuit and achievement of an objective or outcome across diverse sectors (Carlsson, 2004; Bukht & Heeks, 2017; OECD, 2017; Barefoot, Curtis, Jolliff, Nicholson, & Omohundro, 2018; UNCTAD, 2019).

Janowski (2015), posits that with reference to context, for a digital policy strategy to be contextualized it must have evolved from a technology in government to focus on an internal digital transformation initiative coupled with a forward transition through engagement with external relationships and institutionalizing adopted innovations.

The peculiarity of the significant impact of advancement of digital technology on overall quality of life and economic prosperity of individuals, businesses, and nations, alongside its associated risks has stirred a global interest in the evolution of digital transformation (OECD, 2019). The United Nations Conference on Trade and Development (2017), associates the concept of digital economy with digital data and the prevalence of frontier technologies like Blockchain, Data Analytics, Internet of Things, Automation and Robotics, Cloud Computing, 3D Printing and Artificial Intelligence. The catalytic influence of digital economy permeates all the Sustainable

Development Goals, speeds up momentum through value creation channels such as platformisation, e-commerce platforms and digitization of value chains in developing nations (UNCTAD, 2019). However, digital data, governance framework, and the level of digital readiness of institutions and stakeholders are pivotal to the value creation process of the digital economy.

2.7 ANALYTICAL FRAMEWORK

2.7.1 Theoretical Framework

The evolution of digital economy has increased the relevance and significance of institutional factors, reiterating the pivotal, catalytic, enabling and facilitatory role of institutions in a bid to achieve economic advancement across diverse dimensions in an effective and efficient manner (Groenewegen, Spithoven, & Van den Berg, 2020).

New institutional economics will be adopted as the central theory for this proposed study. The new institutional economics posits that institutions are pivotal to gaining any form of economic advantage across diverse domains (Furubotn & Richter, 2005). Hence, it is integral to the evolution of digital economy considering its emergent nature in a bid to achieving a holistic economic advancement.

Understanding the diverse degrees of uncertainty that accompanies the concept of digital economy in relation to sociocultural context and economic peculiarities, impact of institutional influence in relation to constraints and catalytic capabilities, and the institutions quest for utility maximization are integral to delivering value for advancing a nation's digital economy (Dequech, 2005).

The Digital Evolution Index (2017) will be the underpinning framework that will be used for the proposed research as it provides a worldview of the evolution and advancement of digital economy globally. This framework is built on a reliable model that has been sustained since 2008 and evolved accordingly by using relevant data driven indicators. Chakravorti & Chaturvedi, (2017) posits that for countries to implement and achieve a sustainable digital economy, it must invest in the supply infrastructure, nurture an innovative environment, and empower its institutions and policy ecosystems. Depending on the size of the country, the strength of the institutional ecosystem driving digital economy has the capacity to catalyse the momentum of the adoption of digital economy initiatives and, increase its level of digital economic advancement (Chakravorti & Chaturvedi, 2017).

2.2.1 Digital Government Transformation Frameworks

2.2.1.1 The Digital Evolution Index 2017

The Digital Evolution Index (2017) evaluates the evolution of digital economy across sixty countries utilizing relevant indicators across four key drivers that are further segmented in a bid to gain a holistic view of the level of digital advancement and competitiveness of the nations under study. Below are the key drivers of digital evolution (Chakravorti & Chaturvedi, 2017).

- **Supply Conditions:** This focuses on the infrastructural requirements needed to drive digital evolution. It comprises of access infrastructure, transaction infrastructure and fulfilment infrastructure.
- **Demand Conditions:** Focuses on the prevalence of digital adoption by consumers.
- **Institutional Environment:** Regulatory and business environment, government institutions and the digital uptake, and institutional value delivery and trust are the components that make up this unit.
- **Innovation and Change:** This aims at fostering entrepreneurship, skills, best practices, and networks needed to operationalise digital evolution. It comprises of inputs, process and output deployed to advance digital economy.

To achieve a sustainable, competitive, and advanced digital economy, the four drivers must be implemented in synergy as no single driver can act in isolation to produce a desired outcome over an appreciable period (Chakravorti & Chaturvedi, 2017). The framework was developed into a chart with state of digitalization of countries plotted on the vertical axis and their respective momentum of digitalization is located on the horizontal axis. The quadrants of the resultant chart were classified and defined using the following tags:

- **Stand Out:** These are agile countries with a high level of digital advancement and competitiveness.
- **Stall Out:** Countries in this category are described to be digitally advanced, but not competitive due to a low level of innovation.
- **Break Out:** Although countries in this category exhibit a low level of digital advancement, they display huge potential, a high growth rate and momentum towards achieving a higher

level of digital advancement. Chakravorti and Chaturvedi, (2017) posit that such countries are limited by insufficient infrastructure and poor institutional frameworks. Nigeria falls into the breakout category in the digital evolution index chart.

- Watch Out: Countries in this category are characterized by an immature digital state and slow pace of digital growth.

The Digital Evolution Index (2017) identifies the institutional digital ecosystem as one of the key drivers of digital evolution as represented under the institutional environment. As such, it provides a deep insight into understanding the trajectory of the Nigerian digital evolution journey as laid out in the National Digital Economy Policy and Strategy. This is further elucidated in the momentum zone categorization that Nigeria falls into based on associated prevalent conditions that characterized the other members on the Break out quadrant (Chakravorti & Chaturvedi, 2017).

2.2.1.2 Organization for Economic Co-operation and Development (OECD) Digital Economy Outlook 2017

The exponential economic acceleration potential presented by the adoption of and investment in digital transformation, has led to a heightened global focus on the exploration and exploitation of digital technologies (OECD, 2017). Focusing on key indices like policy implications, development of measurement and monitoring capabilities, and adoption of an integrated whole-of-government approach are pivotal to reaping the huge potential benefits of digital economy (OECD, 2017).

The National digital strategy of majority of Organization for Economic Co-operation and Development (OECD), countries alluded to the importance of enabling government institutional frameworks in its analysis of the policy objectives contained in the digital strategy for the development of the digital economy of participating countries (OECD, 2017). Bolstering e-government services and development of telecommunication infrastructure were ranked with the highest priority among the assessed fifteen policy objectives.

The achievement of policy objectives is considered to have a ripple effect on the attainment of other objectives such as: inclusiveness and inclusion, growth in gross domestic product, improved productivity, improved quality of life, and sustainable development (OECD, 2017). The

significance of the institutional digital ecosystem indicated as e-government adoption or digital public services, or institutional environment is prevalent in frameworks, indexes and models developed by reputable global institutions for examining the levels of digital economy advancement of nations across the globe.

2.2.1.3 The Digital Economy and Society Index 2019

The Digital Economy and Society Index, used to assess the digital transformation competitiveness of European Union countries is analysed across five dimensions namely: connectivity, human resources, internet penetration, digital technology embeddedness, and digital government platforms (European Commission, 2020). An enabled institutional framework though pivotal to the operationalization and sustainability of digital public services dimension, it has not been given due acknowledgment as the backbone crucial for digital public services to thrive.

Chakravorti and Chaturvedi (2017) reckon that government digital uptake through its institutions is integral to the emancipation of a digital economy leading to an enhanced overall quality of life, accelerated economic growth and institutional effectiveness.

2.2.2 Regional and National Digital Economy Strategies

Although, there is no sufficient study about the nuanced effects of a well enabled established institutional framework on the implementation of several national digital strategies driving the advancement of digital economy in nations, it is imperative to pay attention to the suitability and enablement of implementation blueprint in the quest to achieve a sustainable e-government, government institutional environment or digital public services.

An analysis of the top ranked digitally competitive nations tagged as the D5 comprising of leading countries like Estonia and the United Kingdom in Europe, Israel in the Middle East, New Zealand in Oceania, and South Korea in East Asia, using the Fletcher School's framework for smart cities (2017), help set a global benchmark, using a smart societies footprint analysis to reveal nuances among countries based on context, priorities, and resource availability (Chakravorti, Chaturvedi, & Troein, 2017).

Drawing insights from the Digital Five's charter and pool of expertise on the best practices of creating a competitive and sustainable digital government and economy, proposes an outcome-based approach to measuring the progress of digital government advancement (Chakravorti,

Chaturvedi, & Troein, 2017). The smart society outcomes comprise of three key measures namely: Economy, People, and Institutions.

These are further decomposed into trackable components with a smart society footprint connecting all components, each outcome measure comprising of four components each and varying number of clusters feeding into each component (Chakravorti, Chaturvedi, & Troein, 2017). The quality of institutions, digital government platforms and investment in institutional frameworks is pivotal to the strength of footprints such as public services, economy, innovation, institutions, and well-being, for the attainment of a robust digital economy and digital government advancement.

Although, the global digital economy was valued at \$4.2 trillion in 2016, institutional and infrastructural impediments coupled with context peculiarities are key constraints to the advancement of the digital economy contribution to the global economy (Chakravorti, Chaturvedi, & Filipovic, 2019). Achieving an advanced and competitive digital economy is hinged on the premise of leveraging digital technologies for economic growth and citizen centricity. The policy or implemented framework outcomes are key indicators of the success of any digital transformation initiative.

The impediments to the implementation of a digital economy policy and strategy as necessitated by electoral cycles and change of government makes it empirical to develop formidable institutional frameworks that are sustainable across phases of government transitions (Sandoval-Almazan, et al., 2017). Thus, principles centred on the creation of an enabling institutional environment through continuous collaborations and leadership commitment through the legitimization of goals and strategy integration into all government mission is vital to the implementation of a National digital strategy (Sandoval-Almazan, et al., 2017).

Sandoval-Almazan et al (2017), suggests that the enablement and development of institutional frameworks is integral to the implementation and sustainability of a digital strategy, and it needs to be strengthened by creating a top management portfolio that is immune to electoral change.

2.2.3 National Digital Economy Strategies in Africa

Korovkin, (2019), in his analysis of National digital economy strategies in Africa highlighted the prevalent dominance of either an issue-based or vision-based approach in the strategy of most African countries. However, the study noted that such approaches to the formulation of a National

digital economy policy and strategy are not sustainable since they do not consider the constraints and context peculiarity of the available resources and infrastructure required to deliver measurable outcomes in alignment with international standards.

Chakravorti, Chaturvedi, & Troein (2017), suggests setting a continental or regional policy dashboards based on geographical, economic, and social alignments to establish a benchmark for the evolution and monitoring of digital government and economy competitiveness. For the context of this study, the Digital Transformation Initiative for Africa by the African Union presents a probable platform for creating an integrated dashboard, benchmark, and standard policy framework for countries on the continent.

The primary objective of the Digital Transformation Strategy for Africa is to leverage digital technologies and innovation for the digital economy advancement and competitiveness of the African continent (African Union, 2020). The expected outcomes are guided by the principles of solidarity and cooperation, comprehensiveness, transformation, inclusiveness, homegrown, a new mindset and, safety. The foundation pillars of this initiative are conducive environment, policy and regulation formulation, technological infrastructure, digital human resources, innovation, and entrepreneurship (African Union, 2020).

The motivation for this research is highlighted in the Digital Transformation Strategy for Africa (2020-2030), as a key implementation concern for the strategy in its swot analysis noting that an enabled institutional framework of member countries is integral to continental coordination, without which such projects would not be able to deliver its proposed objectives and outcomes.

The Digital Government Transformation Strategy for Mauritius (2018-2022) utilizes a needs-centric approach to the development and implementation of its digital strategy in concerted efforts with local and international stakeholders. The strategy framework adopts an outcome-based approach in alignment with global best practices relying on the twelve digital government strategies as recommended by the OECD (Central Informatics Bureau , 2018).

The institutional framework is empowered by developing a dedicated Public Sector Business Transformation Strategy through collaboration with international institutions (Central Informatics Bureau , 2018). The outcome-based approach and empowerment of institutional framework employed in the implementation of the digital government strategy of Mauritius has helped advance its digital economy and competitiveness. Assessing the digital government and economy

maturity across value orientation, service model, platform approach, digital ecosystem, leadership, digital technology focus, and key metrics have helped Mauritius advance its digital economy and competitiveness (Central Informatics Bureau , 2018).

The United Nations E-Government Survey (2020), using the E-Government Development Index (EGDI) ranks Mauritius 63rd among 193 analysed countries, and 1st in Africa. The United Nations E-Government survey (2020) espouses key pillars crucial for a sustainable digital transformation namely: Institutional and regulatory framework; Data governance; Resource's availability; Educational capacity and capabilities; Societal capacity and uptake; ICT Infrastructure; affordability and accessibility to technology; System thinking and incorporation; Culture and organizational system; Vision, leadership, and mindsets. The framework utilized by the e-government survey is people-oriented, focused on the accessibility and suitability of a telecommunication infrastructure, enhancement of human resources using ICT, and prevalence of internet content and services (United Nations, 2020).

The E-Government survey (2020) posits that top ranked countries imbibe a whole-of-government approach and an integrated system thinking model into their institutional framework. This supports the policy implementation and monitoring to ensure improved digital economy and sustainable digital government transformation. The idiosyncrasies presented by the COVID-19 pandemic has catalysed the investment and commitment in the empowerment of government institutions by countries for the advancement of digital government transformation to deploy innovative public services to all stakeholders (United Nations, 2020).

According to the Networked Readiness Index (2019), Mauritius ranked 53rd out of a total of 121 economies and 1st in Africa. The Networked Readiness Index (2019), is rated based on the assessment of four pillars namely: (1) Technology pillar comprising of sub-pillars including access, content, and future technologies; (2) People pillar concerned with the exploration of ICT by individuals, businesses, governments; (3) Governance pillar focused on context and environment for navigating issues bordering on trust, regulation, and inclusion; (4) Impact pillar is focused on the evaluation of economy, quality of life, and sustainable development goals contribution (Dutta & Lanvin, 2019). This index highlights the criticality of key pillars integral to policy development

for the implementation of a National digital economy policy needed for a holistic and sustainable digital government transformation in the digital age.

2.3 What are the institutional frameworks mandated to enable the National digital economy policy and strategy?

Yang, (2003), emphasised the coevolution of institutions and digital government transformation as pivotal to the achievement of a sustainable and competitive e-government initiative, suggesting that adopting an institutional approach is imperative in the deployment of digital government initiatives. Noting that the entire digital transformation process is hinged on the creation of institutional frameworks that form a platform or domain for tracking progress of the digital evolution process. Therefore, identification of institutional frameworks sets the appropriate planning phase and monitoring platform to evaluate the impact of the implementation of digital economy policy and strategy against set benchmarks.

2.3.1 Proposition 1

Institutional frameworks are key enablers of the National digital economy policy and strategy.

2.4 How are these institutional frameworks operationalised to enable the National digital economy policy and strategy?

Jun and Weare (2011) posits that institutional empowerment or motivation via internal and external influences are pivotal to the outcome of a digital strategy. Hence, it is imperative to adopt means of providing appropriate and adequate approaches to ensure that the adopted institutional frameworks are suitable and sufficiently bolstered for the execution of the national digital economy policy and strategy in Nigeria.

2.4.1 Proposition 2

Operationalisation of appropriate institutional frameworks enables the National digital economy policy and strategy.

2.5 Are these institutional frameworks adequately resourced?

Digitally advanced countries and developing countries dedicated to boost their digital economy and competitiveness imbibe common characteristics that includes (United Nations, 2020):

- Establishment of new institutional frameworks.

- Appointment of a chief information officer to manage the holistic digital government transformation policies, strategies, and initiatives.
- Provision of adequate human resources in government institutions for the implementation of digital government transformation initiatives
- Implementation of institutional cultural change initiatives at newly established institutional frameworks
- Empowerment of mandated institutions with an autonomous capacity to manage and mobilize required resources to implement digital government transformation policies, strategies, and initiatives.

The evolution of new institutions and its frameworks necessitated by innovation and the adoption of digital government advancement have espoused the significance of slack resources, expertise, and investment in newly established institutional frameworks as key success factors in the implementation of digital government transformation projects (Tolbert, Mossberger, & McNeal, 2008; Jun & Weare, 2011).

2.5.1 Proposition 3

Sufficiently resourced institutional frameworks are imperative for the enablement of digital economy policy and strategy in Nigeria.

2.6 Conclusion of Literature Review

The global perspective of digital economy is precipitated through the developed frameworks, indexes, and models by reputable institutions as a guide to fostering the understanding of the concept of digital economy, creating a holistic approach to explore and harness its full benefits as countries develop respective National digital government transformation policies and projects to partake in the opportunities created by the evolution of the global digital economy.

This trend has led to the adoption of principles and prescribed pillars that are integral to the sustainability of an advanced digital economy. A common characteristic pillar consistent across notable digital government transformation models and framework is the key relevance of government institutional digital ecosystem or environment to the execution of a digital government transformation policy or strategy in a bid to achieve an advanced digital economy.

It is believed that creation of a robust digital government platform is pivotal to the evolution of a digital economy. This may be achieved if government institutions saddled with the responsibility of driving the implementation of digital economy policy are well enabled and equipped with the capability to deploy resources required for the implementation of digital economy policies.

Below is an overview of the study as illustrated in the consistency table.

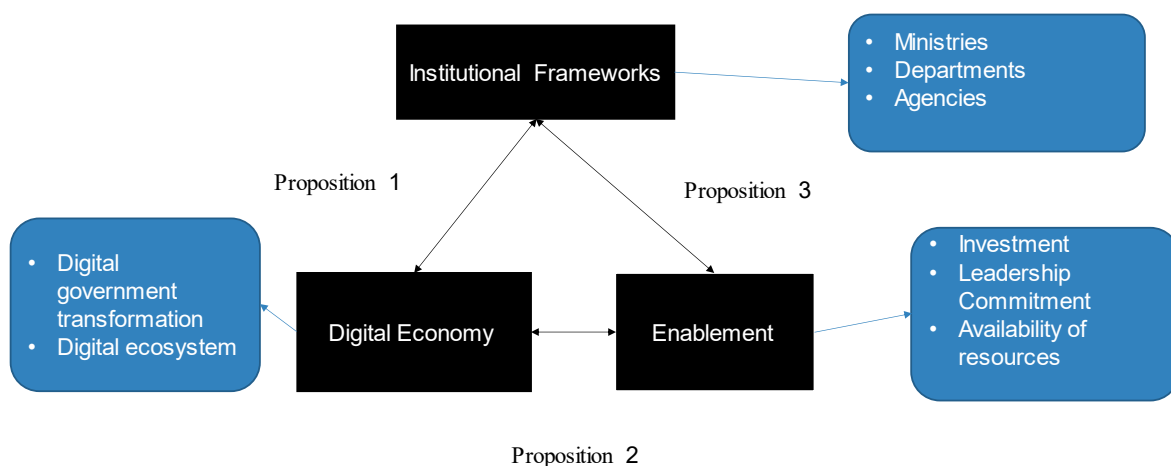
Consistency Table			
RQ #	Research questions	Proposition #	Propositions
1	What are the institutional frameworks mandated to enable the Nigerian digital economy policy and strategy?	1	Institutional frameworks are key enablers of the Nigerian digital economy policy and strategy.
2	How are these institutional frameworks operationalised to enable the Nigerian digital economy policy and strategy?	2	Operationalisation of appropriate institutional frameworks enables the Nigerian digital economy policy and strategy.
3	Are these institutional frameworks adequately resourced?	3	Sufficiently resourced institutional frameworks are imperative for the enablement of digital economy policy and strategy in Nigeria.

Table 1.

2.7.2 Conceptual Framework

Figure 2: Conceptual Framework

Conceptual Framework



Source: Researcher (2021)

CHAPTER 3. RESEARCH METHODOLOGY

This chapter gives a broad overview of the core activities carried out in conducting the research study as it relates to the research purpose and problem as explained in Chapter 1 of this report. It includes the research approach and design, population and sampling methods, data collection, analysis, and interpretation.

3.1 Research approach

This study analyses the viability of the institutional frameworks mandated to operationalise Nigeria's digital economy policy and strategy. This exploratory study adopts a pragmatic philosophical worldview due to the evolutionary nature of the digital economy concept and mode of implementation in relation to supporting institutional frameworks across diverse contexts (Creswell & Creswell, 2018). Hence, the exploratory nature of the proposed research using semi-structured interviews within a qualitative research approach, aims to provide answers for the posed research questions. This mode of research is best suited for the interpretative phenomenological analysis approach due to its participant-oriented features as it engages diverse experiences of the phenomenon under study (Alase, 2017).

3.2 Research design

The qualitative research approach is adopted for the study due to the emergent nature of the concept of digital economy and the investigative nature of the study as it seeks to gain a deeper understanding in response to the research questions that are posed (Creswell & Creswell, 2018).

The research adopts a phenomenological research design due to the nascent nature of the phenomenon of the proposed study and the diverse perspectives of institutions, experts and stakeholders in academia as regards best practices for policy implementation in relation to the capacity and capabilities of the institutional frameworks (Creswell & Creswell, 2018). In this context, assessment of the views of experts and key stakeholders driving the implementation of digital economy policy and strategy is investigated by conducting in-depth interviews guided by the research questions of the study (Alase, 2017).

3.3 Data collection methods

The emergent nature of the research coupled with the interpretative phenomenological analysis approach, necessitates the need for a well detailed and flexible data collection method which is

achieved by conducting semi-structured interviews with participants (Smith, Flowers, & Larkin, 2009).

Semi-structured interviews sessions were held with key stakeholders in public institutions, public/private sector liaison institution, and academia. These institutions and research participants are knowledgeable of the national digital economy policy and strategy. Open-ended probing questions were employed to elicit essential data about established and proposed institutional frameworks (Terrell, 2016).

3.4 Population and sample

3.4.1 Population

The population utilized in this study includes the Federal Ministry of Communications and Digital Economy, National Information Technology Development Agency, the Digital Transformation Technical Working Groups (DT-TWG), and Digital Economy Policy Commission of the Nigerian Economic Summit Group and academia. This represents a pool of subject matter experts and key stakeholders with requisite knowledge and information about the formulation and implementation of the National digital economy policy and strategy designed to foster the advancement of the nation's digital economy.

3.4.2 Sample and sampling method

The study employed a purposive sampling method based on the expert knowledge criteria used for selecting participants. In this case, members of mandated institutions as delegated by the leadership of the organization are in the best position to provide insights about the enablement of institutional frameworks for the implementation of digital economy in Nigeria (Magida, 2020), specifically the Federal Ministry of Communications and Digital Economy, National Information Technology Development Agency and the Digital Transformation Technical Working Groups (DT-TWG), as well as experts from academia and the private sector who are involved in the formulation and implementation of the National Digital Economy policy and strategy document.

Six interviews were conducted with participants described in Table 1.

Description of Participants	No of participants
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Federal Ministry of Communications and Digital Economy	1
National Information Technology Development Agency & Digital Transformation Technical Working Group (DT-TWG)	3
Nigerian Economic Summit Group (Digital Economy Policy Commission) (Private Sector-led Institution)	1
Academia	1

Table 2: Profile of Participants

3.5 The research instrument

An interview protocol was developed to guide the semi- structured interview sessions, which allows for the posing of probing questions giving the interviewee the freedom to give more insight on the research questions, hence providing more understanding about the purpose of the study (Terrell, 2016). Each of the interview sessions lasted between fifty to ninety minutes based on the consent of respective research participants. This allowed sufficient time for in-depth description and explanation of the focus of study by research participants during the interview sessions.

3.6 Procedure for data collection

Due to the COVID-19 pandemic restrictions and protocols, interviews were held on digital meeting platforms including Zoom, and Microsoft Teams which also allowed for recording of the interviews. Consent forms, participant information sheets and permission letters were distributed prior to the interviews. Interview sessions lasted between fifty to ninety minutes as permitted by respective participants to ensure an enriched engagement with the phenomenon under study according to the participant's perspective and experience (Smith, Flowers, & Larkin, 2009).

The interview procedure entails some information about the purpose of the study followed by introductions both by the researcher (interviewer) and interviewee before the interviewer begins

with opening questions to ease the interviewee into the process. Research questions and sub-questions are asked about the key concepts involved in the research in an inquisitive and knowledge seeking manner (Creswell & Creswell, 2018). The researcher utilized online meeting platforms like Zoom and Microsoft Teams for data collection of the entire study and all participants consented to recording of interview sessions. Interview questions are deduced from research questions of the study and collected responses digital media platforms like Zoom and Microsoft Teams based on the preference and consent of the interviewees. Handwritten notes are taken as the standard for collection of response and data during the interview.

Private reports, and documents offered by some of the interviewees were also utilised to obtain more data on the purpose of the study (Creswell & Creswell, 2018). The researcher also explored collection of data from the online presence and social media handles of respective government institutions as new developments unfolded.

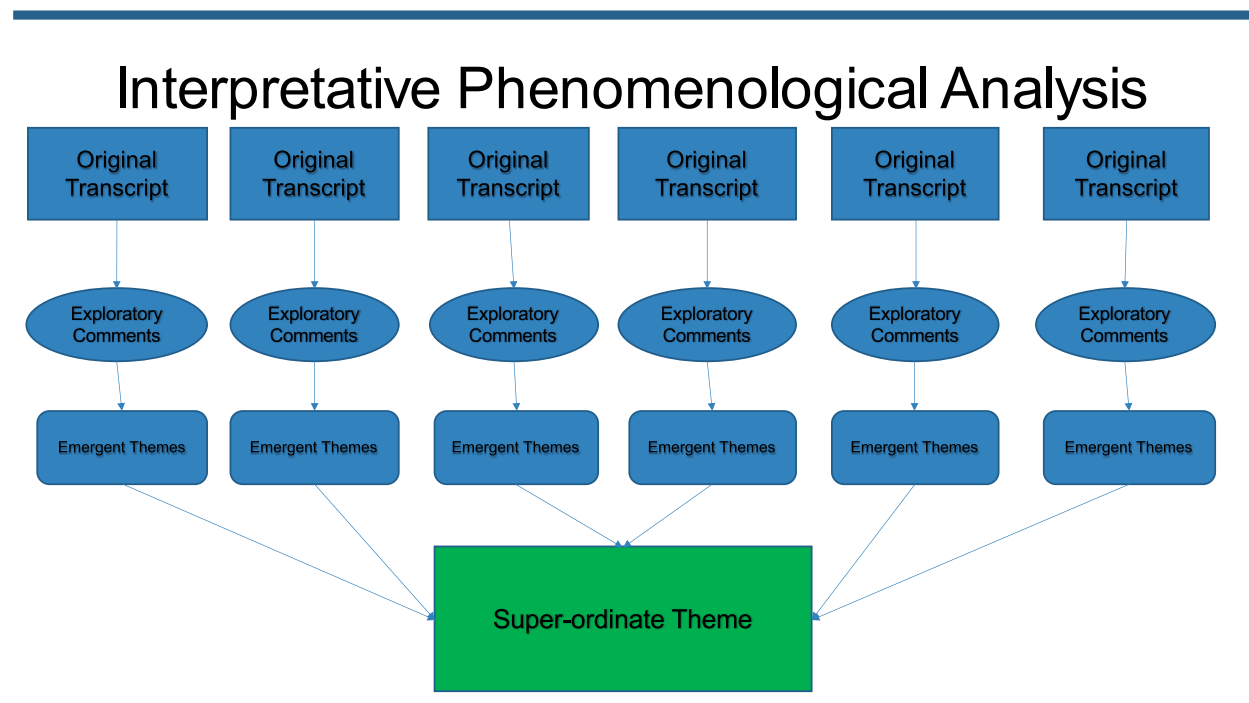
3.7 Data analysis and interpretation

Due to the peculiarities and nuances of the phenomena under study, the proposed data collection method, the homogenous sample selected, and the degree of flexibility required, an interpretative phenomenological analysis was used for data analysis and interpretation (Pietkiewicz & Smith, 2014). The dynamics involved in the early-stage implementation of the National digital economy policy and strategy requires a flexible analysis, engaging an exploratory interpretation of key stakeholders' perception of the institutional framework enabling the digital economy policy and strategy (Smith, Flowers, & Larkin, 2009).

The Interpretative phenomenological analysis entails the researcher engaging with the data by listening to the recordings severally before transcribing the data. The transcribed data is further explored to gain in-depth understating into key issues, concepts, and the participants perspective of the research question (Smith, Flowers, & Larkin, 2009). This is done using exploratory comments to describe, conceptualize and engage with the terms used by the participants. Here, the focus of analysis is the participants of the study, as such the original transcript is critical to analysis and interpretation. The researcher screens the transcript for patterns, differences, similarities, elaborations, inconsistencies in the participants responses to posed questions.

This phase is followed by refinement of the original transcript and exploratory comments to further distill ideas as understood by the researcher in a reflexive manner to identify the emergent themes of the study. The data interpretation phase is hinged on finding relationships across emergent themes through abstraction, subsumption, and contextualization to formulate a super-ordinate theme, aggregating related emergent themes (Smith, Flowers, & Larkin, 2009).

Figure 3. Interpretative Phenomenological Analysis



Source: Researcher (2021)

3.8 Limitations of the study

The study was conducted during a pandemic caused by the COVID-19 virus as such digital meeting platforms was leveraged for collecting data through a semi-structured interview restricting the whole data collection phase to online mode. The uncertainty surrounding restrictions protocols enacted by the government impacted accessibility of key stakeholders within the public sector amid the first and second wave of the COVID-19 virus.

Even though snow-ball strategy was utilized, it had no appreciable impact as referred participants within the target sample population were indisposed despite several attempts to setup interviews

using digital meeting platforms. Although, the researcher considered participants across the public institutions, private sector, and academia, it is imperative to note that the National Information Technology Development Agency is the primary agency responsible for driving the implementation of the National digital economy policy and strategy in alignment with other public institutions through the deployment of the Digital Transformation Technical Working Group (DT-TWG). Hence, intense efforts were made to get most research participant from the National Information Technology Development Agency (NITDA).

Bureaucracy within public institutions and the unavailability of appropriate online contact channels impacted the pace of data collection. Since the researcher had to visit several public institutions physically to submit permission letters despite having written several emails to such public institutions.

The National Digital Economy Policy and Strategy that was the focus of the study was still at an early stage of implementation as such, awareness level of the implementation framework was limited to stakeholders within ten percent of public institutions. As a result, the members of digital transformation technical working groups within respective institutions were not fully formed and functional during the data collection phase.

The industrial action embarked on by the Academic Staff Union of Universities (ASUU) coupled with the poor digital presence of public institutions made it impossible to engage with members of academia which were initially part of the population sample the researcher sought to cover in the study.

Due to the mode of research design and the interpretative phenomenological analysis adopted for this study, more time is often required for conducting one-off/multiple interviews with a minimum of one hour to one hour thirty minutes needed for a comprehensive session. However, due to time constraints, participants only subscribed to a one-off interview lasting for a maximum of one hour for seventy percent of participants.

3.9 Transferability and dependability

In this context, the interviewees are the custodians of the phenomenon being investigated, noting that the researcher's bias based on work experience might not hold waters anymore as the policy

under study was launched in November 2019. This guarantees the credibility, authenticity, and trustworthiness of the study as the chosen sample size is a true representation of the experts and key stakeholders that are mandated to drive the digital economy of the context of study (Creswell & Creswell, 2018). The transferability and dependability of this research is hinged on the due diligence, documentation and data collection procedures employed during the study with focus on just one of the eight pillars proposed in the National Digital Economy Policy and Strategy of Nigeria.

3.9.1 Transferability

The research approach, research design, data collection method, population and sample, and procedure for data collection utilised for this study ensures for thorough description of details. This provides a solid base for other researchers to use for future research on the purpose of study in the chosen context (Creswell & Creswell, 2018).

3.9.2 Credibility

The population and sample used for this study was carefully selected through purposive sampling while ensuring that most of the research participants are members of the public institution primarily responsible for implementing Nigeria's digital economy policy and strategy. Although the number of the research participants were limited to six due to the emergent nature of the policy under study and the prevailing covid-19 pandemic at the time of study. The study captured a sizeable number of research participants from the public institution primarily responsible for implementing the National digital economy policy and strategy. The semi-structured interview conducted for the study lasted for at least fifty to ninety minutes, allowing for deep insights and more details hence, giving more credence to the study. The researcher also had vast experience in carrying out interviews based on his past academic and professional experience, and he ensured research was carried out in an ethical manner in line with the ethos outlined in the approved ethical clearance for the study (Merriam, 2009).

3.9.3 Dependability

Based on the emergent nature of the proposed study, capturing the present reality of the purpose of study might not be feasible as it is constantly evolving. As such, the dependability of the study cannot be ascertained over a long period of time as the implementation of the policy under study

continues to evolve. The researcher did not subject the study to peer examination or audit trail to ascertain the level of the study dependability (Merriam, 2009).

3.10 Demographic profile of respondents

The selected sample size of the interviewees is domiciled in the cities of Abuja and Lagos in Nigeria, all interviewees are male, and they represent the credible authority at respective institutions. Three of the research participants were members of the National Information Technology Development Agency & Digital Transformation Technical Working Group (DT-TWG) that were predominantly responsible for driving the implementation of the National Digital Economy Policy and Strategy, this represents most of the research participants engaged for the study. One research participant was engaged from the Federal Ministry of Communications and Digital Economy, Digital Economy Policy Commission of Nigerian Economic Summit Group (Private Sector-led Institution) and academia respectively.

3.11 Ethical considerations

The researcher ensured that approvals for the chosen research instrument and data collection method and procedure were granted by the Wits Business School. The interviewees were given sufficient information about the aim of the study and their permission is sought by issuing a consent form that outlines the purpose of study, necessary guidelines for data collection method and procedure about the study to the prospective interviewees for approval. The privacy of the interviewees is given utmost priority during the study and after the study must have ended. The study outcomes are confidential and used for research purposes only.

CHAPTER 4. PRESENTATION OF FINDINGS

4.1 Introduction

This chapter presents data findings in response to the research questions, which related to the viability and suitability of the mandated institutional frameworks mandated to implement the National digital economic policy and strategy in Nigeria. The data was obtained from semi-structured interviews conducted with research participants as it relates to research questions listed below:

- 1) What are the institutional frameworks mandated to enable the National digital economy policy and strategy?
- 2) How are these institutional frameworks operationalised to enable the National digital economy policy and strategy?
- 3) Are these institutional frameworks adequately resourced?

Interpretative phenomenological analysis is used for this research, and this chapter therefore focuses on presentation of the original transcript which represents responses from research participants based on their respective understanding of the sub questions that are related to the core research questions. Exploratory comments are notes made by the researcher in form of descriptive, conceptual, and linguistic comments to the responses of the participants (Smith, Flowers, & Larkin, 2009). Emergent themes focus on key concepts that emanates from the original transcript and exploratory comments relying on the researchers understanding of the transcript.

4.2 Results pertaining to Research question 1.

Research question one was related to institutional frameworks and specifically asked “What are the institutional frameworks mandated to enable the Nigerian digital economy policy and Strategy?” Below are the verbatim responses from research participants to respective posed questions relating to the research question 1.

4.2.1 What is the overview of the current institutional framework aiding the deployment and propagation of the national digital economy policy and strategy across institutions?

According to Participant 1 “If you check on the last page of the document, there is a list of organisations that are key stakeholders in the implementation of the policy- yes, the index

documents. These are the institutions that are regarded as important for implementation of a digital Nigeria.”

Participant 2 believed that “As part of strategy different organizations are expected to implement their part. The Ministry of Communications and Digital Economy is spearheading. We have five agencies, namely NITDA, NCC, NIMC, Galaxy Backbone, and NIGCOMSAT.”

Participant 3 stated that “The policy is digitizing economy, but the people and institutions may not necessarily be the institutions you expect. The problem is that many entities and companies are left, and only those at the top are doing it while those at the bottom are struggling.”

Participant 4 presented his responses as follows: “A little bit of context is important here to set the framework on which you can hang some of these thought processes. Prior to the Nigerian Economic Policy and Strategy, there was a digital transformation process in Government that started in 2014 and that culminated in the launching of the Nigerian Government E-Masterplan.”

“The project was driven largely by the South Korean Government Cooperation Agency under a Government-Government partnership. Now, in 2019, when they wanted to launch the document as Head of ICT Systems thematic Group, I was called in to review the document. So that is where my involvement in Government Digital transformation strategy started. I led the team that transposed the work the South Koreans did, and we were able to launch in May 2019 what is now known as the Nigerian Government E-masterplan that sets out 25 key initiatives to drive Governance, reduce challenges with transparency and accountability, digitization of governments operations and all the other projects.”

“So, in late of 2019, the former head of NITDA, Dr. Isa Ali Pantami was selected to be the new head of the Ministry of Communication and Technology. One of the first things he did was to change the name from Communication and Technology to Digital Economy. In so doing that he needed to form a strategy where not only Government will transform but the society as well. So, we worked with NITDA, and I was called in to lead the development of the original work that led to the development of NDEPS, within a short period.”

“It was further resourced and transposed into Nigeria Digital Economy Policy and Strategy Document. That was slightly preceded by the World Bank launch at the 2020 E-Nigeria Conference– Nigeria Digital Economy Diagnostic Toolkit. The toolkit is World Bank’s perspective

on Nigeria's Digital Economy. Lots of metrics for context for dimensioning of the Digital economy."

"The NDEPS- coming to your question. It is essentially based on eight pillars, such as institution of Developmental Regulation, Digital Skills, Soft Infrastructure, Solid infrastructure, Services Infrastructure etc. It is a working document that is used by the Minister to advice Presidency on the name change and relevance. The eight pillars cover the full hammock of NDEPS."

Participant 5 presented his responses as follows: "It depends on what you view as institutional frameworks. You know in what context? Institutions that are responsible because institutions could be the policy and guidelines that the different institutions come up with and them become institutionalized in a manner that everybody becomes used to them or are you talking about institutions as organizations that are mandated to be developing policy and guidelines and frameworks and implementing them towards digitalization."

"Right first things first, The NDEPS was developed in the coming of the current Minister of Communications and Digital Economy, towards using the-as we see digital platforms driving business and so on and then taking over so many things. It is important that that aspect of the economy is captured for dualization of the goals of the economy in Nigeria."

"First the ministry was re-designated from Ministry of Communication and Technology to Communication and Digital Economy. Like you said so many policies have been developed by different Government in different sectors. What makes the NDEPS different is the coming together of these institutions you are talking about towards implementation."

Participant 6 responded to posed questions as follows: "There is a governance framework in place So when it comes to Governance it's all about accountability in making decisions. Who are we entrusting with decision making as far as ICT is concerned? That is the simple meaning of governance. So, you have that structure to be able to make decisions and you ensure that those decisions are perfect, in the interest of the country. Also, are coming from experts and everybody has their responsibility across board. So, if you look at it, we have what we call ICT/E-Government Presidential Committee."

"This was supposed to be the overall ICT Government coordinating body for the country after the development of E-Government Masterplan and when we started the implementation. But you

know NITDA does not have authority on the Presidential Committee. You know it is a Presidential Committee ----It is at that level, so what we are looking at is to have the buy-in from the Presidency. To have a buy-in from the Presidency to say when it comes to, we want ICT, digital economy to be at the core of managing the country so that we can achieve what we call real digital transformation and real digital economy in the country.”

Table 3.0. Governance structure for Implementation and Compliance

Governance Structure: Implementation and Compliance	
Who	Responsibility
ICT/e-Government Presidential Committee	Overall ICT/e-Government Coordinating Body
Federal Public Institutions	Government Digital Service (GDS) Providers
Directors/Heads of ICT	Translating every provision of the NGEA to the CEOs, the Management, and the entire organization. CITO's of their respective organizations; Business and IT alignment
National IT Project Clearance Committee	All IT projects adheres to all the provision of the NGEA and other IT regulatory instruments. Approving architecture exceptions and waivers. Provide recommendations for NGEA review.
NGEA/Ne-GIF Implementation Committee	Complementary structure: to promote and ensure implementation at all levels, Review of NGEA.
Digital Transformation Technical Working Group	Communicate & advise management on NGEA compliance and organization's EA implementation. Escalate challenges and compliance report.

Source: Research Participant

4.2.2 Are deployments within institutions prioritized in terms of their mandate based on digital maturity? What are the metrics used for this?

According to participant 1 “The organizations have different levels of commitment and roles they will fulfil. The very core institutions are under the purview of the Ministry- NITDA, Galaxy

Backbone, NCC, NIGCOMSAT, USPF, NIPOST, and recently NIMC, to fulfil an important role regarding digital identity. This is the Government aspect.”

Participant 2 addressed the question saying “From an implementation point of view, these agencies have their strategic pillars in policy. They include Regulation, Hard and Soft infrastructure, Inclusiveness. The Ministry is focused on Digital Transformation, adoption of Local Content, Digital Literacy, and Developmental Regulation. That is from the Ministry perspective. From countrywide perspective, all agencies are not on the same level of digital transformation so what we did was to form Digital Transformation Working Groups (DTWG) across MDAs.”

Participant 3 stated that “We are still at infancy. People have not started using the web for many creative things because they are mindful that their data will finish. Once we reach that level people are not bothered about data and then we can achieve such.”

Participant 4 responded to posed questions as follows: “According to my thoughts on the document, I think I believe I often celebrate small successes. I felt that while the document tells us where we want to go and what we probably need to be doing to get there, it omits telling us where we wish to go and what we probably need to be doing there. In other words, the action steps are required. Where do we wish to go? What must be done?”

“These are the critical strategies but the how is left to our interpretation. Even if there is a timeline, there should be an addendum to the document on Strategic Implementation Metrics or Plan. Before you design a strategy document, you need to be more explicit in how we should implement the action steps, for example what does the soft infrastructure, do and achieve, what projects do we need to implement to build it, and what are the policy instruments that need to be enforced.”

“These policy instruments are largely mentioned in the Nigeria Government Enterprise Architecture (NGEA) which is a subsidiary of the E-Government Masterplan. It should also address the Pillar for Developmental Regulation. Implementing a Nigeria Government Architecture means you need to have a uniform bird’s eyes view for Government Information and Artifacts. There are technologies –Government Information Assets and Artefacts- and there are people who know, what technologies to implement, and you should not go and implement oracle, here and there.”

“You know you have Nigeria Data Protection Regulation, but all your government information is stored in the cloud. There is need for resourcing that document further. However, the Ministry by means of the E-Government Masterplan they were meant to have set up and resourced a Nigeria Presidential Council on E-Governance. It has not been set up till date. The implication is that you cannot view Nigeria Government and MDAs as one enterprise.”

Participant 5 presented his responses as follows: “You know we used to have the ICT policy which NITDA was mandated to implement, and technology is dynamic, and things change. You must take cognizance of what is going on and you adapt. Literally, you do policy there is no direction with how it will be carried. The difference with NDEPS is that after the document was put in place, the implementation of the roadmap for the implementation of the NDEPS was also developed. Do know if you have seen the document, there’s a roadmap. Now the Ministry of Communication supervises different parastatals that are expected to drive this implementation.”

“You have got NITDA mandate to develop and regulating the information and technology sector. We have got the NCC which is more response for regulating telecommunication. Galaxy backbone responsible for Government digital services, deployment and so on, which is a company owned by Government. NIGCOMSAT, NIPOST responsible for postal services. Each of these parastatals have their mandate as identified by the act, NITDA 2007 and NCC Act as well. NOW NDEPS goes from the desire of the Federal Government to achieve some specific developmental issue you know look at how digital technology may be used to support overall objectives in the digital space in terms of creating jobs, innovation, using emerging technologies and so on so for each of these agencies.”

“And of recent, NIMC and digitalization of identity has been transferred to the Ministry of Communication. These organizations are expected to come together and drive the implementation of NDEPS with the roadmap that has been drafted for implementation. Each of them has taken part responsibility. Broadband Plan under the responsibility of NCC is an example.”

Participant 6 responded to posed questions as follows: “If we do not have that leadership support, whatever you are doing is not going to succeed. But as you know we have limited power in the Presidency. I am just telling you the Committee is about to be set up, it is there, the Committee is there, it might not be as functional as we want it. Of course, the Federal Public institutions have their own to role to play in terms of digital service. They are provider of services. Every

government organisation is set up to provide service. They need to have that in mind and see how to digitize their service, that is their role, responsibility.”

4.2.3 Is there an assessment done to determine digital maturity of institutions with regards to implementation of NDEPS?

Participant 1 answered this question by saying referring to the first previous question stating that commitment vary across public institutions. However, “We also interface with stakeholders in the private sector especially organisations that represent different subsectors. For example, the Nigeria Computer Society for the IT related part, and the Hub ecosystem in the country. There is also an Association for Licensed Telecom Operator (ALTON) and an Association of Telecom Companies of Nigeria (ATCON).”

Participant 2 stated that “We have 100 MDAs that have already been included, and we train them, with a minimum of Director to handle Digital Transformation. Another 100 are proposed in this regard. In terms of organizational framework, the Ministry follows through with all MDAs and guide them to implement it.”

“On state level, we are designing digital economic policies for some of them. We are also looking at making each state form their DTWG so that we may scale it down and ensure that impact at federal levels go down to state level. NITDA is the agency responsible for coordinating the DTWG.”

Participant 3 believed there is no sufficient digital infrastructure necessary for attaining the level of digital maturity needed for implementing NDEPS.

Participant 4 responded as follows: “The critical platform for services infrastructure is [http.services.gov.ng](http://services.gov.ng). Working with Koreans and Galaxy backbone but without cooperation from different MDAs. The developmental regulation is a critical pillar upon which you hang a lot of what Government will do to drive digital economy.”

“The economy is largely run by the private sector. You will need legislation and an enabling business environment. You should know how we are faring in business environment index globally. Developmental Regulation is critical to enabling environment, but you seem to be jumping to implementing digital strategy, without settling the former.”

“This informed the Digital Identity as foundation for driving digital economy. When US\$240million was granted by the World Bank to support Nigeria’s Digital Identity Drive but they did release because Nigeria didn’t meet the conditions due to developmental regulation. They have a strategic implementation document for this work. I think we can applaud many things critically, but here are issues e.g., Twitter going to Ghana, that shows how risky the business environment is for the private sector.”

“Digital economy is largely driven by the private sector and the Government’s job is to set up a business environment for the private sector to invest in. To a large extent, this is the way my team developed the work for NITDA. We came up with five pillars and five drivers on which the digital economy is built. The pillars are the foundational elements upon which the economy is built Digital skills among the citizenry and government, a Digital infrastructure which consists of software and hardware and platforms.”

“The business environment was transposed into Developmental Regulations. By using the term business environment, it comes not from a regulatory perspective but setting the right environment. For example, CBN’s directive to ban crypto will affect blockchain technologies, investors and other investors consider the Nigerian space. The benchmark across companies that have done something similar, e.g., South Korea and South Africa and to a lesser degree, the World Bank Diagnostic Document – it is DE4A.”

“The World Bank’s document for benchmarking digital technologies. The drivers for digital economy, are only considered pillars and not drivers. For example, there is nothing addressing the funding aspect. Where are your initiative programs and projects? And how much will you spend on the critical actors you need to implement? Another driver is research and innovation. Although capital is seen as a pillar, it should be a driver because you cannot quantify it in absolute terms. It is a driver to all the critical pillars –infrastructure, and business environment pillar.”

Participant 5 presented his responses to posed question as follows: “There was target of 35percent Broadband Penetration, one development that will not happen without requisite infrastructure--- the broadband plan will not happen. So, the target for 2020 was 35 percent and has been met and surpassed to 40 something which has been met as at the time. Now the NDEPs set a target of 70 percent Broadband penetration plan, which the NCC is expected to implement so that areas that do not have access towards technology can thrive and have access towards digital technologies.”

“Then, infrastructure cannot cause development to happen. Development does not happen based on one index or metric or in isolation, it cannot just be one. So NDEPS take cognizance for the development of the technology ecosystem, for instance NCC for digital identity, NITDA for technology sector. Not to strangle development but to make environment conducive for business to happen.”

“That is why there is Pillar 8 on Developmental Regulation in NDEPS. There must be some form of regulation to support the ecosystem. Then different things can happen. Of course, whether there is Broadband Penetration, if people do not know how to make use of it. It may be there and be sitting there, of course you know about the tele-centres that did not achieve the desired purpose for being put in place. And then so much has happened for ICT development, you will have seen lots of ICT technology projects and intervention not achieving the desired purpose because there is lack of knowledge and how to make use of the access that you have gotten. That is why there is Digital Skills and Literacy pillar.”

Participant 6 responded to posed questions as follows: “We have CEOs of the organizations which will approve IT project on behalf of the organizations. They are to provide leadership. While coming down to Directors or Heads of ICT which translating the NGEA. Of course, translating organizations strategy into what IT can implement. These are the roles of Directors and Heads of ICT. There is a National Committee consisting of private sector. The DT-TWG comprises of 10 members per agency across 125 MDAs, another batch of 100 MDAs are awaiting implementation.”

A vision-based approach, governance framework and the issue of digital maturity were the main themes that emerged in the response to the questions posed relating to the first research question. Most of the participants indicated that institutions are different level of commitment; there is more emphasis on the policy document; level of commitment in public institutions vary; based on the policy, federal public institutions are the primary drivers of the policy; public institutions mandates are aligned with the digital economic policy according to respective roles.

One participant highlighted that there is limited multi-stakeholder participation from representatives of the private sector and states coupled with poor digital adoption mechanism. Another participant stressed that the policy does not have clarity as regards institutional framework, implementation plan, projected outcomes and milestones, requisite institutional

strength, institutional synergy and sufficient level of awareness among institutions required to drive policy implementation.

One participant however noted that there is governance structure designed to anchor and drive policy implementation and compliance nationwide. The Tables below presents the raw data of participants in terms of original transcript, exploratory comments, and emergent themes as a characteristic feature of the interpretative phenomenological analysis approach.

4.3 Results pertaining to Research question 2.

Research question two and its interview sub-questions was related to operationalisation of established institutional frameworks mandated to enable the Nigerian digital economy policy and strategy. Below are some key verbatim responses from research participants to respective posed questions relating to the research question 2.

4.3.1 What is the mode of deployment and operations?

Participant 1 stated the following in response to the posed question: “One of the things my boss emphasizes is that it is not a federal DEPS but a National DEPS. The difference is that if Federal it will be coordinated or managed by them, if National it is expected to be implemented at state and local level. if you look at list, we cannot add all 36 states, so we included Nigeria Governors Forum.”

“When we want to discuss with Governors, we route it through the forum, that is why they are listed there. On broadband plan implementation, the Minister had a recent engagement with Governor Fayemi, Chairman NGF and attend the forum to discuss with them on the importance of right of way charges i.e., 145 per linear meter. We carry everyone along; States are also involved, we carried out Digital Nigeria Program in Ekiti recently.”

Participant 2 stated the following in response to posed question: “As part of strategy different organizations are expected to implement their part. The Ministry of Communications and Digital Economy is spearheading. We have 5 agencies e.g., NITDA, NCC, NIMC, Galaxy Backbone, NIGCOMSAT. From implementation point of view, these agencies have their strategic pillars in policy. They include Regulation, Hard and Soft infrastructure, Inclusiveness. The Ministry is focused on Digital Transformation, adoption of Local Content, Digital Literacy, Developmental Regulation.”

“That is from the Ministry perspective, from countrywide perspective, all agencies are not on the same level digital transformation so what we did was form Digital Transformation Working Groups (DTWG) across MDAs. We have 100 MDAs that have already been included, we train them, with a minimum of Director to handle Digital Transformation. Another 100 is proposed in this regard.”

In terms of organizational framework, the Ministry follows through with all MDAs and guide them to implement it. On state level, we are designing digital economic policies for some of them. We are also looking at making each state form their DT-TWG so that we can scale it down and ensure that impact at federal levels goes down to state level. NITDA is the agency responsible for coordinating the DT-TWG.”

Participant 3 stated the following in response to posed question: “There are issues that are evident on a national level and Nigeria does not work in a federal system that allows communities to flourish. You can’t use the same playbook to guide all states of the federation. That Digitalization policy should emanate from the state who are closer to the people and can design their system that is local and work for their people than everything centralized at Federal level. Our technology could be more in tuned with local citizens to prevent disconnect with the people.”

“These are fundamental issues, but most things are politicized, literacy rate differs in states. It is expected that literacy rate will correspond with digital literacy rate. Focusing on digital literacy rate without dealing with root causes of basic education you cannot address digital literacy.”

“The reality is that you expect capacity of states differs. and without consulting them you may not know their capacity to help the Federal Government to drive adoption. For instance, Lagos and Zamfara states. Thus, there are fundamental policies at federal level, but implementation and execution should be driven at state level with incentives, intervention programmes where you begin to release resources to state based on milestones attained.”

Participant 4 stated the following in response to posed question: “When things are done at Federal you can appeal to the States, but you cannot force compliance. You can force states. But a lot of them do because they look up to FG for support. You will come into political will of the people as you cannot for. Ogun State Digital Economy Infrastructure. The entire project is being funded by World Bank its 200 million USD. Before they did that, they passed Zero Right of Way (Zero ROW).”

“Zero Right of Way has been recommended in the Nigerian National Broadband Plan (NNBP) 2020-2025, to develop NNBP. Zero ROW Infrastructure Policies are things or policies that if state adopt ROW –I think it is about 60-70percent of laying fibre- Its recommended form Federal but States see as a revenue means. Ogun has seen the vision, so they waived, Kaduna, Ekiti, Imo waived too, and these states are benefiting from influx of laying of fibre.”

“It is the foundation upon which you build a lot of other digital economy aspect e.g., E-Agric, E-Education. That can be like a case study where policy and regulation can attract the right investment- good policy, good investment and good business.”

Participant 5 stated the following in response to posed question: “So, I can talk from the perspective of NITDA and what we have been implementing since 2016. In the past it has been just providing interventions. and setting up technology shops and so on without concentrating on regulation aspect and capacity building.”

“In 2016, a 4-year plan or roadmap that was targeted at increasing the growth of the digital sector- IT sector and at the forefront in 2016 was IT Regulation, Developing Local Capacity in Hardware and Software, ensuring that Nigerians can use both. So, there was a roadmap contributing to these pillars and seeing the development happened, that is the NDEPS. Now when the NDEPS came it was not very far from what NITDA has been doing and in terms of what happened in Federal parastatals, that is where one of the most important regulatory functions that NITDA does supports the sector.”

“First, there is E-Government Master Plan developed for Nigeria with support of South Korea. Within the document, the E-Government Master Plan that is supposed to promote Government Digital Services is the Enterprise Architecture and Interoperability Framework. The Enterprise Architecture gives a service wide architecture for what is supposed to be deployed within Federal Ministries, of course states are not supposed to be directly involved. We can provide advisory services and support them with digital inclusion, but they are not exactly under some of the regulations that are developed under the NITDA regulation.”

“We also invited the Chief executives; you cannot drive IT implementation without them. Executive capacity building programs are conducted so that they understand what is going on. Now for each Public Institution to deploy IT infrastructure within that organization they must seek clearance from NITDA to do so. So, they apply to NITDA to clear their projects, NITDA as an IT

advisory agency for Government looks at the project, any corrections or addition or subtraction for the project to be successful, NITDA advises that agency accordingly before they implement. So many projects have gone all the way to Federal Executive Council for approval because they are IT project and not received clearance from NITDA. So, they needed to come back to review the project. We then go ahead to give them the clearance. For us it is to just ensure that there is adequate sharing of public resources, adequate observance of Executive Order on Local Content because where there is capacity for Nigerians to provide that service, you don't need to give it to a foreign company."

"However, we do not concern ourselves much with cost of the project because it is the responsibility of Bureau of Public Procurement (BPP) to ensure that the cost for the project is appropriate. We also advise where we see that the cost is too high or too low, we provide advice for the success of the project (advisory services). And then we ensure that there is adequate security provided in implementation of project to avoid any risk to public infrastructure or any harm to public infrastructure that have been designated as critical infrastructure i.e., if government infrastructure will be relating with other IT services."

"Though, that road map has expired in 2020 and NITDA has come up with a new roadmap that aligns with NDEPs that will continue to build on what has been achieved in the last 4 years. And this roadmap has some 7 key strategic pillars of ensuring Digital Innovation and Entrepreneurship Pillar. Because Government is keen to see that jobs are created from all the sector of the economy. So how will the digital economy sector support that vision of the FG so that we have the Digital Innovation and Entrepreneurship Pillar."

"We also want to in that space continue to promote indigenous local content, software, and hardware. How do you also see that Digital Transformation continues to happen with Federal Public Institutions? There is no way that we would not have something around Digital Literacy and Skills that is also another pillar. And then the way emerging technologies are taking over, provision of product and services. Cybersecurity is still a pillar; we have done so much work around development of policies and regulation and so on. It is also still part of what we are going to continue doing as IT changes so the regulations have to also adapt with the happening in IT ecosystem."

“There is aspect of interventions which certainly do not happen in Abuja. So, where do you think NCC does all its interventions too like the Schools Knowledge Centre that they do? across all the 36 states. NITDA from 2016 till now has done 80 digital centres every year. So, 80 multiplied by 5 now is like 400 centres apart from IT hub like telecentre that have about 15-20 computers, solar panels, e-learning facilities and so on and provided at different states of the federation. Some of them are in LG areas, skill acquisition centres sort of coordinated by LG or states, some in schools in rural areas so that it will support building of awareness and capacity of Nigerians. And of course, the Virtual Learning Platform that NITDA has done where Nigerians can just go ahead to NITDA academy portal to register for courses that could support in bridging the digital divide between urban and rural areas.”

“There are varying types of interaction and partnership so they just write Ministry of Communication, NCC or NITDA for some of intervention in a particular area some are interested in how IT can support development to happen in their states or support different services. NITDA has the National Adopted Village for Smart Agriculture (NAVSA). That program is supposed to support smart and precision planning. Of course, that project is not for digital architecture within Federal Public institution. That is for supporting farmers in rural areas, supporting state that have agriculture programs to have new ways of farming, understanding climate change using technology, emerging technologies like IOT and smart phones for farming. We’ve done that in Ekiti, Jigawa and Gombe state. So, there is that local support to show the power of technology in driving different sectors and change.”

Participant 6 stated the following in response to posed question: “We also have what we call National IT Project Clearance Committee, I am also a member of that Committee. What we are saying in Nigeria is that for every Federal Government organization to carry out IT project, you need to bring it to NITDA for clearance. The essence of this is that now we have what we call Cloud Computing Policy. We have Local Content Guidelines in terms of encouraging people to use local content in deployment of ICT in the country. So, we have the NGEA that specifies each those things at each layer.”

“That is the essence of National IT Project Clearance Committee, to look at those projects so that we can have the expectation for those IT projects that can be met for the country not for the organization itself. We are looking at the whole of Government not a single organization. And that

is what the NGEA and NE-GIF is preaching i.e., the Nigerian Government Interoperability Framework. Looking at the country, organizations as whole, Federal Public Institutions as a whole. So that it becomes easier for you to share information and data at the time you need to provide that service. These are the things we are looking at. I hope the role of the National IT Clearances is clear to you. It is just for Government; it doesn't extend to private sector. Private sector are businesses. Just doing their business but we can provide leadership, we can provide support, provide enabling environment for them to thrive."

"State govt inclusion is coordinated with the Governor forum. Each state can develop its policy according to peculiar needs. States in pilot phase include: Nasarawa, Jigawa, and Ogun these are chosen based on the needs of selected states. The policies are adapted to the National e-government master plan although the autonomy of states gives them the liberty to develop their own policy."

"NITDA is the regulatory body in the country to ensure that any ICT project that is implemented in the country is based on standards. You know IT is expensive, you do not go and set up data centre where you don't even need it, why not collocate. Somebody has the structure, why not create an enabling environment for them to thrive instead of wasting money. So that we are talking about so many criteria to deciding around clearing a particular IT project from an MDA."

"The role of NGEA/NE-GIF Implementation Committee is just to be looking at those Documentation, I mean specification from NGEA/NE-GIF and advise appropriately, as at when due and report to the Presidential Committee. Because these two documents are majorly document for implementing E-Government Masterplan. Because the plan is just there but you need something to back it up----to implement that plan and that is the role of NGEA/NE-GIF."

"Then as I said, there is a gap. If you want to make decision, you do not make decision for like 700 MDAs. So, you need to go down to their organisations. So, what we did here is to have a DT-TWG (Digital Transformation-Technical Working Group). And they have Chairman in each of these FPIs. The Chairman happens to be a representative of the NGEA/NE-GIF Implementation Committee. The Chairman of DT-TWG in an agency, this group is higher but the Chairman here (NGEA/NE-GIF Implementation Committee) happens to be the Chair or Director of ICT in MDAs (DT-TWG)."

" These DT-TWGs is comprised of both the business and IT people. The IT people are just the Chairman, but the business are the core guys. Like if you are set up to provide transportation

service, it means that the transportation service is your core mandate that should be around how you control traffic and all that. Those departments that are set up to do that are the core business guys. But IT is just coming to enable it for you. So, you need to ensure that you have understanding that there is alignment between IT and the Business. Ensuring there is alignment in IT and in Business is what we have done different. To say this group is supposed to be made up of say the technical guys and at the same time the business guys.”

4.3.2 Is there an assessment framework/model in place to evaluate progress made in implementing NDEPS?

Participant 1 stated the following in response to posed question: “The policy has been written for easy adaptation. Each state has its peculiarities like agriculture, so they focus on pillar relating to that. NITDA is coordinating a program NASFA which uses- Emerging technology in Agriculture which corresponds to Digital Society and Emerging Technologies which is Pillar 7. So Jigawa or Ekiti with focus on agriculture could work implementing that pillar.”

Participant 2 stated the following in response to posed question: “After designation of Ministry of Communication to encompass Digital Economy, there are some like CBN because of nature of their operations, they are already well structured. Then CAC, FIRS have formidable digital structure. Not all agencies have such so what we did was go to every MDA and ask what they have.”

“We sent questionnaires to all the MDAs and evaluate what they have. It is on this basis in this that DT-TWG was designed. We can collaborate with an agency that already has structure, while we work with those that don’t have from ground zero to digitally transform them. We continue to strive to achieve this. We are looking at IT Governance.”

“We recently designed IT Management Policy. If a staff is using a computer, these are the rules to follow for password, software. Part of the responsibilities for DT-TWG is to do Information System Audit as a Monitoring and Evaluation of projects for MDAs and public institutions. We are in a Federalism where state have independent legislature. As a federal agency, concentrating on Federal institutions and MDAs.”

“We have National Communication and Digital Economic Council where all states come together every year and update us on what they have done. We on our own advice states, review their policies e.g., ICT Development Agency we gave them expertise for them to scale down. Due to budgetary constraint, we must employ this mode as states must key in and many states are interested. What we do solely is for public sector.”

“For private sector we have National Data Protection Regulation where all banks key in, National Data Protection Officers. We create an enabling environment for companies to thrive e.g., start-ups, companies. We also partner with private companies for training. Part of our mandate is to create an innovation system and government cannot do it alone, so we need private entities and partner with them for implementation e.g., payment system. Nigeria has a formidable one National Adopted Village for Smart Agriculture (NAVSA) to deliver its mandate to Nigeria citizenry.”

“For states, we have project, one in Enugu state we have federal projects but domiciled in states. If we give ICT hub to universities, they will be in states. States that have studied policy and want to key in will approach us and we advise. The first thing is that they have a DTWG. We have contact person in working group. Kaduna, Lagos had IOT seminar on smart cities. We customize based on ability of state. We give benchmark to MDAs but not to states so that FG will not be seen as autocratic.”

Participant 3 stated the following in response to posed question: “The one size fits all model will not work; differences must be taken note of. So many but the best way is the at how this improves peoples’ lives. If they see how, it betters their life, they will take it seriously. So, if such happens a lot of things will come into place, it is a critical aspect. We run a webhosting business where we support people. They usually do not return because there is not much value for such people in their lives.”

“In the US each state does not have to develop at the same pace. - Texas (oil), Florida (tourism), New York (Banking). Such system encourages comparative advantage, each part can move at its own rate and focus on a particular aspect. A state may build pipe for internet while other can figure out how consumers can use them. Top-down approach will struggle in 21st century. What is the impact of universities on surrounding communities and in Nigeria not much has been achieved? But abroad gigantic companies have mushroomed around universities e.g., MIT. The company I work for started from MIT.”

Participant 4 stated the following in response to posed question: “It’s not clear. If they had put Strategic Implementation Metrics. If you check E-Government Masterplan you will see such Metrics. You will see the project you want to do and federal institutions that are part of it. E-education program, we list Federal Ministry of Communication, Federal Ministry of Education, Finance, Budget, and National Planning. So, if Federal Executive Council (FEC) has passed that document that means everybody is bound to commit.”

“This is because there is no Strategic Implementation Metric showing all responsible parties, it makes a lot of these implementation of these policies subject to translation. What my team is doing is discussing with Ministry of Communication to set up a Digital Economy Industry Working Group across the state made up of public and private sector. It was approved in Nigeria Council on Communication and Digital Economy (NCCDE) made up of all states.”

“We need to begin resourcing the working group, we can now help set up the Strategic Implementation Metrics that will end up as portfolio document and investment prospectus, so that is what private sector is doing. That is why I mentioned the NCCDE. It is made up of all heads of IT across 36 states, the Minister heads the council, The Permanent Secretary of the Ministry sits as DG.”

“To design a NGEA, you need to create a toolkit, or it is a framework that exist not only as a policy but as a government platform that helps to determine the state of e-readiness across the entire MDA. So that as you are building capacity all the DT-TWG are going to their MDA and going to assess people skills, technology platforms, internet and infrastructure and software systems available.”

“Once you have this assessment in place, you can now know how to address and engage each of the MDAs with respect of Nigerian Government Enterprise Architecture. So, you train 500 DT-TWG, there is meant to be a platform or an NGEA portal to track progress but how many of the trained people have done this. I worked for SKGCA recently to know how many MDAs are ready for NGEA to build their capacity. NGEA requires strong political will which is the Presidency, and an enabling legislation. If NGEA and Nigeria E-Government Interoperative Framework (NEGIF) are embedded in an E-Government Act, tell me which MDA will not align to NGEA. And then you now build NGEA platform and train people. Have you seen how I sequenced it- Strong Political Will, Change Management, Platform Infrastructure and then you build Capacity?”

Participant 5 stated the following in response to posed question: “The E-Government Masterplan also supports the Government in showing how the general overview of the implementation of IT should be within organizations i.e., Federal Public institutions. And then within that, we also developed the interoperability framework so that organization A when implementing its IT framework architecture, soft and hard infrastructure, it ensures that they put in place things that will allow sharing of services and information across Federal Public Institution (FPI).”

“Under that we expected to build the capacity of staff under federal Public Institutions, which NITDA is already implementing. Selecting champions within different organisations and making use of them as the contact of what should be your organisational enterprise architecture as aligned with the Nigeria Government Enterprise Architecture. There is a website for that if you want to go and look, the NGEA website. We have invited staff from all Federal Public Institutions, and we have provided some form of training on what is require of them in the implementation of IT services within their institutions and how they can build an interface with us who are the regulator and developer of the sector and those who are their top management.”

“There was some benchmarking that was done but I was not part of the implementation roadmap team. Because within that roadmap they tried to benchmark some of the achievements they want to see in the next 5 years. I can only at the tip of my finger remember the Broadband Penetration one and there is the E- Government Global Index. So, there is that one and I think they are trying to see the point to which Nigeria can increase on that index as the implementation of the NDEPS goals but those are information I can look for and share with you.”

“During the previous roadmap in NITDA, they also have some benchmarking they did for the Digital Inclusion Pillar to ensure the participation of youth and women in terms of playing their role in the digital economy sector. But I do not have exact figures to share with you on that benchmarking.”

“The Minister is an advocate of thinking globally and acting locally, what he calls GLOCAL, in a manner that things are happening in global world, and you see how you can localize the perspectives to suit what is happening in our own context. So, it may be global best practice but that is not what is best fit for your own context. So, I advocate for organisations to adapt to what best fit for your own purpose and objectives rather than global best practices and then what you do fails along the line.”

“The interaction with States is on various level, there are those on advisory, there are those at policy. There are policies that have to do with States, the National Digital Protection Regulation, which NITDA drafted as a subsidiary legislation to protect the right of citizens to their private data. It applies to everyone. If you breach the data of a Nigerian share to external sources, and it comes to the notice of NITDA you will be persecuted. For instance, a company shared data of Nigerians and NITDA was informed, and we took it up and they paid fine. There are general and there are subsidiary legislations that states must abide by to avoid infringement upon the right of Nigerian citizens.”

“There is also the advisory one we provide to state. For instance, States want to use IT to develop their sector. So, we collaborate with them and help them develop their state IT policy. How will they use it in agriculture, governance? States are imitating the role that NITDA plays and setting up State IT Development Agency. There is one in Plateau, Benue. Bauchi. Ogun. There is Bureau for IT in Kaduna, there is in Zamfara., Nasarawa. Some states have even benefited from the E-Government Masterplan where they intend to use government digital services. There are those we support to develop policies and interact with them every year to ensure that we know what is going on within the state.”

“The Federal Government cannot mandate States in the country or force them to have a digital State IT policy but as I said that is why we have the NCCDE, where all the states come together with at least 70-80 percent attendance. And then they tell the Communication Ministry these are the things they have been doing and these are the areas/gaps that they want support from the Ministry. So, in that manner, States can only be supported and advised accordingly. And with regulations like NDPR, States will properly be advised to adhere to provisions of the regulation because violation could be a criminal case if you infringe upon the personal private data of citizens.”

“For Broadband penetration to happen, there must be laying of cable and so on. It used to cost a lot of money before the NDEPS but then the coming of NDEPS targeted the reduction of amount that usually prevent private company from investing in broadband. It is now a minimum of 140 naira per km. The Minister engaged the Nigeria Governors Forum (NGF) and encouraged them to reduce Right of Way and a lot of them have cancelled it and there is no need for investor to come and pay a lot of money, they just need to contact the state and show them the plan for their networks, its 140knaira per km which is the barest minimum.”

Participant 6 stated the following in response to posed question:” As I said we have NGEA/NE-GIF Implementation Committee which I said comprise about 50 members including the IT professionals and some of the business professionals. So, which of course, this also is a complementary structure to ensure promotion and implementation at all levels. They are to review NGEA, they are like providing that kind of support at that level. They are just 50 people, so they are like overall body trying to review activities, coordinate things, set direction and at the same time they are reporting to the E-Government Presidential Committee.”

“So that is what it’s all about. So that explains the kind of structure that we have in the country currently. Each MDA now has their own Digital Transformation. For the first 100, now we are going to set up other 100 as we continue, we try as much as possible to ensure that every FPI in Nigeria has their own DT-TWG that will be making decision for them.”

“As I said, we have given the DT-TWG their own responsibility, in terms of what they are expected to do. I am trying to see if I can get it here. Yes, I call it TOR, so you see DT-TWGs in FPIs. So, you can see these are the role and responsibility:

- Playing the role of advocates for the digital economy and digital transformation-related activities.
- Advising the management on adoption and utilization of digital technologies for business transformation and effective digital service delivery.
- Guiding automation and digitization of Government business processes.
- Providing support and guidance for initiation and implementation of IT projects.
- Ensuring proper alignment of IT projects/programs with the business of governance.”

“The benchmark is the National E-Government Masterplan. However, the states can do anything outside the masterplan, you know they are on their own Federal Government cannot force them to do anything. We can just encourage them and ensure that we carry them along in whatever we are doing. To force them is not what we can do. We need to tell them what we are doing so that they can try to do the same thing.”

“We are doing lot of things, now we have what we call Digital Transformation Performance Assessment Toolkit so this what we are doing. That is what we are trying to do. if you look at here, there is set of questions that come with the toolkit that are going to be digitized, that we are going

to be using to measure. As I said we have 9 parameters like Digital Leadership and Governance, so there is a lot of set of questions. Does the organisation have a vision for digital transformation for instance? So, if you have a vision, is this vision linked to National Developmental Agenda and aligned with National priorities. These are some of the things that we are going to measure you with. You do not just deploy IT, you can't just be spending money, IT is expensive, so we rank you and say okay, you belong to a certain stage, and you need to improve.”

“Even though we need to do more as an organization do more but at my level am trying my best to ensure change there's transformation in the country. You know when you talk about digital transformation in the country it's not about technology, it's a whole lot of activities that has to do with the eventual advancement of the digital economy.”

Digital infrastructure, digital access, digital literacy, digital readiness, change management, whole of government, top-down implementation approach and key performance metrics were notable themes that emerged in the response to the questions posed. Five participants alluded that reduction or waiver of right of way charges by states in the federation will help attract more investment in the digital infrastructure of the country; digital infrastructure is a key success factor required to drive policy; there is emphasis on improved digital access to drive engagements among institutions and citizens.

Four participants indicated that the Digital transformation technical working groups (DT-TWG) serves as the operational tool for the propagation and implementation of the policy across federal public institutions; there is need to create awareness about the strategic implementation plan and metrics of the policy; central benchmarks are needed to guide policy implementation; top to bottom implementation approach utilised. Three participants highlighted that institutional digital ecosystem impacts the ease of doing business; assessment of digital readiness and maturity of established institutions is vital; there is need for upskill and acceleration of digital literacy initiatives to drive policy.

Another participant alluded that political interference and low access to universal basic education are primary factors that could potentially inhibit policy implementation. The Tables below presents the raw data of participants in terms of original transcript, exploratory comments, and emergent themes as a characteristic feature of the interpretative phenomenological analysis approach.

4.4 Results pertaining to Research question 3.

Research question three was related to resources allocated to established institutional frameworks and explicitly asked “Are these institutional frameworks adequately resourced?” Below are some key verbatim responses from research participants to respective posed questions relating to the research question 3.

4.4.1 What are the challenges faced by the established institutional frameworks?

Participant 1 stated the following in response to posed question: “The first challenge has to do with Funding. There are ambitious plans but boils down to finance e.g., Broadband plan is about US\$4billion so government has to partner with private sector and developmental partners”

“Another issue is Digital Literacy- Like implementation of Pillar 8 on Indigenous Content Development. You need to have mass number of Nigerians that are sufficiently skilled to take charge of the sector. Digital Literacy and high digital skills to thrive in the sector”.

“Issue with Buy-in of Stakeholders. At Federal level not much problem but at state level, of course many states, it depends on how much they are willing to implement or adopt the digital economy program. There is lots of advocacy to encourage Governors. The issue of Right of Way, before Minister had a meeting with them in 2013 it was agreed for 145 naira per linear meter but when telecoms company went to state, these states saw it as a cash-cow not as something that can facilitate development”.

“So, they were engaged to see this as positive note which will encourage companies to come and invest, development and increase internal bandwidth.”

Participant 2 stated the following in response to posed question: “Funding is limited, and this constrains the project, also resistant to change by Agencies is a major factor. This can be attributed to the unequal level of awareness by Agencies. As a result of this, Digital Literacy an important aspect of the policy to carry everyone along, citizens are skeptical of Government policy for example the NIN issue. Ministry noted that it is key to identify all for accurate data on what we do.”

“The issue of resources a normal challenge, one of the strategic roadmaps for NITDA is capacity building, which forms part of rationale for DT-TWG. Human capacity shouldn’t be a problem if the state is willing. As part of the implementation plan, the Minister set up Broadband Plan where

there is Broadband penetration, we look at served and unserved areas. The Ministry has tried to drive down price of data as well as to ensure every community has access to fiber optic to better their standard of living.”

Participant 3 highlighted that the major challenge lies in the implementation approach, lack of collaboration with key stakeholders and insufficient funding for the educational sector which holds the key to revolutionising the country’s digital economy.

Participant 4 stated the following in response to posed question: “Like I said, you can score them high on the motivation and the drive because Covid has let all know that it’s a wake up that we have to look at other aspects of the economy in terms of digital economy. So, you can score them high in terms of that. But the implementation is where they will score low because they’ve not used best practices and domain experts to champion these initiatives. When you have someone that has high motivation but lacks capacity, you still have a very high failure rate.”

“Well, the National Broadband Plan has achieved success but considering NDEPS, it does not have an implementation policy so not much gains here. The definition of success is impact on citizens, on business, what are your KPIs that will tell global and local that you have achieved these things? The Government might rate itself well, but the people cannot feel the impact. Digital is not infused into secondary curriculum; websites are not standards.

“There is largely capacity problem from Government in terms of their ability, to strategy at the bottom of everything is special interest which triumphs public interests. And the Government has not been able to reverse this trend and in technology transparency is required to get the necessary work done.”

Participant 5 stated the following in response to posed question: “Of course, there will be the awareness from several federal public institutions in terms of understanding the role of digital technology in helping them doing what they do. There is always resistance in terms of introducing new measures. For instance, the IT Project Clearance, not everyone wants to get their IT projects cleared. So, they end up going to FEC and then bounced back to the Agency. They just want to go ahead and do their projects without adequate surveillance. Some of them that don’t need to go to FEC can do their projects without NITDA.”

Participant 6 stated the following in response to posed question: “When you tell MDAs to bring their project for clearance. You know how it is, one of the things that we did is that first you need to get the buy-in of the person at the highest level in the country. In 2018, we were able to get the President to make a pronouncement that every MDA in Nigeria needs to clear their project with NITDA. So, the following year in 2019, we were also able to get the President to talk about DT-TWG, the need for them to set up DT-TWG in all their MDAs.”

“One of the barriers to Digital Transformation is the Culture itself, serious culture issue. There are issues of culture and political interference, and the rest but we are still trying to move forward.”

4.4.2 Is the available digital technology infrastructure and resources sufficient for the dispersed implementation of the policy through established frameworks?

Participant 1 highlighted that there is an urgent need to create enabling environment through investment in digital technology infrastructure. Noting that the digital infrastructure development will be aided by the resolution reached with Governors to reduce right of way charges to 145 naira per linear meter. However, the below optimal level of digital literacy was also recognized as an inhibiting factor that can potentially impact the human resources required for policy implementation. The issue of insufficient capital resources was also identified as a potential hinderance to implementation of the National digital economy policy and strategy.

Participant 2 identified issues of low broadband penetration caused by poor digital infrastructure, digital trust issues and huge skill gap caused by low level of digital literacy as main concerns that can impact the viability of deployed institutional frameworks.

Participant 3 responded to posed questions as follows: “You need resources to make things work. Funds and if private companies don’t have the funds, not much can happen. Private partnership is there but resources are scarce, so it is limited in scope. There are lots of PPP in infrastructure development-MTN, GLO etc, Zinox cables are great but rural aspects don’t have the resources and capacities. We should find a more compelling way to bring in more participants what will show interest e.g., in India the leading telecoms company is raising nearly \$20b and such money can help to promote digital literacy projects.”

“If there is high level of trust, people will go for solutions that helps to fast-track their business with Government. But what is the point if you cannot fill all the process online, but you must go

in person to complete such processes. Hence trust level will be limited because there is no reason wasting that time.”

“Nigeria has internet penetration rate index, which can be compared with what’s obtainable in other African states. We must go to root causes; do we have Digital assets? It is not a measure of commitment but actualization. There is difference between commitment and actual process of executing a playbook. It has to do with budget. Most things in Nigeria if you give them resource, they are good. South Africa budget is 100billion for a lesser population compared to Nigeria with a lesser budget. You need capacity to make resources to solve problem you face. Harvard budget alone is 3 time over Nigerian Ministry of Education budget. If this the case, digital economy will be severely limited because capacity to train people will be constrained.”

“Apart from budget there is human resources. Yes, there are so many talented people in Nigeria, but productivity is a challenge. Nobody cares as there is no consequences as there is no spirit of fair play/meritocracy. Nimc is a good idea, that process must close quickly. Until you have root cause analysis to get new-borns onto the data. Hospitals don’t have the incentive to send the data for new information to be added so in a few years these new-borns will be off the radar. There must be a law mandating hospitals like in the US.”

“There is no meritocracy, political connection is more important, so the best minds are relegated. No healthy competition among the Governors to meet targets. There can be policy where over 5-10 years, if you invest in digital system, all your profits will be untaxed. That will encourage people to bring in resources into the economy. You must create incentives for other entities to come into play.”

Participant 4 highlighted that strong political will, platform infrastructure and appropriate change management model are key challenges facing the implementation of the policy through established institutional frameworks.

Participant 5 highlighted that the “Digital Skills and literacy pillar which is supposed to build capacity of Nigerians in massive skills in the way they can be able to use of digital technology and platform for their business. Now each of the agencies under Ministry of Communication has some aspect of what they are doing for capacity building in terms of enhancing literacy and skills to ensure that critical mass number of Nigerians have basic skill that they can use to benefit from the evolution of data technology. The Infrastructure Pillar has a critical role to play. Some

organizations play bigger roles than others that is why they come together to see how they can achieve the implementation of these pillars as they have been set by Ministry of Communication.”

Participant 6 highlighted that lack of adequate information technology infrastructure and insufficient human resources as the major challenge facing the established institutional frameworks.

Leadership, human capital, and funding were the core themes that emerged in response to the questions posed. All participants alluded that financial constraint is an inhibiting factor; there are issues of skill gap and insufficient human resources required; political will and commitment of leaders of public institutions are integral to empowering public institutions. Two participants highlighted that institutional culture change and digital identification are vital to driving policy implementation.

Another participant highlighted that public-private partnership is integral to providing the needed resources to enable established institutional frameworks; developing policies to encourage foreign direct investment through tax incentives. The Tables below presents the raw data of participants in terms of original transcript, exploratory comments, and emergent themes as a characteristic feature of the interpretative phenomenological analysis approach.

4.5 Summary of findings

This chapter gives a comprehensive presentation of the data collected in a participant-oriented manner as characteristic of the interpretative phenomenological analysis. The presentation is anchored on participants responses to sub-questions relating to respective research questions during the semi-structured interview conducted. The researcher presented the original transcript, exploratory comments and emergent themes as explained in Chapter 3.

CHAPTER 5. DISCUSSION OF THE FINDINGS

5.1 Introduction

This chapter is focused on discussion and interpretation of the data presented in Chapter 4 and based on the techniques and tenets of the interpretative phenomenological analysis. The discussions and interpretation are anchored by the research questions posed in Chapter 1, the frameworks, regional and national policy models, propositions, and theory illustrated in the literature review and the research methodology deployed as described in Chapter 3. The purpose of the study, the research problem, and significance thereof are the key drivers of the discussions and interpretations presented in this Chapter.

The discussion pertaining to the respective research question evolves from various super-ordinate themes developed from emergent themes identified in the data presented in Chapter 4. Below is a table showing a detailed analysis of the evolution of emergent themes from respective research questions.

Table 4.0. Analysis Output

Research Questions	Exploratory Comments	Emergent Themes	Super-ordinate themes
What are the institutional frameworks mandated to enable the Nigerian digital economy policy and strategy?	There is a governance framework in place designed to guide policy implementation across institutions nationwide.	Governance Framework	Governance Framework
	Agencies under the supervision of the ministry of communications and digital economy are the primary strategic pillars driving the National digital economy policy and strategy	Digital platform	Vision-based policy and strategy approach
	Public institutions are at varying level of digital transformation, digital maturity & readiness and commitment based on their respective mandate in the policy document.	Key metrics. Whole of government. Policy instrument.	
	Creation of digital access without availability of commensurate skill set will not guarantee success	Vision approach	

	Importance of an enabling business environment and transparency. The Presidential Enabling Business Environment Council has not been effective.	Digital maturity. Digital access	
	The need to leverage digital platforms across institution to advance the economy	Ease of doing business. Transparency	
	There is no clarity as regards implementation plan and institutional framework that explains how the strategy will be operationalised and cascaded. Key performance indicators for policy implementation are absent.	Demand driven	
	There has been no information about the kick-off of the Nigeria Presidential Council on e-governance. Insufficient cooperation, collaboration and synergy among public institutions needed to fully operationalise www.services.gov.ng. Lack of legislative backing. Private sector is integral to the achievement of an advanced digital economy. Enabling business environment.	Whole of Government. Developmental regulation. Institutional digital ecosystem. Enabling environment. Legislation	
	Private sector collaboration can catalyse the implementation of NDEPS	Pillars vs Drivers	
How are these institutional frameworks operationalised to enable the Nigerian digital economy policy and strategy?	Overview of NITDA's operations prior to the development of NDEPS	Whole of Government	Institutional Operations and Processes
	Evaluation of the capacity of respective public institution using a uniform model using questionnaires	Digital readiness	
	Implementing standard operating procedures across public institutions	Standardization	Digital Infrastructure and Access
	The National IT project clearance committee oversees all IT projects in federal public institutions	Ease of doing business. Digital infrastructure. Digital access	
	It is cumbersome to deploy the policy nationwide. The Governors forum will be used to policy adoption in states.	Creating digital ecosystems in universities. Digital literacy	Institutional Culture and Digital Ecosystem

National digital economic council serves as an accountability mechanism for policy implementation review	Innovation system. Multi-stakeholder collaboration.	
Digital Infrastructure layout is a critical factor to be considered. States are compelled to adopt the newly proposed right of way charges. Reduced/waived right of way charges by states will accelerate private sector's investment in digital infrastructure	Needs driven. Adaptation	Digital Literacy and Universal Basic Education
NGEA and NE-GIF policies are designed to help federal public institutions achieve synergy	Project champions	
Insufficient clarity regarding implementation metrics	Upskilling	
Development of state policies using three states in the pilot phase	Digital uptake	
NITDA sets the standards for deployment of IT projects across federal public institutions	Digital transformation performance assessment kit	
The DT-TWG serves as an anchor for deploying policy implementation across all federal public institutions. Phased initiation of DT-TWG in federal public institutions	Digital Infrastructure Data Security Cybersecurity	
There are 10 DT-TWG members in each federal public institution comprising of IT and businesspeople. The members of the DT-TWG serve as ambassadors championing the objectives enshrined in the National digital economy policy and strategy	Digital maturity. Digital readiness.	
The National e-government masterplan serves as a benchmark for driving states inclusion and adoption of the NDEPS. Localization of implementation framework	Digital inclusion	
The Digital transformation performance assessment toolkit assesses institutions' digital readiness and maturity in alignment with the National development agenda and NDEPS	Best fit vs best practice. Adaptation	

	Improved public-private sector collaboration is needed through the creation of Digital Economy Industry Working Group.	Digital innovation & entrepreneurship	
	Creating awareness to secure leadership commitment at public institutions. IT project clearance unit at NITDA ratifies all IT projects across all federal public institutions. Thus, serving as a compliance and benchmarking tool to support policy implementation.	Political will. Funding. Right of way waiver. Digital infrastructure. Investment	
	Non-functional federal system. There is no uniform framework for implementation across states. Dispersed implementation of projects nationwide	Strong political will. Change Management. Platform infrastructure framework. Benchmarking. Best practices	
	Creation of awareness of critical to policy implementation	Citizen centricity	
Are these institutional frameworks adequately resourced?	Resistance to change within public institutions	Leadership	Leadership
	The President empowered NITDA by issuing an order back the National IT project clearance committee and its mandate	Executive Order	
	Encouraging private sector participation in the implementation of the policy to drive foreign direct investment	Digital trust. Culture. Change management	
	Available human resources in terms of digital skills are not sufficient	Human resources. Skills gap	
	Creating citizens identification database is the base of digital transformation	Digital identification.	
	No indices to track/measure progress. Legacy curriculum is still prevalent in the educational sector	Digital disruption. Pandemic	
	Resource scarcity, inadequate political will, and leadership commitment to citizen centricity.	Public Private partnership. Funding	

5.2 Discussion pertaining to Research question 1.

5.2.1 Governance Framework

The data presented in chapter 4 shows that most of the participants understands the institutional framework in terms of governance and the top to bottom implementation approach being used to drive implementation of the National digital economy policy and strategy as opposed to having an institutional framework serving as blueprint to guide policy implementation. Below is a table showing the governance framework adopted for driving implementation of the National digital economy policy and strategy. This framework is a critical driver of the advancement of the digital economy and evolution as it is dominant in the institutional environment, with the requisite authority to determine the development of institutional digital ecosystem, institutional effectiveness, institutional policy, and regulatory framework as well as setting the foundations for foreign direct investment in the digital economy sector (Chakravorti & Chaturvedi, 2017).

Table 5.0. Governance structure for Implementation and Compliance

Governance Structure: Implementation and Compliance	
Who	Responsibility
ICT/e-Government Presidential Committee	Overall ICT/e-Government Coordinating Body
Federal Public Institutions	Government Digital Service (GDS) Providers
Directors/Heads of ICT	Translating every provision of the NGEA to the CEOs, the Management, and the entire organization. CITO's of their respective organizations; Business and IT alignment
National IT Project Clearance Committee	All IT projects adheres to all the provision of the NGEA and other IT regulatory instruments. Approving architecture exceptions and waivers. Provide recommendations for NGEA review.
NGEA/Ne-GIF Implementation Committee	Complementary structure: to promote and ensure implementation at all levels, Review of NGEA.
Digital Transformation Technical Working Group	Communicate & advise management on NGEA compliance and organization's EA implementation. Escalate challenges and compliance report.

Source: Research Participant

This approach downplays the relevance of institutions involved in the design and implementation of the policy as there is no clarity about the role and digital maturity of the institutions that are mandated to drive the implementation of the policy and strategy. Dequech (2005) posits that the prevalence of uncertainty would significantly impact expected goals and capability of people to be effectively engaged in complex circumstances. Adopting the use of institutional framework is instrumental to achieving synergy among public institutions, and it also helps to establish the implementation plan, key performance metrics as well as the monitoring plan needed to continually assess the impact of the implementation of digital economy policy and strategy (Yang, 2003).

5.2.2 Vision-based Policy and Strategy Approach

An analysis of the data presented in Chapter 4 shows that the vision-based policy approach is an emergent theme identified for all participants. Korovkin, (2019) highlighted that a vision-based policy and strategy approach does not encapsulate key ingredients in terms of context, resources and infrastructure that are critical to delivering holistic goals and objectives of such National digital economy policies and strategies. The impact of an adopted approach could be significant as seen in the case of Mauritius that utilises an outcome-based approach coupled with an enabled institutional framework for implementing its digital government strategy (Central Informatics Bureau, 2018). Chakravorti, Chaturvedi, & Troein (2017), posits that adoption of an outcome-based approach is critical to evaluating the impact of improved digital government and economy.

5.3 Discussion pertaining to Research Question 2.

5.3.1 Institutional Operations and Processes

Analysis of the data presented in Chapter 4 shows that the emergent themes of participants are aligned with institutional operations and processes. Day-to-day running of public institutions must be aligned with benchmarks set in the National digital economy policy and strategy to speed up digital uptake by public institutions. Strengthened institutional processes and frameworks leveraging on multi-stakeholder approach will catalyse operationalisation of the digital economy policy and strategy towards achieving defined outcomes (Jun & Weare, 2011).

5.3.2 Digital Infrastructure and Access

The data presented in Chapter 4 highlights emergent themes from respective participant that espouses the importance of the broadband implementation plan to building a robust digital infrastructure that would foster digital access to prevent digital divide. Public institutions are spread across regions of the country with varying levels of digital infrastructure. Digital infrastructure and access as key drivers of digital economy as they form the foundations upon which digital interactions are built to measure digital readiness (Chakravorti & Chaturvedi, 2017).

5.3.3 Digital Literacy and Universal Basic Education

The data presented in Chapter 4 shows that participants alluded to the need for upskilling, raising awareness, training, and improved level of digital literacy as critical to the propagation and implementation of the National digital policy and strategy across public institutions. This will in turn help to speed up innovation and agility needed across public institutions. Digital literacy is an important driver for adoption as it enhances the level of engagement with public institutions (Chakravorti & Chaturvedi, 2017). Access to universal basic education for all citizens was raised by Participant 3 as fundamental to creating a citizen centric policy that empowers engagement among public institutions, businesses, and the citizens.

5.3.4 Institutional Culture and Digital Ecosystem

The data presented in Chapter 4 shows that participants perceived institutional culture evident in bureaucratic public institutions as a major barrier to advancing digital uptake across public institutions. Adoption of the whole of government approach nationwide is critical to a functional and holistic digital ecosystem needed for achieving a competitive digital economy (United Nations, 2012).

5.4 Discussion pertaining to Research Question 3.

5.4.1 Leadership

The data presented in Chapter 4 shows that participants regarded leadership commitment as being integral to measuring the level of investment and quantity of resources deployed to institutional framework mandated to enable digital economy policy and strategy in Nigeria. Strong leadership support exemplified in terms of granting autonomy to institutions are

mandated to implement digital government transformation policy and strategy, supporting institutional change management initiatives, and creation of new institutional structures (United Nations, 2020).

5.5 Conclusion

This chapter engaged with the super-ordinate themes relating to respective research question based on the data presented in Chapter 4. It gives an overview of the discussions pertaining to research questions relation to the literature review, frameworks and theory that helps understanding the purpose of the study, and the research problem. It links the discussion to digital transformation frameworks and the theoretical framework highlighted in Chapter 2.

CHAPTER 6. CONCLUSIONS & RECOMMENDATIONS

6.1 Introduction

This chapter addresses the core objective of the study which is to investigate the viability of the deployed institutional framework that is mandated to enable the implementation of the National digital economy policy and strategy in Nigeria. It draws conclusions and recommendations based on the data collected from the institutions championing and driving implementation of Nigeria's digital economic policy and strategy alongside key stakeholders within the nation's digital ecosystem. This study was conducted to address issues relating to the clarity of roles, efficacy and the current state of the institutions mandated to enable the implementation of the National digital economic policy and strategy in Nigeria. The research questions are used as anchors to draw respective conclusions and recommendations in alignment with respective propositions, purpose of the study, the research problem and significance thereof.

6.2 Conclusions regarding research question 1

The implementation of the National digital economy policy and strategy is primarily driven by federal public institutions under the supervision of the Federal Ministry of Communication and Digital economy, other federal public institutions, private sector, states, media houses and some professional bodies as documented in the policy and strategy document in alignment with the governance structure for implementation and compliance shown in Table 6, serving as roadmap guiding established institutional frameworks. Even though the roles of the identified institutional framework in the National digital economy policy and strategy document are not clearly articulated, it does not include the private sector which was perceived by research participants as an important catalyst needed to boost the momentum of the advancement of the digital economy sector in alignment with the implementation of the National digital economy policy and strategy.

The National digital economy policy and strategy adopts a top to bottom implementation approach without a clear key performance indicator in its blueprint illustrating how the achievement goals and objectives of the policy will be measured and cascade across all public institutions nationwide. The vision-based strategy approach adopted does not take into consideration nuances and constraints regarding resources, infrastructure and environmental factors that form the core of the critical success factors required for ensuring the success of the strategy. This supports the proposition that institutional frameworks are key enablers of the National digital economy policy

and strategy. As the contribution to the nation's digital economy to the overall economy has significantly increased since the commencement of the implementation of the National digital economy policy and strategy.

6.3 Conclusions regarding research question 2

Operationalisation of institutional frameworks have been hampered by inhibited institutional frameworks that were supposed to drive the National digital economy policy and strategy. This has also been further impacted by the low level of digital maturity in most public institutions, an insufficient level of synergy among public institutions hampering the whole-of-government approach required and the top to bottom implementation approach utilised. The broadband implementation plan has achieved some success owing to the adoption of reduced right of way charges in some states coupled with public-private sector partnership employed in deploying that implementation of the plan. This has accelerated the spread of digital infrastructure and considerably improved digital access critical to advancing digital readiness of public institutions across the country.

The prevalence of bureaucracy in public institutions coupled with a legacy of institutional culture, a low level of available information and awareness as regards policy implementation has impacted digital uptake public institution. This has also hindered the adoption of a whole of government approach that is critical to operationalising the policy. Lack of key performance indicators to track progress made as regards upskilling in public institutions increases ambiguity of the expected outcome and objectives of the policy.

Although, there has been challenges as regards operationalising the policy, the proposition that operationalisation of appropriate institutional framework enables the Nigerian digital economy policy and strategy is supported considering the progress made so far with the deployment of the Digital Transformation Technical Working Group (DT-TWG) across all federal public institutions in accordance with the governance structure for implementation and compliance. However, the established institutional frameworks are at different levels of empowerment, digital readiness, and maturity with an insufficient level of synergy needed for optimum operationalisation of appropriate institutional frameworks to enable the Nigerian digital economy and strategy in Nigeria.

6.4 Conclusions regarding research question 3

Leadership is the most critical element integral to the success of any digital transformation policy, strategy, and initiative. Hence, deployment of resources, establishment of institutional frameworks, driving institutional culture change, institutional empowerment and investment in projects aligned with the advancement of the digital economy are all functions that could be attributed to leadership support and commitment. Although, there is some level of leadership commitment in terms of perceived intent and appointment of supervisory agency saddled with the primary responsibility of driving the implementation of the policy in alignment with global standard for driving the advancement of digital economy. More needs to be done in terms of facilitating adoption of policy by states and devolution of adequate resources and autonomy to institutions mandated to implement the National digital economy policy and strategy in Nigeria.

This supports the proposition that sufficiently resourced institutional frameworks are imperative for the enablement of digital economy policy and strategy in Nigeria, as evident in the deployment of resources and inclusion of more federal public institutions as needed to collaborate with the primary drivers responsible for the implementation of the policy at the request of the leadership of the Ministry of Communication and digital economy. An example is the recent inclusion of the National Identity Management Commission (NIMC), the agency responsible for managing National identity database in Nigeria.

6.5 Recommendations

Based on the data collected and presented, data analysis and discussions engaged upon leading to the conclusion of this study, this list of recommendations that may help to improve the institutional digital ecosystem critical to the advancement of any nation's digital economy as highlighted in the literature review chapter of this report.

- 1) Review of the National digital economic policy and strategy with the participation of key stakeholders and representatives from the private sector, academia, Non-profit organizations, legislature, judiciary, states, and local government areas across the federation to develop a holistic and citizen centric policy that resonates with the needs of the nation.

- 2) Adoption of an outcome-based approach to strategy implementation, setting key performance indicators, metrics and designing a monitoring and evaluation framework to track progress made in relation to set objectives and goals.
- 3) Seeking executive and legislative support for the formulation of appropriate act or legislation to drive adoption of digital across public institutions and devolve adequate resources to established institutional frameworks mandated to enable the implementation of the National digital economy policy and strategy.
- 4) Designing all-inclusive public transformation models to encourage increased institutional engagement and synergy among public institutions and the adoption of agile government models to streamline an institutional digital ecosystem.
- 5) Aligning institutional operations and processes with global best practices as a benchmark to ease access to grants and encourage foreign direct investment in the digital ecosystem.
- 6) Adoptions of the appropriate change management model to address issues of institutional culture change and resistance to alleviate digital trust issues.
- 7) Leveraging public-private partnerships and tax-incentive offers to address issues of funding, digital infrastructure, universal basic education and propagate digital literacy on a nationwide scale.

6.6 Suggestions for further research

This research has provided deep insights about the implementation of National digital economy policy and strategy in its early phase of implementation. Changes are expected as the implementation of the National digital economy policy and strategy continues to evolve in alignment with the implementation and compliance plan as shown in its governance structure. The present realities of digital disruption necessitated by the pandemic, and the timing of conducted research in the early phase of its implementation should be considered a contributing factor to the research outcome. Additional research in the future at a more advanced stage of implementation will further investigate the viability of an institutional framework that will be mandated to enable the Nigerian digital economy policy and strategy. Moreover, a qualitative research approach was adopted for this study to focus solely on the primary key stakeholders from public institutions championing the implementation of the policy, experts from academia and the private sector with requisite knowledge about the policy under study. A mixed approach might be explored to analyse the varying impact of highlighted emergent themes and super-

ordinate themes on the institutional frameworks enabling the Nigerian digital economy policy and strategy.

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APPENDIX A Participant Information Sheet

Dear Participant,

My name is Olabode Olanusi, and I am a master's student in Digital Business at the University of the Witwatersrand, Johannesburg. As part of my studies, I must undertake a research project, and I am investigating institutional factors that enable the Nigerian digital economy policy and strategy under the supervision of Dr. Kiru Pillay. The aim of this research project is to assess the viability of the deployed institutional factors that are mandated to enable the implementation of the digital economy policy and strategy in Nigeria.

As part of this project, I would like to invite you to take part in an interview. This activity will involve a one-off interview session and will last around 60 minutes. With your permission, I would also like to record the interview using a digital device.

There will be no personal costs to you if you participate in this project, you will not receive any direct benefits from participation, and there are no disadvantages or penalties if you do not choose to participate or if you withdraw from the study. You may withdraw at any time or not answer any question if you do not wish to do so. The interview session will be completely confidential and anonymous as I will not be asking for your name or any identifying information, and the information you give to me will be held securely and not disclosed to anyone else. I will be using a pseudonym (false name) to represent your participation in my final research report. If you experience any distress or discomfort at any point in this process, we will stop the interview or resume another time.

If you have any questions during or afterwards about this research, feel free to contact me on the details listed below. This study will be written up as a consultancy project which will be available online through the university library website. If you wish to receive a summary of this report, I will be happy to send it to you. The data collected from this research project will be stored in a hard drive on a password protected computer and will be kept for future analysis if you consent, otherwise it will be deleted after five (5) years. With your permission the data collected from this research project may be used by other researchers (optional). If you have any concerns or complaints regarding the ethical procedures of this study, you are welcome to contact the University Human Research Ethics Committee (Non-Medical), telephone +27(0) 11 717 1408, email hrec-medical.researchoffice@wits.ac.za

Yours sincerely,

Researcher:

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Email: olabode.olanusi1@students.wits.ac.za,

Mobile: +2348054582781, +22961194641

Supervisor:

Dr. Kiru Pillay

Email: kiru2010@gmail.com

Mobile: +27826027261

APPENDIX B Consent Form

Title of project: Exploring institutional factors enabling the Nigerian digital economy policy and strategy.

Name of researcher: Olabode Samuel Olanusi

I,, agree to participate in this research project. The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous.	YES	NO
--	-----	----

I agree that the researcher may use anonymous quotes in his / her research report.	YES	NO
--	-----	----

I agree that the interview may be audio recorded.	YES	NO
---	-----	----

I agree that the information I provide may be used anonymously after this project has ended, for academic purposes by other researchers, subject to their own ethics clearance being obtained.	YES	NO
--	-----	----

..... (signature)
 (name of participant)
 (date)

..... (signature)
 (name of person seeking consent)
 (date)

APPENDIX C Interview Guide

Interview questions

Research Question 1: What are the institutional frameworks mandated to enable the Nigerian digital economy policy and strategy?

What is the overview of the current institutional framework aiding the deployment and propagation of the national digital economy policy and strategy across institutions?

Are deployments within institutions prioritized in terms of their mandate based on digital maturity? What are the metrics used for this?

Is there an assessment done to determine digital maturity of institutions with regards to implementation of NDEPS?

Research Question 2: How are these institutional frameworks operationalised to enable the Nigerian digital economy policy and strategy?

What is the mode of deployment and operations?

Is there an assessment framework/model in place to evaluate progress made in implementing NDEPS?

Research Question 3: Are these institutional frameworks adequately resourced?

What are the challenges faced by the established institutional frameworks?

Is the available technology infrastructure and resources sufficient for the dispersed implementation of the policy through established frameworks?

APPENDIX D Ethics Approval Notification



**SCHOOL OF GRADUATE SCHOOL OF BUSINESS ADMINISTRATION ETHICS COMMITTEE
CONSTITUTED UNDER THE UNIVERSITY HUMAN RESEARCH ETHICS COMMITTEE (NON-MEDICAL)**

CLEARANCE CERTIFICATE

PROTOCOL NUMBER: WBS/BA2289700/243

PROJECT TITLE

Exploring institutional factors enabling the Nigerian digital economy policy and strategy

INVESTIGATOR

Mr Olabode Olanusi

SCHOOL/DEPARTMENT OF INVESTIGATOR

MM (Digital Business)

DATE CONSIDERED

16 November 2020

DECISION OF THE COMMITTEE

Approved unconditionally

RISK LEVEL

MINIMAL RISK

EXPIRY DATE

30 JUNE 2021

ISSUE DATE OF CERTIFICATE 25 November 2020

CHAIRPERSON

(Dr MDJ Matshabaphala)

Matshabaphala

cc: Supervisor: Dr Pillay

DECLARATION OF INVESTIGATOR

To be completed in duplicate and ONE COPY returned to the Chairperson of the School/Department ethics committee.

I fully understand the conditions under which I am authorized to carry out the abovementioned research and I guarantee to ensure compliance with these conditions. Should any departure to be contemplated from the research procedure as approved I/we undertake to resubmit the protocol to the Committee.

[Signature]
Signature

Date

26/11/2020