

**E-Identity And Security: A Study Of The Role Of Identity Management
In Sustainable Development In Nigeria (2007 – 2021)**

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Relations, Faculty Of Management And Social Sciences, Lead City University, Ibadan, Oyo
State, Nigeria**

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(M.Sc) In Public Administration**

2022

Certification

This is to certify that Titilola Tomilola Ejiofor, LCU/PG/001993 carried out this research work titled; E-Identity and Security: A Study of the Role of Identity Management in Sustainable Development in Nigeria, in the Department of Politics and International Relations, Faculty of Management and Social Sciences, Lead City University, Ibadan, Oyo State, for the award of Master of Science Degree in Public Administration and that this has not been previously submitted.

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Date

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Date

Dedication

This research work is dedicated to the glory of God

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Acknowledgement

I wish to appreciate Lead City University and the Postgraduate College for providing me with the opportunity to carry out my postgraduate studies, which climaxed in this research work. Special thanks to my supervisor Prof. Akeem Amodu for his guidance and prompt response whilst I was carrying out the research. I appreciate the invaluable assistance of Prof. Femi Badru, Dr. Modupe Albert, Dr. Bunmi Akande, and other Departmental and Faculty members, including the External Examiners, who through their lectures, tutorials and reviews improved this research.

To my colleagues in Oyo, Ogun, Ondo, Lagos and Rivers States including the Federal Capital Territory, who assisted me with administering and collecting the research questionnaires from respondents, I say thank you. I acknowledge also my superiors in Abuja, colleagues at the regional levels and subordinates at the state level, who filled the research questions and expressed their opinions on the opened-ended questions, providing additional details. Special thanks to members of the functional agencies and the public who freely participated in filling the questionnaire and expressed their views and recommendations on salient issues. Not to forget Mrs. Augusta Diala, who persuaded me to join the academic session upon my late registration. To my dear husband, children, mother and siblings, who encouraged me throughout this arduous but life fulfilling academic journey. Thank you very much for your love.

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

Abstract

This research work explored the challenges, prospects and recommendations for advancing and achieving the broad-based United Nations Sustainable Development Goals (SDGs) to Nigerians and legal residents, using the e-identification management platform. The research also examined the linkages between security and e-identification to cushion the challenges of insecurity, corruption and financial impropriety in managing the affairs of the Nigerian State. It identified gaps on the part of the Federal Government of Nigeria in prioritizing and managing e-identification and security programs in the country, which is very fundamental in advancing the United Nations Sustainable Development Goals (SDGs) 2030, Target 16.9 “provide legal identity for all including free birth registration”. The research adopted a descriptive qualitative and quantitative research method based on structured questionnaires / interviews and random sampling of respondents in six states of the federation including the Federal Capital Territory, Abuja. The analysis of the questionnaire was supported by secondary sources of information inputted into the structured questions to act as guide to validate the hypothesis proffered in the research work. The research findings clearly indicated the existing gaps in the relationships between identity management and sustainable development programs in Nigeria, supporting the premise that poorly conceived and ill-managed e-identity management and security architecture directly or indirectly impacts the planning, organizing, leading and controlling the management processes for citizens gaining access to state resources and advancing the United Nations Sustainable Development Goals. The research recommends that the Federal Government of Nigeria prioritizes e-identification programs, summon the political will to implement and enforce the legislations on identification and security as well as adopt wholeheartedly the implementation of the recommendations and suggestions proffered in this research.

Key Words: e-identification, security, sustainable development, prioritization, political will

Word Count: 282

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List of Acronyms

Abbreviation	Meaning
AFIS	Automated Fingerprint Identification
AML	Anti-Money Laundering Regulations
AU	African Union
BSCR	Biometric Standards Compliance Register
CAP	Card Authentication Portal
CBN	Central Bank of Nigeria
CDD	Customer Due Diligence
Covid-19	Coronavirus Disease 2019
DNCR	Department of Civic Registration
ECOWAS	Economic Organization of West African States
e-ID	Electronic Identification
ePKI	Electronic Public Key Infrastructure
ERGP	Economic Recovery Growth Plan
FAO	Food and Agricultural Organization of the United Nations
FATF	Financial Action Task Force
FCT	Federal Capital Territory
Fintech	Financial Technology
FIRS	Federal Inland Revenue Service
FMARD	Federal Ministry of Agriculture and Rural Development
FRSC	Federal Road Safety Corps
GDP	Gross Domestic Product

GIFMIS	Government Integrated Financial Management Information System
GMPC	General Multipurpose Card
GSM	Global System for Mobile Communication
GSMA	GMS Association, or Global System for Mobile Communications or Groupe Special Mobile
ICA	Cooperative Identity, Values and Principles
ICAO	International Civil Aviation Organization
ICT	Information Communications Technology
Id	Identification or Identity
ID4Africa	Identification for Africa
ID4D	Identification for Development
INEC	Independent National Electoral Commission
IPPIS	Integrated Payroll and Personnel Information System
KYC	Know Your Customer
LCU	Lead City University
LGA	Local Government Area
LOA	Levels of Assurance
M.Sc.	Master of Science
MDGs	Millennium Development Goals
MNOS	Mobile Network Operating Systems
MoD	Ministry of Defense
MRWs	Mobile Registration Workstations
NASSP	National Social Safety Net Project

NCC	Nigerian Communications Commission
NCS	Nigeria Customs Service
NGO	Non-Governmental Organization
NHIS	National Health Insurance Scheme
NIBSS	Nigeria Inter-Bank Settlement System
NIDB	National Identity Database
NIMC	National Identity Management Commission
NIMS	National Identification Management System
NIN	National Identification Number
NIS	Nigeria Immigration Service
NPF	Nigeria Police Force
NPopC	National Population Commission
NSCDC	Nigeria Security and Civil Defense Corps
OECD	The Organization for Economic Cooperation and Development
OPT	Point of Transaction
PENCOM	National Pensions Commission
PG	Postgraduate
PIN	Personal Identification Number
QR Code	Quick Response Code
SDGs	Sustainable Development Goals
SIM	Subscribers Identity Module
TIN	Tax Identification Number
UN	United Nations

UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
UNESCO	United Nations Educational Scientific and Cultural Organization
UNICEF	United Nations International Children's Emergency Fund
VIN	Voter Identification Number
WAN	Wide Area Networks

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Chapter One

Introduction

1.1 Background of the Study

E-identity and security management is at the heart of achieving Sustainable Development by virtue of United Nations Sustainable Development Goals (SDGs) 2030, Target 16.9 by 2030 – “provide legal Identity for all including free birth registration”¹. According to the World Bank Group’s 2018 Identification for Development (ID4D) Global Dataset, an estimated one billion people around the globe face challenges in proving who they are. They struggle to access basic services including access to finance and even mobile phone and may miss out on important economic opportunities such as employment and owning a registered business. However, the implication of providing legal identity for all, including birth registration goes beyond individual rights and opportunities. Being able to reliably verify the identities of people is critical for countries to deliver services efficiently, provide security, plan, strengthen their capability to raise revenues and foster growth in the private sector².

In September 2018, about 1600 delegates comprising of government officials from 47 African countries, development partners and the private sector gathered in Abuja, Nigeria for ID4Africa to brainstorm and accelerate progress towards closing the identification gaps in the continent where over half of the 1 billion unidentified global persons reside³.

ID4Africa was founded in 2014 as an NGO to propel the advancement of identification for all Africans in order to bridge the socio-economic gaps created by the lack of identity for a huge number of Africans especially the vulnerable poor, women, children and the less privileged. It is important to note that accurate data of who these undocumented people are, is vital for public policy planners and other stakeholders to close the gap in providing socio-economic services so that no one is left behind. It is equally relevant to note that available records from the 2018 ID4D Global Dataset, suggests that of the 1 billion undocumented people around the globe, 81% live in Sub-Saharan Africa and South Asia of which 47% are below the national ID age of their various countries⁴. Early findings of Identification for Development (ID4D) partnership with Global Findex, in 2017 suggests that residents of low income countries particularly women and the poorest 40% are the most affected by the lack of Identity (ID). The Identification for Development (ID4D) Global Dataset also indicates the following statistics for Nigeria as at 2018. These statistics indicate unregistered Nigerian population at 140,465,270, which is huge considering the consequences on planning, implementation and evaluation of developmental programs and the advancement of Sustainable Development Goals (SDGs). There is a huge number of undocumented people in Nigeria. This may have implications on the economic growth, in terms of calculating the country's GDP, drive for revenue collection, crime monitoring and ensuring the delivery of good governance⁵. These very important milestones are necessary to quickly meet up with the statistical data required for engendering a comprehensive solution to advance sustainable development in Nigeria. To catch up with Nigeria's desire to providing legal identification for all, the National Identity Management Commission (NIMC), which is the legal entity charged with the developing and managing the Foundational Identification System, must

adopt new tactics to ensure the capturing and enrolling of more Nigerians and legal residents into the National Identity Database (NIDB)⁶.

Government therefore needs to integrate the existing databases of all financial and social service providers into the National Identity Database for citizens to get a feel of the services provided by government agencies at the federal and state government levels⁷. Government exists to serve the needs of the public, and good governance exists to ensure that those needs are served efficiently, effectively, and fairly⁸. This means that governance has a lot to do with how authority is exercised in institutions and the traditions of government, which includes the process of bringing government into being and holding it accountable must be enforced. The United Nations defines governance as the way society sets and manages the rules that guide policymaking and policy implementation⁹. Toikka stated that public governance is concerned with the conduct of governments at all levels to bring about the best possible benefits to their citizens¹⁰. A good and effective public governance system helps to strengthen democracy, promote economic prosperity and social cohesion, and reduce poverty. Identity Management has been at the heart of the struggle for effective planning and implementation of government programs in Nigeria, the lack of which has continuously undermined the advancement of developmental programs. Nigeria has been struggling to establish a robust Identity Management system since the era of the Military in 1978 to the dawn of the Fourth Republic, which commenced on May 29, 1999.

This research attempts to carry out a comprehensive study of the role of Identity Management for Sustainable Development in Nigeria, using e-identity and security as pivotal tools to facilitating individual access to social safety nets and services provided by public institutions for the advancement of Sustainable Development Target 16.9 by 2030 “provide legal Identity for all including free birth registration”. The research will examine the history and challenges of

building a robust Identity Management System in Nigeria, which must comply with the standards of identification for Sustainable Development hinged on the 10 principles espoused in the 3 pillars: inclusion, design and governance. This simply means that the building of a robust, secure and safe Identity Management System in Nigeria will be examined through the lens of these 10 principles and 3 pillars for the advancement of Sustainable Development Goals (SDGs). Thus, the research would be examining how the Identity Management Systems in Nigeria has complied largely to fulfilling the United Nations Sustainable Development Goal 16: “provide peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels”.

The study will also explore how the SIM linkage with the National Identification Number (NIN), by Mobile telephone operators of their subscribers provided a rare opportunity for the National Identity Management Commission (NIMC) to tweak the enrollment process and capture more Nigerians into the National Identity Database (NIDB).

1.2 Statement of the Problem

The title of this project implies that the following four fundamentals statements are true in achieving sustainable development or otherwise in a nation: e-identity management and security are key elements for sustainable development, without which, sustainable development is impaired. The level of e-identity management infrastructure and security available in a given society determines the degree of success or failure of accomplishing sustainable development goals (SDGs) as set out by the United Nations. Poorly conceived and ill-managed e-identity management and security architecture may exclude a huge number of citizens from benefiting from government administered social security safety nets. Conversely, a richly conceived and well-managed e-identity management and security architecture could result in a higher number

of citizens being captured into the National Database and enabling access to state resources and the advancement of Sustainable Development. Finally, that poorly conceived and ill-managed e-identity management and security architecture frameworks could lead directly or indirectly to ineffective and inefficient planning, organizing, leading and controlling of the processes of citizens gaining access to state resources and advancing Sustainable Development Goals (SDGs) in a given nation. Therefore, it is assumed that a well-managed and richly-conceived e-identity management and security architecture frameworks could lead directly or indirectly to effective and efficient planning, organizing, leading and controlling of the processes of the citizens gaining access to state resources and advancing Sustainable Development Goals (SDGs) in a nation.

Based on the implementation framework parameters of inclusion, design and governance principles and the vast resources generated from the literature review and structured interview, the study will examine if the lack of political will by the federal government to enforce the governance principles enacted to foster identity enrollment and use in the provision of various government goods and services, constitutes a lacuna in accomplishing the United Nations Sustainable Development Goals (SDGs) of providing legal Identity for all by 2030.

1.3 Aim and Objectives of the Study

The study seeks to examine the role of e-identity and security management in Nigeria for the purpose of attaining the UN Sustainable Development Goals. The objectives are as follows:

- i. to investigate the reasons for the lack of political will to enforce legislations for e-identity management in Nigeria.
- ii. investigate the challenges and achievements of the National Identity Management Commission in the management of e-identity in Nigeria.

- iii. examine plausible approaches and recommendations for the management of e-identity for Sustainable Development in Nigeria.

1.4 Research Questions

1. What are the reasons for the lack of political will to enforce legislations for e-identity management in Nigeria?
2. What are the challenges and achievements of the National Identity Management Commission in the management of e-identity in Nigeria?
3. What are the plausible approaches and recommendations for the management of e-identity for Sustainable Development in Nigeria?

1.5 Scope of the Study

As a qualitative case study, the objective is to collect data from a wide range of sources from 2007 to 2021 and analyze these data using an empirical approach. This study is exploratory in nature, and will rely on a vast amount of information gathering procedures, such as structured interview, secondary data, documentary information, government gazettes and archival records, and other relevant data that will be analyzed to find answers to the research questions. In Chapter 3, further justification of the selection of the qualitative case study method for this study will be presented.

1.6 Significance of the Study

In an attempt to investigate how to improve Identity Management governance principles and enforcement to advance sustainable development in Nigeria, the challenges and achievements of the National Identity Management systems in Nigeria will be examined to proffer solutions and best practices where necessary. This also means that Governance Principles for sustainable development towards e-Identity as espoused by the United Nations will be comprehensively

explored to determine exactly why the enforcement of legislations are lagging in Nigeria. In examining these factors, solutions proffered would be brought forward to assist government to explore the strategies to review to engender the accomplishment of Sustainable Development Target 16.9 2030 and United Nations Sustainable Development Goal 16 as already identified.

1.7 Limitation to the Study

By choice, this study will be narrowed down to the period between 2007 and 2021 during which the government had become fully conscious of utilizing data for national planning and economic development purposes.

1.8 Operational Definition of Key Terms

Authentication: The process of proving that a person is who he or she claims to be. Digital authentication generally involves a person electronically presenting one or more “factors” or “authenticators” to “assert” his or her identity, that is, to prove that he or she is the same person to whom the identity or credential was originally issued. These factors can include something a person is (their fingerprints), knows (a password or PIN), has (an ID card, token, or mobile SIM card), or does (their handwriting, keystrokes, or gestures).

Development is the wellbeing that transcends past and present wellness or pleasure to include future pleasure, joy or satisfaction.

Digital identity: A set of electronically captured and stored attributes and/or credentials that uniquely identify a person.

Digital identification (ID) system is an identification system that uses digital technology throughout the identity lifecycle, including for data capture, validation, storage, and transfer; credential management; and identity verification and authentication.

Identifier refers to unique data used to represent a person's identity and associated attributes. A name or a card number are examples of identifiers.

Security: In this study, security is defined in two ways. The first being the capability of the identification platform through authentication and verification processes to deter against hackers and unauthorized users' access into the national database. Secondly, security was also defined as a social contract between the state and the people, in which the state is expected to protect, defend and provide for the people in the public sphere of life. This is called national security. National security therefore, connotes the lack of threat to life, prosperity and socio-economic well-being of the people within the territorial integrity of the nation. National security is also taken to mean the totality of measures instituted by government to protect the territorial integrity and the cherished values, and interest of the people as well as the guarantee of the freedom of the citizenry from anxiety, threats to life and property and their safety from natural or manmade disasters.

Sustainability is meeting our own needs without compromising the ability of future generations to meet their own needs. It has four pillars: human, social, economic and environment across key five drivers; social impact, focused business strategy, economic viability, adaptability and capacity to deliver.

Endnotes

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Chapter Two

Literature Review

2.1 Conceptual Review

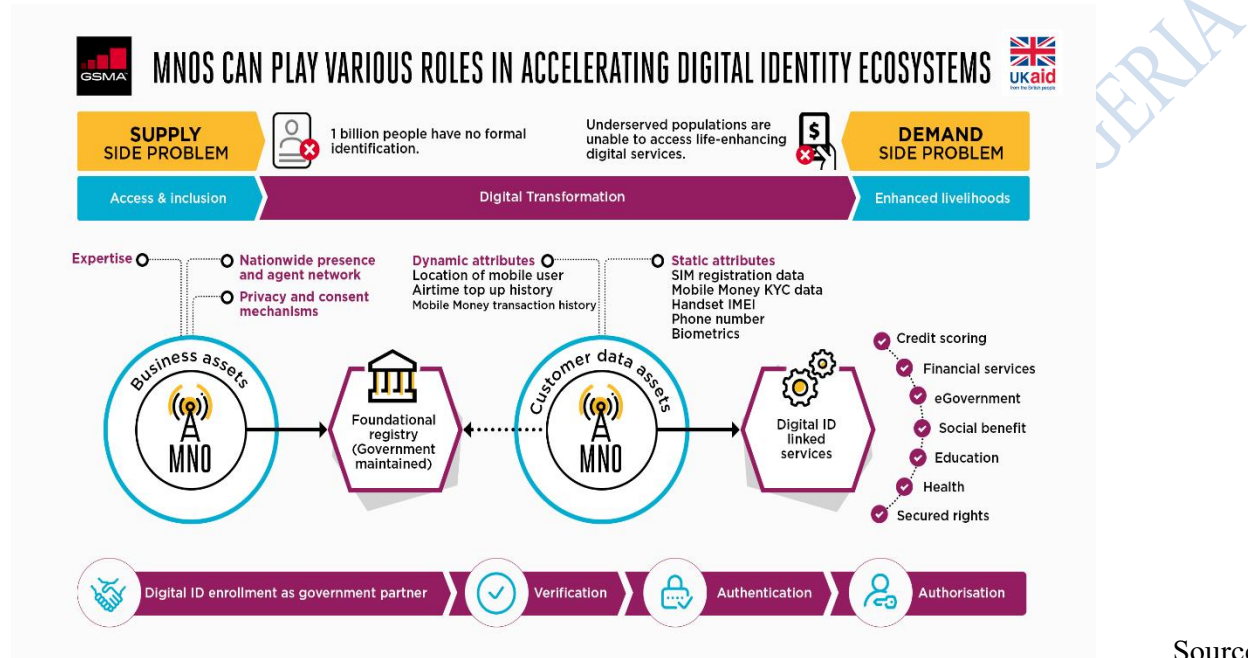
2.1.1 The Concept of Identification

Identity can be described as the state of having unique identifying characteristics by no other than one person or thing. The unique identifier is characteristically individualistic and by which a person or thing is recognized. It is what it means to be who one is and often associated with social labels or roles¹. Identity is inherent in all levels of human organizations, namely personal, family, community, ethnic group, the local government, the state and the entire country as a whole. Within the confines of a nation's identity, everybody sees one another as brothers and sisters and therefore does almost everything in the common interest of that entity called a nation.

National identity emphasizes the membership of a nation. People no longer look at themselves as belonging to a component unit within a country but belonging to the country. Thus, the concept of national identity evolved to provide valid citizens and residents within a geographical location or territory described as a nation with access to state resources and entitlements to other social security safety nets and economic benefits, which leads to achieving the sustainable development goals. The holding warehouse for a nation's Database is described as the Foundational Database, while the database of different organizations within the country is described as the Functional Database. The introduction of a unique identifier for people living within a geographical territory known generally as a nation helps to forge a sense of belonging or a means of identifying such people and legal residents with the opportunity of an assured identity to gain access to economic

resources dispensed by public institutions as social safety-nets and advancement of sustainable development².

Table 2.1 MNOS Can Play Various Roles in Accelerating Digital Identity Ecosystems



Source:

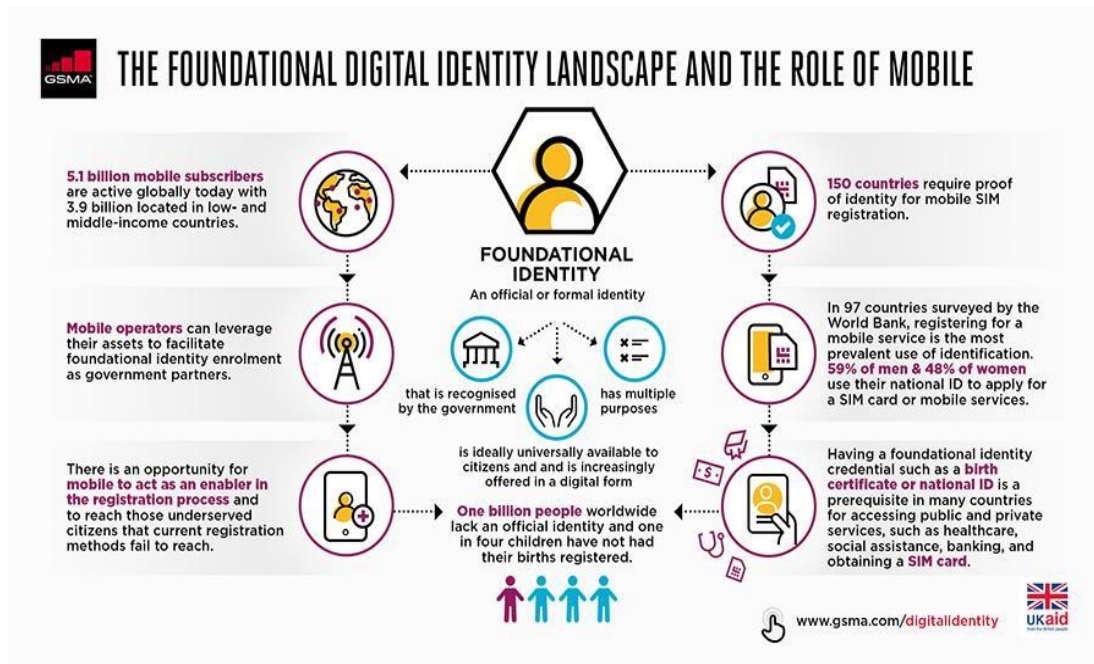
GSMA Mobile for Development – Digital Identity. Available online www.gsma.com/digitalidentity

A digital identity is a collection of electronically captured and stored identity attributes that uniquely describe a person within a given context and are used for electronic transactions. A digital identity system refers to the systems and processes that manage the lifecycle of individual digital identities. A person’s digital identity may be composed of a variety of attributes, including biographic data (for example, name, age, gender, address) and biometric data (fingerprints, iris scans, hand prints) as well as other attributes that are more broadly related to what the person does or something someone else knows about the individual. When these data are collected and verified, they can be used to identify a person by answering the question “who are you?”. These attributes, along with credentials issued by the service provider (unique ID number, eDocument, eID, mobile ID) can then also be used as authentication factors to answer

the question “are you who you claim to be?”. The attributes and authentication factors used in a digital identity may vary from one context or country to the next depending on the type of identity system³.

Digital Identity plays a crucial role in the public and private organizations as it becomes the new means of effectively and efficiently serving the people especially the poorest and most disadvantaged. Specifically, evidence suggests that well implemented digital identification systems can have a significant positive impact on financial inclusion, gender equality, access to health services and social safety nets, and governance⁴. Fewer than half of all adults in the poorest 40 percent of households have a bank account. Approximately 375 million unbanked adults in developing countries (18 percent) are prevented from obtaining one because they lack the necessary ID documentation. In addition, many countries now require that pre-paid SIM cards only be activated when registered with a proof of identity; those who lack this ID could be denied access to mobile communication, further exacerbating digital, social and financial exclusion. Accessible, robust, and verifiable ID systems can facilitate the Know Your Customer (KYC) requirements of providers and expand the use of financial services. Digital Identity has helped to improve gender equality. Women are less likely to have access to personal identification than men due to economic and social barriers. As a result, they are less likely to be able to assert their rights over assets (property, finance) and access public and private benefits and services including welfare payments, healthcare, and financial services (without ID to open a bank account, cash transfers targeted to women may be deposited in a household account and thus more likely to be coopted or misused). Therefore, there is every likelihood that increasing the identification of women can improve their inclusion and autonomy.

Table 2.2 The Foundational Digital Identity Landscape and the Role of Mobile



Source: GSMA Mobile for Development – Digital Identity. Available online www.gsma.com/digitalidentity

Digital Identity has also helped to increase access to healthcare services and the provision of social safety nets to the less privileged and vulnerable. From the progressive development of Digital Identity, it becomes clear that achieving the UN Sustainable Development Goal of ‘a world with zero hunger by 2030 will require more productive, efficient, sustainable inclusive, transparent and resilient food availability⁵. Digital innovation and technologies can foster growth and enhance the so-called Fourth Industrial Revolution. In the Agriculture and Food Sector, there is an indication that the spread of mobile technologies remote-sensing services and distributed computing can improve small holders’ access to information, inputs, market finance

and training. Digital technologies are creating new opportunities to integrate smallholders in a digital driven Agri-food System⁶.

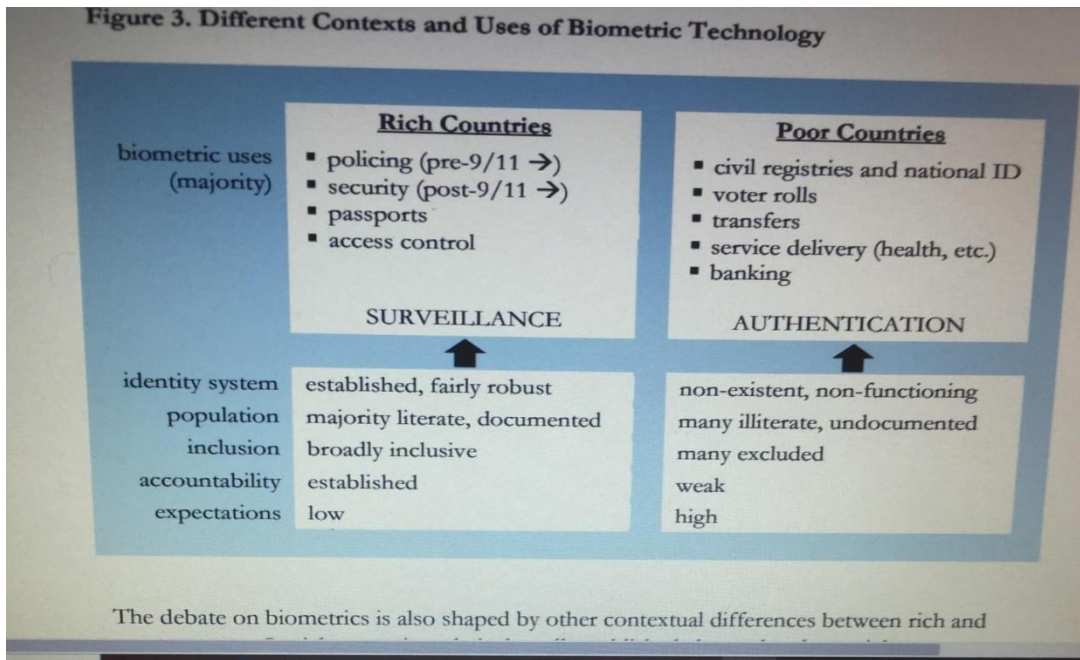
Digital financial services have expanded opportunities for millions of women across the globe. More than 240 million more women now have an account with a financial institution or mobile money service, compared to the situation 2014. Through increased engagement in the formal economy, results indicate that women's resilience to financial, economic and health shocks is improving. However, there remains much work to do to achieve gender equality in financial services. Approximately one billion women do not have formal financial services, due to persistent barriers in access to identification documents, mobile phones, digital skills, financial capability, as well as inappropriate products and more⁷. These challenges are compounded by laws and norms that undermine a woman's right to participate in the labor force, control assets, establish and access funding to grow formal businesses and, ultimately, make her take own economic decisions. Compared to men, women are more likely to be poor, less likely to have a job and more likely to work in the informal economy. Women's economic participation is still unequal in both advanced and emerging economies and they are found to be disproportionately affected by the COVID-19 crisis. Thus, prioritization for women should be reflected in policy and programmatic responses, including efforts to support women's financial resilience as they are more likely to be impacted by and recover from COVID-19 and the associated economic challenges. Depending on the country's context, cultural environment, available infrastructure and resources, a range of solutions may be considered to remove barriers to digital financial inclusion of women⁸.

Digitalization can change every part of the agri-food chain. Management of resources throughout the system can become highly optimized, individualized, intelligent and anticipatory, as it will function in real time in a hyper-connected way, driven by data. Value chains will become traceable and coordinated at the most detailed level whilst different fields, crops and animals can be accurately managed to their own optimal prescriptions. In Nigeria loans are provided to farmers and fertilizers distributed to those who have been identified through their mobile phone linked with the NIN. In governance, digital identity systems have improved government efficiency, accountability and transparency and through online transactions and other e-services. Digital ID system has reduced operational costs and the corruption and theft occurring in paper-based systems, where entitlement payments are siphoned off from their intended recipients. Authentication protocols based on national identity registers has contributed to making government institutions more efficient, accountable, and transparent. For example, in the Civil Service, biometrically enrolling civil servants through the Integrated Personnel and Payroll Information System (IPPIS) saved approximately US\$74 million in the first phase and eliminated 43,000 ghost workers and “double dippers.”⁹

Biometric technologies have underpinned a wide range of efforts to improve identification, democratic participation and service delivery in the developing world. This includes programs to expand financial access for the poor, improve payroll and pension management, reduce fraud and corruption in the civil service, create new voter rolls, provide health services and insurance, verify the attendance of workers and teachers and a range of cash and in-kind transfers. Typically, in developing nations there are two broad types of applications: “foundational” and “functional.” The aim of “foundational” programs is to supply general identification for many official and personal uses, most commonly by establishing civil registries and national IDs. Conversely,

“functional” identification is introduced in response to a demand for a particular service or transaction, such as voter IDs, health records, bank cards. These two groups of identification platforms are blurred, because functional identification are intended to serve a particular purpose but eventually it metamorphosed into being a multi-purposed identifier, sometimes de facto, and not always according to plan. So what starts off as a functional application like a driver’s license ends up meeting the demand for identification in other areas. This was a major challenge to developing a single-purpose identification system in Nigeria as the Central Bank of Nigeria rather than work cooperatively with the National Identity Management Commission, single-handedly established the Bank Verification Number (BVN) because it has the financial resources at its disposal. Relatively, simple fingerprint technology has been used in the past 20 years as a means of authentication for commercial transactions, sometimes substituting it for other methods (PINs, signatures) and sometimes supplementing them. However, with the introduction of the NIN, more precisely, digital biometric technology has paved the way for multi-purpose authentication, in some cases combined with mobile devices to create “biometric money” secure, cashless transactions in Nigeria.

Table 2.3 Different Contexts and Uses of Biometric Technology



Source: Biometric Identification for Development, 2019. Available online www.cgdev.org/publication/identification-development-biometrics-revolution-working-paper-315

2.1.2 The Concept of Sustainable Development

Sustainable development is an organizing principle for meeting human development goals by ensuring the sustenance of nature to deliver the natural resources and ecosystem services upon which the economy of nations and society depend. Development is the wellbeing that transcends past and present wellness or pleasure to include future pleasure, joy or satisfaction¹⁰. Therefore, the outcome of sustainable development leads to a society where living conditions and resources are used to continuously meet human needs without undermining the integrity and stability of the natural system for future generations. Sustainable development can therefore, be defined as the development that meets the needs of the present without compromising the ability of future generations to meet their own needs.¹¹ The concept of sustainable development started with sustainable forest management, which metamorphosed into socio-economic development needs

with the Brundtland report that focused on social inclusiveness and environmentally sustainable economic growth. In 1992, the United Nations Conference on Environment and Development published the *Earth Charter*, which outlined the need for building a just, sustainable, and peaceful global society in the 21st century. The United Nations then adapted the action plan Agenda 21, which was a non-binding action plan by member nations, multilateral organizations and individual governments around the world to execute at local, national and global levels the major objectives of global sustainable development by the year 2000¹². The objectives were subdivided into four sections;

1. **Section I: Social and Economic Dimensions**, was directed towards international cooperation to accelerate sustainable development in developing countries and related domestic policies, combating poverty, consumption patterns, demographic dynamics and sustainability. Protecting and promoting human health conditions, promoting sustainable human settlement development, integrating environment and development in decision-making.
2. **Section II: Conservation and Management of Resources for Development** was directed at the protection of the atmosphere, integrated approach to the planning and management of land resources. Combating deforestation, droughts, managing fragile ecosystems: sustainable mountain development, promoting sustainable agriculture and rural development, conservation of biological diversity, environmentally sound management of biotechnology, protection of the oceans and all kinds of seas, including enclosed and semi-enclosed seas, and coastal areas.
3. **Section III: Strengthening the Role of Major Groups** was directed at global action for women towards sustainable and equitable development, children and youth in sustainable

development. Recognizing and strengthening the role of indigenous people and their communities, strengthening the role of non-governmental organizations such as partners for sustainable development, local authorities' initiatives in support of the Agenda. Strengthening the role of workers and their trade unions, strengthening the role of business and industry, scientific and technological community and strengthening the role of farmers.

4. **Section IV: Means of Implementation** was directed at financial resources and mechanisms to achieve sustainable development across the globe, transfer of environmentally sound technology, cooperation and capacity-building. Science for sustainable development, promoting education, public awareness and training, national mechanisms and international cooperation for capacity-building in developing countries, international institutional arrangements, international legal instruments and mechanisms, information for decision-making science, technology transfer, education international institutions, and financial mechanisms.¹³

Thus Agenda 21 provided a broad based guideline and implementation strategies for sustainable governance and development for nations focused on four areas; socio-economic development, conservation and management of resources, empowering and strengthening the roles of the most vulnerable of society; children, women, persons with disabilities, minorities, indigenous people and finally the implementation strategies to actualize all the objectives. The entire concept hinged on changing the old ways of doing business to new approaches that involved cross-sectoral co-ordination and the integration of environmental and social concerns into all development processes. In fact, Agenda 21 emphasized that a broad public participation in decision making is a fundamental prerequisite for achieving sustainable development.¹⁴

Table 2.4 United Nations Development Goals (SDGs)



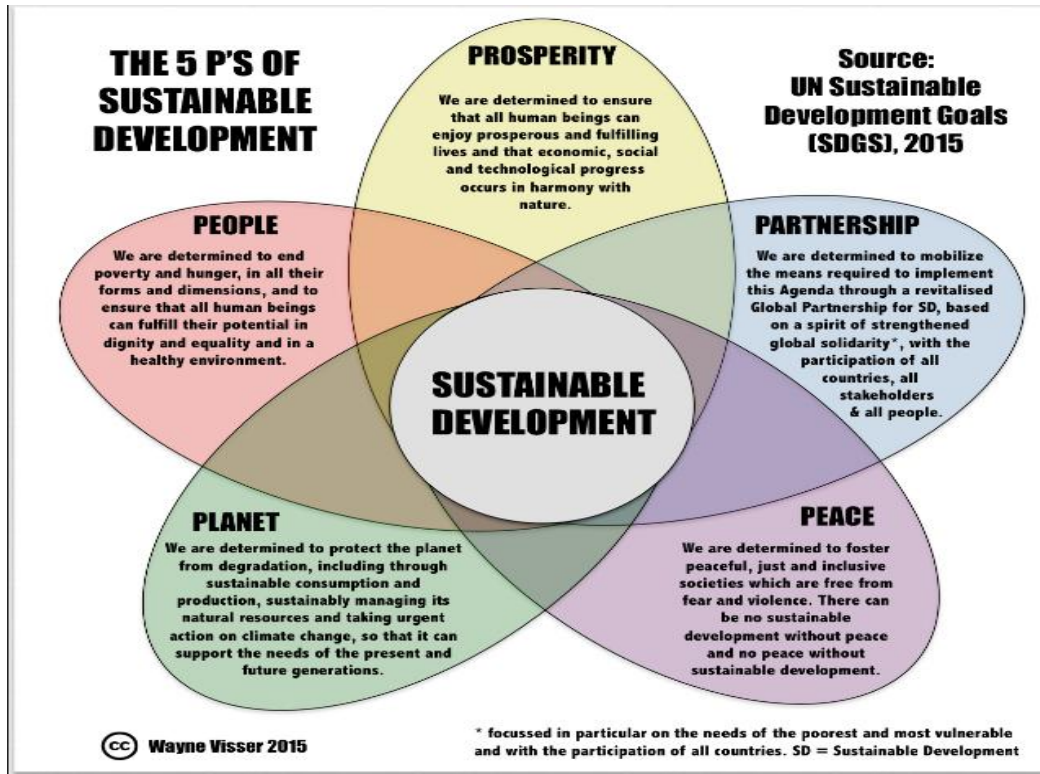
Source: Sustainable Development Goals. Available online www.un.org/sustainabledevelopment/blog/2015/12/sustainable-development-goals-kick-off-with-start-of-new-year/

Under the principles of the United Nations Charter of the Millennium Declaration, principles and treaties on sustainable development, including economic development, social development and environmental protection were identified. In year 2000, the United Nations developed the Millennium Development Goals (MDGs) which was binding on all members with a terminal date in year 2015. Unfortunately, most member nations including Nigeria were not able to achieve the deadline set for the achievement of the goals. Pertinent among the goals were the eradication of extreme poverty and hunger, achievement of universal education, improvement in maternal health, reduction of child mortality and the promotion of gender equality and empowerment of women. The United Nations then came up with the Sustainable Development Goals (SDGs) 2030, to afford a range of member nations the opportunity of accomplishing the goals. There are seventeen goals focused on sustainable development as indicated in the diagram above.

Broadly defined, Sustainable Development is a systems approach to growth and development and to manage natural, produced, and social capital for the welfare of their own and future generations¹⁵. The term sustainable development as used by the United Nations incorporates both issues associated with land development and broader issues of human development such as education, public health, and standard of living¹⁶

Table 2.5 The Five Pillars of Sustainable Development

DO NOT COPY. LEAD CITY UNIVERSITY, NIGERIA



Source: 5Ps of Sustainable Development, UN Sustainable Development Goals SDGS 2015. Wayne Visser 2015.

Sustainable Development hinges on four objectives; social, human, economic and environmental. Social sustainability aims to preserve social capital by investing and creating services that constitute the framework of our society, by maintaining and improving social quality with concepts such as cohesion, reciprocity and honesty and the importance of relationships amongst people to improve their standards of living. It means to preserve future generations and to acknowledge that what we do can have an impact on others and on the world. The process can be encouraged and supported by laws, information and shared ideas of equality and rights¹⁷

Human sustainability aims to maintain and improve the human capital in society. Investments in the health and education systems, access to services, nutrition, knowledge and skills are all programs integrated under the umbrella of human sustainability. It encompasses the development

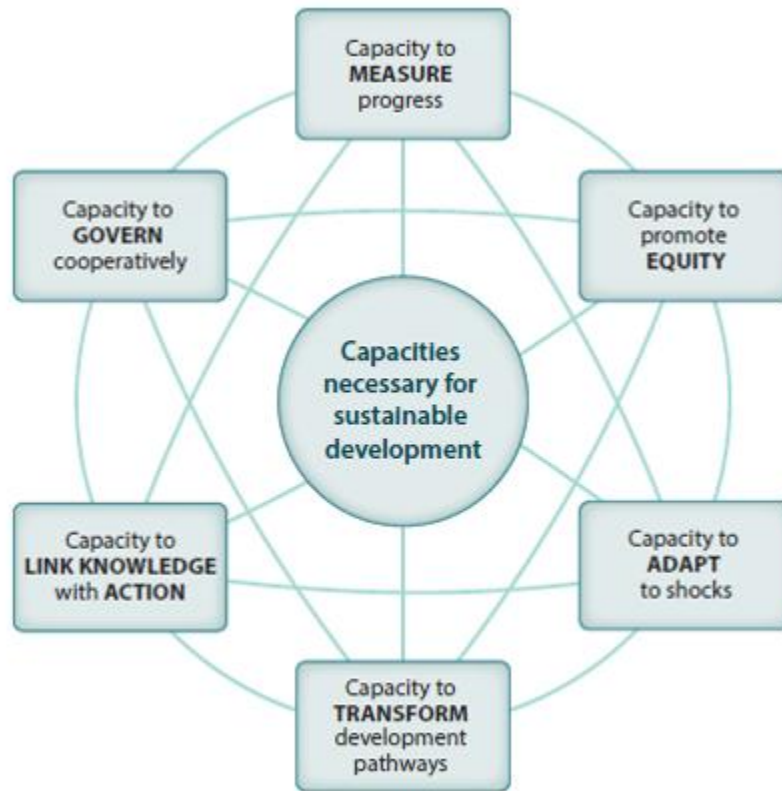
of skills and human capacity to support the functions and sustainability of the organization and to promote the wellbeing of communities and society and focuses on the importance of everyone directly or indirectly involved in the making of products or the provision of services or broader stakeholders described as the human capital of the organization¹⁸.

Economic sustainability aims to maintain the capital intact. In the context of business, it refers to the efficient use of assets to maintain company profitability over time. As stated by the UK Government in its annual report in 2017: “Maintaining high and stable levels of economic growth is one of the key objectives of sustainable development. Abandoning economic growth is not an option, but sustainable development is more than just economic growth, the quality and quantity of growth matters.”¹⁹

Environmental sustainability aims to improve human welfare through the protection of natural capital such as land, air, water, minerals. Environmental sustainability, as globally described, places emphasis on how business can achieve positive economic outcomes without doing any harm, in the short- or long-term, to the environment. An environmentally sustainable business seeks to integrate all four sustainability pillars and to reach this aim each one needs to be treated equally²⁰.

There are six interdependent capacities that are fundamental to the successful pursuit of sustainable development by any nation: 1. the capacity to measure progress, 2. capacity to govern cooperatively, 3. capacity to link knowledge with action, 4. capacity to transform development pathways, 5. capacity to adapt to shocks and 6. the capacity to promote equity²¹.

Table 2.6 Capacities Necessary for Sustainable Development



Source: William C., Clark and Allicia G., Harley.

https://www.researchgate.net/publication/343418376_Sustainability_Science_Toward_a_Synthesis/download

Nature provides man with resources, such as land, water, and air, which need to be harnessed, developed and sustained for meaningful living in the society²². Therefore, in a bid to achieve sustainable development in any society, projects are set up to accomplish developmental goals. In a situation where these goals are not properly executed, either by reason of corruption, poor maintenance of public resources, high cost of governance, or a combination of these factors amongst others, the society experiences developmental challenges²³. The importance of identification for people's rights and development was recognized by the international community through the adoption of Sustainable Development Goal (SDG) "Target 16.9: 2030, through the provision of legal identity to all, including birth registration²⁴

The right to an identity starting from birth as guaranteed in Articles 7 and 8 of the Convention on the Rights of the Child (CRC), to be recognized as a person before the law are critical first steps at ensuring lifelong protection requisite for exercising other rights. A legal identity is the basis on which children can establish a nationality, avoid the risk of statelessness, and seek protection from violence and exploitation. To prevent child labor, child marriage, and underage recruitment into the armed forces, proof of age is required²⁵.

In most society's globally, having an official way to prove one's identity may be required for many formal interactions, transactions, and services across the public and private sectors. For example, verifying a person's identity against an official credential or registry is often required to open a bank account, vote in an election, obtain formal employment, acquire a nationality, register for school, enroll in health insurance, receive a social transfer, buy a SIM card, register property, cross borders, or seek legal redress. The acceleration toward online services and digital transformation across governments and firms means that people increasingly need a secure and accessible means to prove their identities remotely over the internet. "IDs are taken for granted by those who have them. But lack of identification creates barriers for each individual affected and for the countries they live in"²⁶.

The ability to know who people are, is essential for a number of government responsibilities, including (a) targeting social programs and ensuring that the correct people receive benefits; (b) responding to emergencies, disasters, and epidemics that require rapid direct assistance; (c) collecting taxes; (d) reducing fraud in public wages; (e) facilitating safe and orderly migration; and, in the case of civil registration, producing vital statistics for planning and monitoring development progress. (f) For certain private entities, verifying customers' identities to a particular level of assurance for certain services such as opening or allowing access to an account

is necessary to mitigate risk, comply with customer due diligence (CDD) or know your customer (KYC) requirements or other regulations that protect clients against identity fraud and theft²⁷.

Identification systems provide digital mechanisms for individuals to authenticate themselves remotely in online contexts. They are also important enablers of an inclusive digital economy, underpinned by digital platforms across sectors, including for online services and digital payment systems. This includes improving governance and service delivery, increasing financial inclusion, reducing gender inequalities by empowering women and girls, and increasing access to health services and social safety nets for the poor. Compared to paper-based registries, the adoption of digital technologies has the potential to increase the accuracy and reliability of identity data and credentials, automate processes to save money and increase convenience, and provide new platforms for innovations in service delivery²⁸.

2.1.3 The Concept of Security and Identity Management

Although there are risks to digital technology, digitalization also presents the opportunity to intentionally design identification systems to be more inclusive, user-friendly, and protective of people's rights and data than ever before, through the development of new standards, models, and tools to exercise personal oversight and control over how data are used. People who are unable to obtain or easily use identification are therefore at greater risk of being left behind when strict identification requirements must be met to access services. Without proactive mitigation measures, new or upgraded identification systems may reinforce or perpetuate existing inequalities, discriminatory practices, and structural biases. Like other systems that process personal data, identification systems may also undermine individual data protection and privacy rights in the absence of appropriate laws and regulations, oversight, and technical controls and

safeguards. Data breaches, unauthorized use or surveillance, identity fraud, and function creep can put people, especially vulnerable groups, at serious risk of harm²⁹.

While these risks are present in any identification system, they may be amplified by digitization. With digital technologies, the potential scale and harm of the mismanagement or misuse of personal data are much greater than with paper-based systems. Similarly, the adoption of technologies that depend on internet connectivity and expensive devices has the potential to widen the digital divide and create new obstacles for already marginalized groups to reliably obtain or use identification. The speed of innovation can also create incentives to focus on obtaining the latest technology rather than building systems that are fit for current purposes and flexible for future needs³⁰.

When a person identifies or authenticates herself using one or multiple identity attributes, the degree of confidence that she is who she claims to be depends on the degree of security assurance provided and the context in which the information is captured, referred to as the Level of Assurance (LOA). Assurance levels depend on the strength of the identification and authentication processes, and are critical to access control and reducing identity theft. The higher the LOA, the lower is the risk that service providers will rely on a compromised credential during a transaction. For “identity proofing”, the LOA is dependent on the method of identification, including the scope of personal information and attributes collected about an individual during enrollment, and the degree of certainty with which these attributes are ascertained (whether or not they are validated). For example, if personal data are collected during enrollment but not de-duplicated or checked against existing databases for veracity, this would constitute a low LOA because there is no validation of the identity information³¹. The existing

standards for security assurance level for digital identity and authentication include: ISO29115/IEC DIS; UK Cabinet Office; European Commission.

Table 2.7 Four Levels of Assurance (LOA) in Accordance with ISO 29115

Out of scope	LOW	SUBSTANTIAL		HIGH	eIDAS definition
LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 3	LEVEL 4	ISO 29115 levels
Weak Authentication Legacy password	Secure Authentication • Seamless • SMS+URL • USSD • SIM Applet • Smartphone App • Token or OTP	Strong Authentication • USSD • SIM Applet • Smartphone App • Token OTP + pw • Biometrics	Strong Authentication • SIM Applet • Smartphone App in TEE • Token OTP (PIN + certified TEE or SE) • Biometrics	Very Strong Authentication • SIM Applet with PKI • Smartphone App in TEE with PKI • PKI ID (PIN) • PKI ID (PIN + SE (SIM /eSE) • Biometrics	Authentication/ electronic ID
No Identity Proofing	Presentation of identity information	Verification of Identity information		In-person registration with verification	Identity proofing during registration
EXTREMELY HIGH	MITIGATED	LOW	MINIMAL	MINIMAL	Risk Level

Key: OTP = one-time password; PKI = public key infrastructure; (e)SE = secure element or embedded secure element (a tamper-resistant hardware platform); TEE = trusted execution environment (a secure area of the smartphone); USSD = unstructured supplementary service data ("quick codes"). Note: NISTIC 800-63A draft standard guidelines on identity proofing also allow for virtual-in person proofing and enrollment transactions²⁸

Source: Inter-Domain Electronic Identification. Retrieved from www.kthdivaportal.org

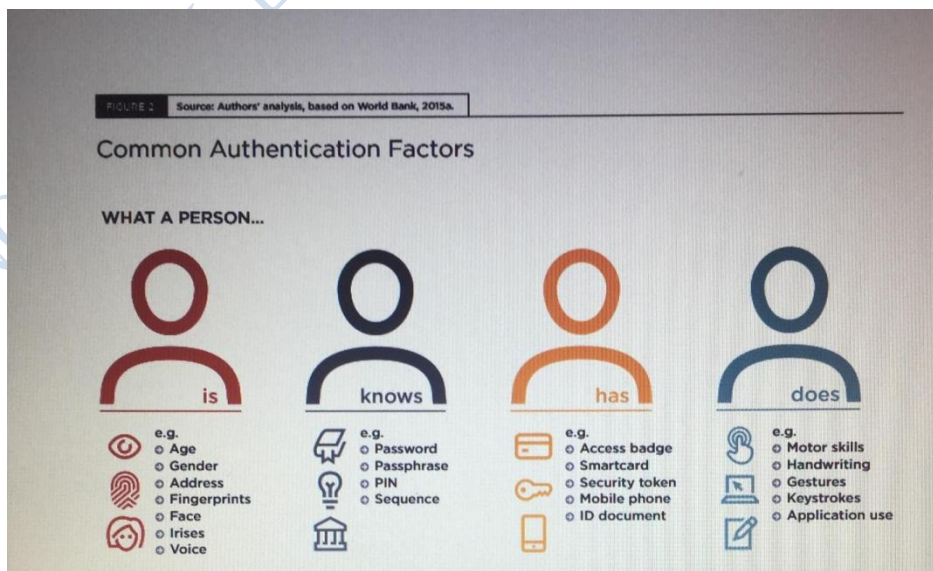
There are four Levels of Assurance (LOA) in accordance with ISO 29115:

1. LoA1 - no identity proofing; little confidence that this is the same person.
2. LoA2 - basic identity proofing; single factor of authentication (for example, username / password or possession and control of a device).
3. LoA3 - more stringent identity proofing; multi-factor authentication [for example, something I have (the device) + something I know (a PIN)].

4. LoA4 - in-person identity proofing required; strong cryptographic authentication of all communicating parties and all sensitive data transfers between the parties such as mobile signature.

For authentication, the strength of the identity credential and authentication depends on the robustness of the technology and the authenticators used. Different types of transactions will require different LOAs, and not all transactions will require the highest level—the greater the risk of the transaction, the greater the assurance level must be. Typically, single factor authentication—such as an ID number or knowledge of a password—is not sufficient to prove a person’s identity or provide accurate authentication. This level of risk may be appropriate for some applications (for example, checking Facebook) but higher security transactions (for example, collecting benefits or signing an official document) may require additional or multiple factors of authentication to augment the user’s credentials. These factors must be robust and secure.

Table 2.8 Common Authentication Factors



Source: Digital Identity in the ICT ecosystem: An Overview. Available online https://www.itu.int/dms_pub/itu-d/opb/pref/D-PREF-BB.ID01-2018-PDF-E.pdf

The robustness and security of these factors comprises three elements:

1. Authentication robustness - Is this the same person?
2. Security robustness - Is the authentication tamper-proof?
3. Identity proofing robustness - Who is this person? How much do I trust the veracity of the information provided?

The possession of a secure device, such as a physical token, a mobile phone, or a smartcard allows for secure authentication and can be complemented by a personal identification number (PIN) or attribute (such as a biometric feature or behavior) in order to provide stronger security. For security purposes, typically roles are assigned to stakeholders in a Digital Ecosystem for identification and authentication processes. In general, individuals such as citizens or clients are the primary end-users in a system, while government bodies and private firms are the primary providers of digital identity, authentication, and services. Other key stakeholders are public actors responsible for regulation, and public and private actors responsible for standard setting and trust building.

Individual citizens and clients are the end-users of digital identity systems. They enroll in identity systems and use the credentials they receive to access the benefits and services of a given country or company.

Government Agencies. Typically serve as legal registrars, such as the National Identity Management Commission, which is responsible for creating and maintaining national ID cards

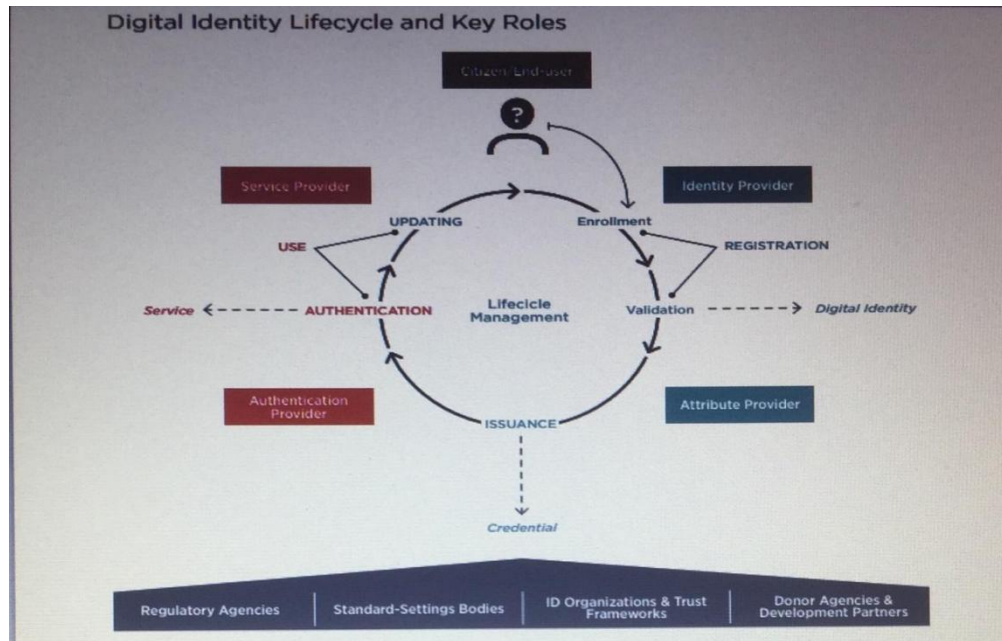
and other documents, as well as national population registers and birth registers that record life events.

Functional Registrars are agencies that create and maintain identity registries for a specific purpose or service, such as FIRS, FRSC, PENCOM, INEC, these registries are linked to the NIMC Database.

Private Firms are usually commercial service providers that either use digital identities in order to provide services to their clients and/or enable end-users to transact in a digital environment providing digital identity and authentication services. This includes banks, mobile network operators, utilities, healthcare providers, online commerce platforms, credit rating agencies.

Identity solution suppliers are firms that provide hardware, software, and support for the development of digital identity systems. They may be contracted to provide a specific set of inputs at a particular stage in the digital identity lifecycle, or may provide services on an ongoing basis.

Table 2.9 Digital Identity Lifecycle and Key Roles



Source: Digital Identity Lifecycle and Key roles. Available online <https://documents1.worldbank.org/curated/en/600821469220400272/pdf/107201-WP-PUBLIC-WB-GSMA-SIADigitalIdentity-WEB.pdf>

Government bodies generally play one or more principal roles in the digital identity lifecycle, at times in partnership with the private sector: Digital identity providers are those actors that create digital identities for users by registering them (including enrollment and validation) and issuing documentation or credentials. In general, identity providers also store and manage data and credentials on behalf of the users. In the public sector, legal registers are the most common digital ID providers, although functional registers, such as electoral commissions may also create and manage digital identities such as a voter register. Commercial service providers are also frequently digital identity providers. For example, mobile companies provide SIM cards and banks issue debit cards, in each case after enrolling and verifying the identities of their customers. Oftentimes, private identity providers rely upon or use legal identity provided by the public sector for instance SIM card may be linked to a National Identification Number³².

Therefore, building an identification management system that meets developmental goals must focus on building a system that requires a multifaceted, multi-stakeholder approach on a secure platform. This is where security in e-identity management comes in. In this research security in identity management will be examined from two angles. The first relates to the effective management of data in such a manner that it does not fall into the hands of hackers and other unscrupulous elements who may use it for untoward means as indicated in the Level of Assurance (AOL) and fortification of the authentication systems explained above. The second relates to the effective management of data to confront and prevent against terrorists and other criminal elements fueling kidnapping, banditry, stealing and terrorism across the country. In this regard, security can be seen as freedom from danger or threat to a nation's ability to protect itself, promote its cherished values, legitimate interests and enhance the well-being of its people³³. In this regard, security is seen as an essential service, which a government must provide to its citizens. Therefore, the 1999 constitution as amended emphasizes the significance of security, when it says that the security and welfare of the people shall be the primary purpose of the state. Security therefore, is a social contract between the state and the people, in which the state is expected to protect, defend and provide for the people in the public sphere of life. National security therefore, connotes the lack of threat to life, prosperity and socio-economic well-being of the people. National security is also taken to mean the totality of measures instituted by government to protect the territorial integrity and the cherished values, and interest of the people as well as the guarantee of the freedom of the citizenry from anxiety, threats to life and property and their safety from natural or manmade disasters³⁴.

Thus, the management of a robust identity management system requires clearly fortifying and defining the purposes and intended uses of the system such as; building a technological firewall

that makes it impossible for unauthorized persons to have access, adopting adequate legal and regulatory frameworks that remove barriers to access and providing sufficient safeguards and oversight. Implementing inclusive policies and practices for identification systems for enrollment and use, following a people-centric and data privacy protecting approach for design and risk assessment; and selecting appropriate context, equitable, and accessible technologies that ensure the quality, security, and utility of the system now and in the future. Continuous and transparent engagement with the public and a diverse set of stakeholders throughout these processes are essential for fostering trust and accountability and ensuring that identification systems are built to be useful for people and support sustainable development outcomes³⁵.

2.2. Theoretical Review

2. 2. 1. Philosophical Identity Theory

To begin any discussion of e-identity and security, one must look to the philosophical dialogues of René Descartes. Often attributed as “I think, therefore I am,” Descartes³⁶ thoughts on identity speak to the very technological distance between the physical body and the psychological mind that technology researchers wrestle with today. Descartes ponders the existence of existence: what is real and what is illusion. He argued that if one is convinced that what he or she beholds is a deception, one would have to exist because one would have to be persuaded and convinced to be deceived. Thus, he wrote, his argument “I am, I exist, is necessarily true each time it is expressed by me, or conceived in my mind”. Descartes makes it clear that it is the mind, not its surroundings, that defines existence and serves as the foundation for reality and identity. And he

raised a question that is particularly germane to the present discussion of identity and technology: “Am I so dependent on the body and the senses that without these I cannot exist?”. Following in Descartes footsteps, other prominent scholars discussed identity in terms of indiscernible³⁷. In an exchange of letters with Samuel Clarke, Leibniz explained that no two individuals are so much alike that they are indiscernible from one another. If they are truly indiscernible, then they are the same thing. Thus began the theory of unique identification for individuals³⁸.

2.2.2. Digitalization

Digitalization is increasingly approaching, advancing and embracing the physical, affording the virtual to everything possible to digitize³⁹. Digital identity is a proxy for a relationship one has with a community of interest. Whenever someone questions the need for so many IDs, they best remember that modern life is complicated, and that the variety of identities is a direct result of us exercising a spread of relationships. We have always conducted our business and personal lives with multiple connections. Now cyberspace presents a dizzying array of new services, each of which by default represents a new relationship and potentially a fresh identity. For many decades, a whole spectrum of identity memes has been passed on from one business generation to the next: Driver licenses have come to be widely used to prove identity in retail transactions, despite the fact that many roads & traffic authorities wish they simply remained as permits to operate motor vehicles. It is not clear that license issuers ever officially sanctioned licenses as proof of identity but it has obviously been mimicked across many different sectors, and slowly adapted and varied in many ad hoc ways. So identification by driver license is a meme that has jumped across many different identity species, a phenomenon often seen in bacterial genetics.

Anti-counterfeiting features for original identity documents are constantly innovating. Simply adding the photo of the document holder transformed driver license and citizenship papers many

years ago. Many traditional measures are a variation on the theme of making document features difficult to replicate without specialist printing plant. These include micro-printing, guilloche artwork, holograms and optically variable dyes. More recently, electronics have been added—most notably chips—which are copy-resistant, and bring added powers such as biometric storage against which the person presenting the document may be verified. Most countries legislate Know Your Customer (KYC) rules for how financial institutions must prove the identity of their account holders. In Australia, the Financial Transaction Reports Act 1988 created the “100 point” check where varying weightings are given to each of a schedule of identity documents. International banking accords from time to time bring pressure to bear on local KYC rules, often seeking to harmonize them. Developments in organized crime led to a broadening of KYC rules under the Anti-Money Laundering and Counter-Terrorism Financing Act 2006 to non-bank sectors, while at the same time enabling online presentation of document details to open some types of purely online bank accounts. The number of “authentication factors” has grown over time to counteract ID theft and account takeover. There are many variations on the multi-factor meme, including Card Authentication Protocol (CAP) readers that generate one-time codes using a Chip-and-PIN card, the texting of passcodes to customers’ phones, and hybrid biometrics. Password practices have become ever stricter. Minimum recommended lengths get longer all the time, and the practice of mixing up characters became necessary in response to more powerful brute force and dictionary attacks. Cryptographic algorithms never stand still for very long. Ongoing cryptanalysis strives to stay ahead of potential attackers, actively searching for weaknesses and forcing enhancements over a succession of standards: from MD5 through SHA-1 to SHA-2 and the imminent SHA-3 for

message digests, and from RC4 and DES through DES-3 to the current state-of-the-art AES cipher.

The term ecosystem has become fashionable in IT, as a sexy euphemism for “marketplace”. With a politically correct ring to it, “ecosystem” is used to lift the conversation above the hurly burley of competition and to attract more government support. But those who like the term should heed the fact that the strongest ecosystems evolve naturally; they are never designed. Truthfully, the ecosystem anticipated by The Laws of Identity and the National Strategy for Trusted Identities in Cyberspace is an elaborate IT architecture with predefined and often novel roles for all players⁴⁰. But what of our other more ‘serious’ identities, like bank accounts, credit cards, employee IDs and health identifiers? Social logon has unquestioningly become the model for joining up these types of relationships as well. As business environments change, risk management rules respond. And so identity management processes and technologies are subject to natural selection. An ecological treatment of identity recognizes that selection pressures act on the many separate facets of digital identity, generally strengthening them. On occasion however, some environmental pressures act to actually weaken identity practices. For example, heightened privacy awareness is leading to some employers collecting less identifying information from new starters than they might otherwise prefer⁴¹.

There is no doubt that the security threat landscape has become increasingly complex and sophisticated. The question is no longer if an organization will be impacted by a significant crisis or disruption, but when. It is a reality that today’s security leaders have to contend with no matter their size, industry or location. In a deeply connected society, digital trust is the currency that facilitates future innovation and prosperity. Trustworthy technologies, in turn, represent the foundation on which the scaffolding of a fair and cohesive society is built. Unless we act to

improve digital trust with intentional and persistent trust-building initiatives, the digital world will continue to drift towards fragmentation and the promise of one of the most dynamic eras of human progress may be lost⁴²

2.3. Review of Empirical Studies

This empirical review examines the use of identity in contemporary societies as a tool of social developments by scholars and the impacts on identification, digitalization, cybersecurity and infrastructure management, as well as the deployment of the ecosystem platforms and the next-gen risks and the way forward for the advancement of developmental outcomes and security in Nigeria. Essentially, how one communicates who they are to others with the use of technology has given limitless possibilities for identification with the advent of the internet and computer-mediated environments. Thus, modern identification procedures today take into account computer-mediated communication theories and research, where advances in technology provide humans with a global bridge of identity verification using e-identity as a foundational concept tied to self-presentation and the communication of one's identity to another⁴³ and the immersion of oneself into a computer-mediated environment⁴⁴.

The following empirical studies helped in providing in-depth knowledge and tools of analysis that would foster the achievement of sustainable development through e-identification and security in Nigeria. A study titled "*Empirical Identity as Dimension of Development in Africa: with Special Reference to the Igbo Society of South – East Nigeria*", evaluates the intricacies involved in understanding how identity propels or hampers the Igbo man's social development outside the South East Region. In the study, Identity was seen as an instrument of development for the Igbo people within the South East Region of the country. The study utilized the qualitative method in analyzing the intricacies involved with Igbo Identity outside the zone and

observed that the inability to maintain the Igbo Identity hampers the socio-economic development of the Igbo man outside of his dominant area of domicile due to the fact that those who adopted to western way of life jeopardized their autonomy and by extension experienced frustration to their development due to the loss of their Identity, which is a fundamental element of development of any group. The study argues that culture is a dimension of identity and once it is compromised, it filters the identity and the development of a group. This empirical review therefore, supports the assertion that identity is fundamental to the socio-economic development of a people.

Another study titled “*Nigeria: Social Identification and the Struggle for Survival*”, Identity was explored in its social context, which is enmeshed in ethnic, political and religious affiliations and provokes conflicts in Nigeria, a multifaceted society of diverse identities. Thus the survival of individual within this multifaceted society depends on their identification with their ethnic, political and religious affiliations to gain access to socio-economic benefits in the society. The study underlines the powerful role that one’s identification plays in such a diverse environment to provide one with the opportunity to benefit from federal or state government largesse. Nigeria being a conglomerate of people of multiple social identities, individuals could be identified by local government, state of origin, ethnic group, religion, political party and region. In Nigeria, primordial identity plays a subjective role in the allocation of resources and benefits to citizens due to the discriminatory value it provides, while civic identity plays an objective role because it cuts across social boundaries regardless of the in-built prejudices. Civic registration plays a non-discriminatory role in the allocation and distribution of state resources due to the universal application of identification. The challenge of inter-group relations based on ethnic and religious affiliations affect national unity, development and peaceful coexistence. Thus, the use of

National Identification Number provides a ground for unification beyond the sub-national, ethnic and religious context, and therefore an objective tool for broad based development across the country.

In another study titled “*Nigeria’s Digital Identification (ID) Management Program: Ethical, Legal and Socio-cultural Concerns*”, the scholars explored the use of National Digital Identity Management Systems as a critical tool for inclusion of citizens in the distribution of government public social goods, but outlined the privacy, security, human rights, ethics, and social cultural implications, associated with the design and scaling of such a system at national level. Using a mixed method approach, the review provided an empirically sound perspective around centralized national and responsible data-governance and offered recommendations for the effective and efficient use of digital infrastructure in identity and security management in Nigeria. This empirical review provided the bulwark for this research in making suggestions to the Federal Government on issues of privacy, ethics, human rights and other social issues as identified in this study.

A study titled, “*The Impact of Everyday Violence on Identity: An Experimental Study in Nigeria*”, examined the issues of violence, robbery, burglary or interpersonal assault and empirically assessed the impacts on social identity, trust and security in Nigeria, and provides this research the opportunity to evaluate the findings of the scholars that eventually constituted valuable recommendations for managing security challenges through identification. The empirical review focused on the use of open-ended interview in Lagos on 70 violence affected Lagosians and provided salient information on identity and security management. Lessons drawn from the study helped in developing the solutions towards combating security challenges using identification and verification of citizens and their social behavior.

Finally, another study “*Identity Verification and Societal Challenges: Explaining the Gap between Service Provision and Development Outcome*”, examined how the capability to produce a secure, reliable form of identification on request is taken for granted by many citizens which eventually denied them the social benefits of accessing government and business benefits and establishing their rights for employment and government in combating crimes. The scholars argued that the provision of identity verification services is a social intervention tool for a range of developmental outcomes of which many lack in Nigeria because of the lack of trust in multiple government agencies Identity cards, which are often replicated by criminals. Thus, in Nigeria the study argued that a huge number of the citizens lack reliable means of identification, leading the scholars to conclude that the interrelations between ICTs and the use is crucial to developmental outcome and why some countries achieve desired development from their use of IT systems, while others lag behind. The scholars used a comparative case study analysis with Nigeria as the problematic case, and Bangladesh and the United Arab Emirate (UAE) as more successful cases, due to their effective use of technology and identification whilst low trust of the use of technology and identification cards persist in Nigeria.

2. 3. 1. Identity Management in Nigeria: Historical Perspectives

Identity Management in Nigeria commenced with the promulgation of National Civic Registration Decree of September 1, 1979 under General Olusegun Obasanjo, just a month before he handed over power to the elected democratic Second Republic Administration of Alhaji Shehu Shagari in October 1, 1979. The decree set up a body called the Department of National Civic Registration, (DNCR) which was charged with the responsibility of issuing National ID Card to all Nigerians who have attained the age of 18 years as at the date of the decree. That exercise to institute an Identity Management System for Nigeria by the Department

of National Civic Registration (DNCR) failed woefully until the second coming of President Olusegun Obasanjo as the newly elected Fourth Republic President of the Federal Republic of Nigeria in May 29, 1999. He quickly revived the Identity Management Infrastructure in the country, which he considered pivotal to the socio-economic development of Nigeria. He entered into a Turnkey Agreement with SAGEM a French Company in 2001 with the sum of \$215,911,000.00 (Two hundred and fifteen million, nine hundred and eleven thousand dollars only), being the (off-shore component) and N2,089,600,000.00 (Two billion and eighty-nine million, six hundred thousand naira only) being the (on-shore component) to deliver the Nigerian National ID Card project - an Integrated ID Card Production Facility, with the following deliverables:

- The Scanning subsystem
- Image Quality Control and the Fingerprint Search Verification subsystem
- Automated Fingerprint Identification System (AFIS)B (60m)
- Registered Candidates Database and Digital Library
- ID Card Personalization Equipment (18Nos) NBS Horizon personalization machines
- ICR Form Correction Centre; 60,000 Mobile Registration Workstation (MRWs) 60m
Registration Forms and 60m ID Cards from France
- SAGEM and specified third Party Software.
- Downloading PCs, generators for Local Governments (774) and States and Servers (37).

By SAGEM records, they registered and processed 52,640,908 (fifty-two million, six hundred and forty thousand nine hundred and eight ID Cards made up as follows:

- Total Female - 18,062,443 (stored separately)

- Total Male - 19,307,165 (stored separately)
- Total Rejects - 8,098,248
- Total Cards Issued - 37,369,608

The contract was for 60 million ID cards but only 52,640,908 ID cards records were provided, out of which only 37,369,608 ID cards were delivered;

- 8 million ID Cards not delivered, SAGEM acknowledged receipt of USD\$2.444m payment that is 40% down payment.
- About 260,000 Adhoc staff were trained to gather data within 6 weeks.
- Project concluded in December 2006 and the entire system subsequently shut down since then.
- Operations and management of the records were still under SAGEM when NIMC was established. No form of handing over of operations and management was conducted.
- No Nigerian including those DNCR staff trained by SAGEM were allowed to nor can operate the system left behind by SAGEM⁴⁵.

The program failed due to the recalcitrance of SAGEM to be accountable and cooperative with the Federal Government and for willful bribery and corruption on the part of the Nigerian officials managing the scheme. Safran a holding company of SAGEM claimed in a French Court in 2005, that SAGEM paid bribes worth between N4.8 million (\$30,000) to N80 million (USD\$500,000) to high ranking Nigerian officials including a former Minister of Internal Affairs between 2000 and 2003 to secure the 171-million-euro contract⁴⁶.

In 2007, to avoid the repeat incidences of corruption, President Olusegun Obasanjo by Act of the National Assembly established Act No. 23 of 2007 the National Identity Management Commission (NIMC) and placed the Commission under the purview of the Presidency, to be reporting directly to the Secretary to the Government of the Federation, who reports directly to the President. The NIMC Act, 23 of 2007 provides for the establishment of National Identity Management Commission (NIMC), its functions, powers, establishment of the National Identity Database (NIDB), assignment and use of General Multi-purpose cards, and the National Identification Number (NIN). The Act also empowers the Commission to make regulations connected with its functions and to repeal the law that created the former Department of National Civic Registration (DNCR) and transfer the assets and liabilities to the NIMC⁴⁷.

Based on the Mandate establishing the Commission to foster the orderly development of an Identity Sector and building a modern Identity Management System for Nigeria such as establish, Own, Operate, Maintain and Manage the National Identity Database in Nigeria, register persons covered by the Act, assign a Unique National Identification Number (NIN) and issue General Multi-Purpose Cards (GMPC) to Nigerian citizens as well as legal residents, the Commission set out to accomplish the following tasks:

- a) create, manage, maintain and operate the National Identity Database established under section 14 of the Act, including the harmonization and integration of existing identification databases in government agencies and integrating them into the National Identity Database.
- b) Register Nigerians of 16 years and above into the National Identity Database
- c) Register lawful non-national resident in Nigeria

- d) Issue a General Multipurpose Identity Card to registered persons pursuant to the relevant section of the Act.
- e) Collate information obtained by the Commission in pursuance of its functions under the Act and reproducing such information as may be required, from time to time.
- f) Assign a Unique National Identification Number to registered persons pursuant to relevant section of the Act.
- g) Ensure the preservation, protection, sanctity and security (including cybersecurity) of any information or data collected, obtained, maintained or stored in respect of the National Identity Database.
- h) Establish and maintain secured communication links with any existing relevant identity related database or agency.
- i) Maintain secured communication links with end-users in any public or private organization, agency or body including Card Acceptance Devices and Government Service Centers.
- j) Collaborate with relevant bodies and agencies in setting of standards and technical specification for telecommunications links between organizations and for the devices utilized for such communications established or maintained pursuant to the relevant section the Act.
- k) Respond to the verification enquiries regarding the identification of individuals.
- l) Perform such other duties which, in the opinion of the Commission that are necessary or expedient in discharging its functions under the Act.

- m) Enter into any form of agreement with any private or public sector-based agency or organization for the development or establishment of the Identity Management Solution or for the realization of any of its functions.
- n) Research and monitor developments in the identity management sector.
- o) Carry out the registration of births and deaths in Nigeria.
- p) Collaborate with relevant bodies and agencies in the setting of standards and technical specifications for ICT links between organizations and for the devices utilized for such communications established or maintained pursuant to relevant sections of the NIMC Act No 23 of 2007.

As the first step towards creating a robust National Identity Management System (NIMS), the National Identity Management Commission (NIMC) created a unique identifier for every registered individual into the National Identity Database (NIDB) called National Identification Number (NIN). The National Identification Number (NIN) consists of 11-digit non-intelligible numbers randomly chosen and assigned to an individual at the completion of enrolment into the National Identity Database (NIDB). Once a NIN is assigned to an individual, it can never be reassigned, given or used by another person. This is why it is identified as unique. In the case of the demise of an individual, his/her NIN is put to rest once a death certificate is presented to the Commission and the death of the individual is established. The NIN is used to tie all records about an individual in the database and is also used to establish or verify Identity of Individuals. All citizens and legal residents in Nigeria, from age zero (birth) and above are eligible to enroll for a NIN. The NIN can also be described as a Digital Identity (Digital ID), which is uniquely and electronically tied to an individual. It has a high assurance, content based and digitally verifiable with a range of other credentials or tokens.

Table 2.10 Various Types Functional Identity Cards

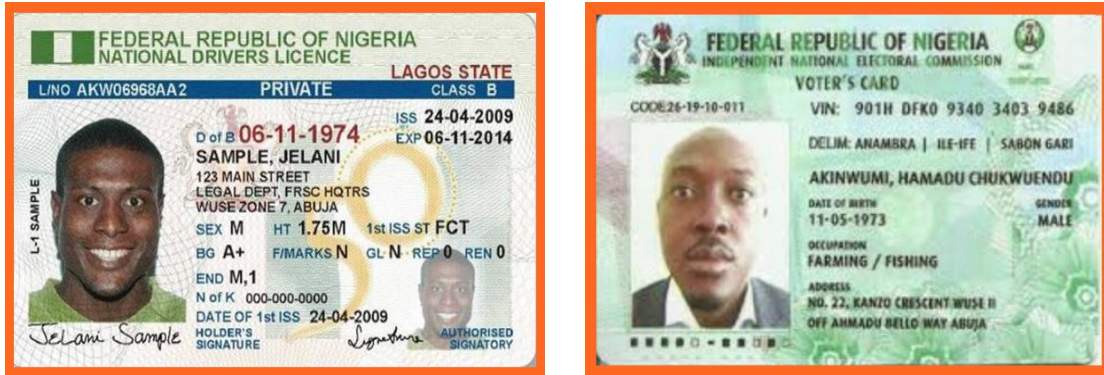
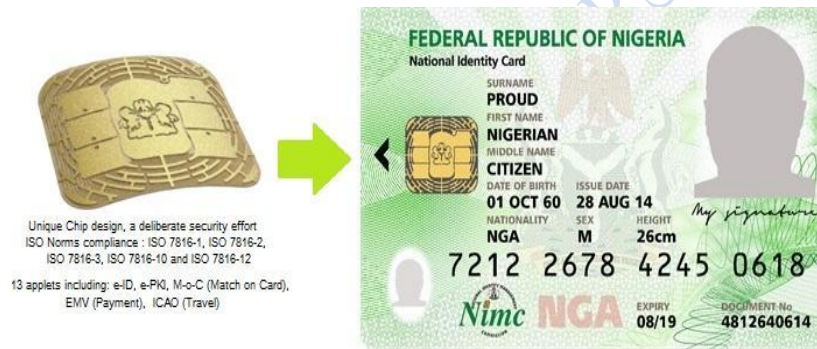


Table 2.11 NIMC Foundational Identity Multipurpose Card with Chip



Source: www.nimc.gov.ng

Prior to the creation of the National Identification Number (NIN), there was a proliferation of functional government identity databases in the country, consisting of Driver's License, International Passport, National Voter's Card, Government Official Identity Cards and Company Identification Cards, including Bank Verification Number (BVN). However, with the creation of the National Identification Number (NIN) and the integration and harmonization of functional ID, the Identification process in the country became more streamlined. Since the transfer of NIMC to the Ministry of Communication and Digital Economy, the Nigeria Communications Commission

has played a vital role in the integration of the enrolment of more Nigerians into the National Identity Management Database by asking the cooperation of telecommunication providers to ensure that every registered mobile phone subscriber SIM is integrated into the NIMC database through individual NIN. The Federal Road Safety Commission (FRSC) using Driver's license as a means of identification also requested all holders to the license to provide their NIN to ensure integration of their data to the National Database. Those who have Driver's license use them as an acceptable means of identification to gain access to other government social services and safety nets such as opening a bank account and as a means of assuring their identity across government agencies and even in the private sector⁴⁸

To be issued a driver's license, the National Identification Number (NIN) is now required with the proof of local government origin, birth certificate or sworn affidavit of age declaration, biometric fingerprints (ten fingers), passport photograph (ICAO standards), telephone number and address of residence. Other means of identification generally accepted in the country include the Nigerian International Passport, requiring the provision of the National Identification Number (NIN), proof of local government origin, birth certificate or sworn affidavit of age declaration, biometric fingerprints (ten fingers), home address, passport photograph (ICAO standards), telephone number, guarantors form sworn to before a Commissioner of Oaths / Magistrate, High Court Judge, letter of consent from parents for minors under 16 years of age and letter of consent for married women where applicable. Other means of identification acceptable across the country include the Nigeria Voter's Card, but despite the biometric data these means of identification could be replicated by criminals, until issuance of a unique identifier through the National Identification Number.

With the increasing incidents of compromise on conventional security systems (password and PIN), there was a high demand for greater security for access to sensitive or personal information in the Banking System. Thus, the Central Bank of Nigeria, under the leadership of Lamido Sanusi, then Central Bank of Nigeria Governor, introduced the Bank Verification Number (BVN), which enabled the linking of all bank accounts to the same person with a unique eleven-digit number. The BVN ensures that a Bank Customer can engage securely in transactions at any Point of Banking operations in Nigeria. A customer's BVN is mapped to the individual's biological traits namely:

- Finger Print
- Signature
- Facial photograph captured at the point of enrollment

BVN offers the verification and validation of the customers' identity seamlessly across multiple and interoperable electronic platforms. The BVN database is searched to display relevant information about an individual's bio-data, which includes names, phone numbers, addresses, dates of birth. The BVN database became the most reliable and comprehensive data source in the Nigeria Financial Industry warehousing over 38 million unique BVNs, which are intrinsic to each and every individual whose profile has been captured. It also has the following benefits:

- gives a unique identity that can be verified across the Nigerian Banking Industry not peculiar to one Bank.
- protected customer accounts from unauthorized access.
- addresses issues of identity theft, thus reduced exposure to fraud.
- enhances the Banking Industry ability to fish out blacklisted customers.
- standardized the efficiency of banking operations.

- linked enrolled customer accounts to all their other accounts across all Nigerian Banks.
- At introduction of the unique identifier, all bank customers were required to enroll within a fixed period capturing of all ten (10) fingers and facial image after which they were denied access to their accounts if they failed to comply.
- For authentication purposes, individuals performing banking transactions, such as applying for a loan were required to identify themselves using their biometric features which were matched against information in the central database.
- Update of customer information shall be done at their Bank Branches physically. Banks shall be prompted during account opening and credit check if a customer has been blacklisted by ANY Nigerian Bank.
- The BVN and unique features of an individual shall be used in conjunction with a PIN on a point of transaction (OPT).

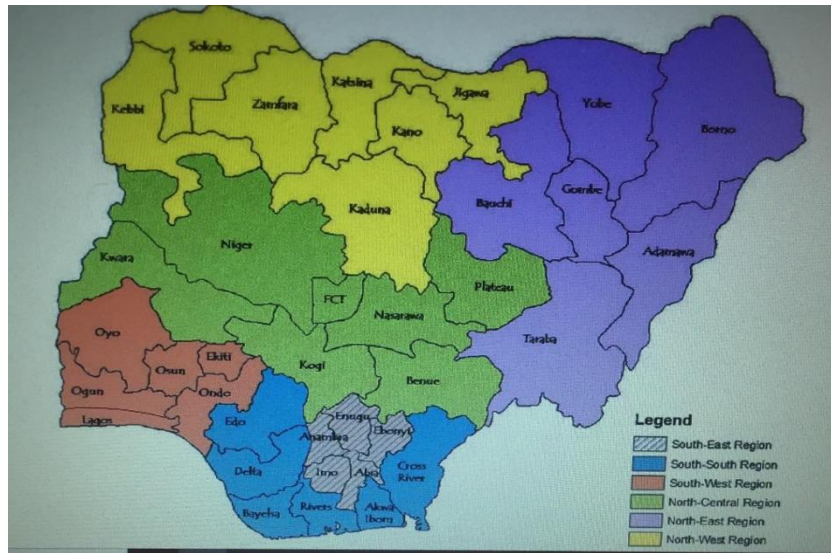
The purpose of the BVN is to use biometric information as a means of first identifying and verifying all individuals that have account(s) in any Nigerian bank and consequently, as a means of authenticating customer's identity at point of transactions⁴⁹.

In the Federal Civil Service, there was an urgent need after the Federal Service Reform Report to effectively manage the Identity of Federal Civil Servants to reduce the incidence of fraud and Ghost Workers. The IPPIS Integrated Personnel and Payroll Information System was introduced as part of Government Integrated Financial Management Information System (GIFMIS) a component of Economic Recovery Growth Plan (ERGP). The IPPIS is an integrated computerized financial package that enhances the effectiveness and transparency of public resources management by computerizing the payroll management and accounting systems for the

Federal Government, through the allocation of a unique identifying Number to all Federal Civil Servants integrating the payment of their salaries, allowances and other social benefits into a single account Federal Civil Servants and remittances of their statutory deductions for their benefits to Pensions Funds Administrators, National Housing Fund, Federal Income Tax deductions, Trade Union dues, and Cooperative Society dues. As an Identity Management system for the nominal roll of Federal Government Civil Servants, the IPPIS was used to resolve the challenges of ghost workers and the fraudulent activities of Federal Civil Servants in the payment system. All Federal Civil Servants were required to register through an online portal with their employment details and given an IPPIS Number upon verification and authentication of the employment details. Biometric information of the Civils was also taken to match other details of the individual⁵⁰.

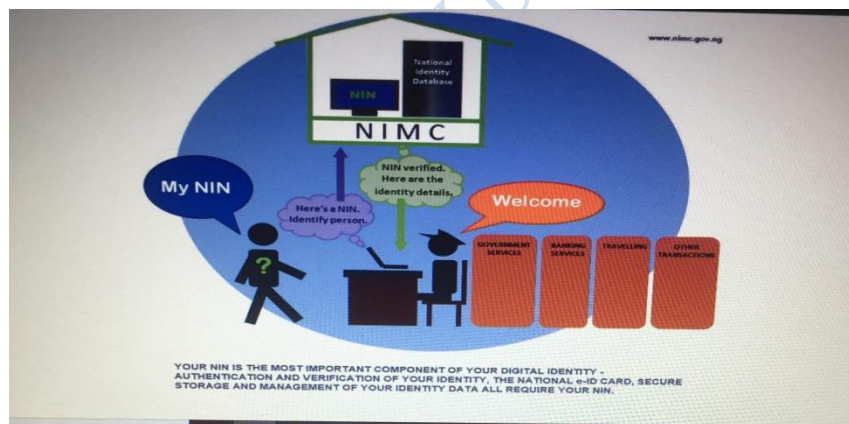
In compliance with the NIMC Act to wind-up and take over the Assets and Liabilities of the defunct Department of Civic Registration (DNCR) and to comply with the mandate to enroll all Nigerians of age and legal residents into the National Identity Database (NIDB), the National Identity Management Commission embarked on the renovation and acquisition of Enrollment Centers nationwide. Enrolment Centers were opened in the 774 Local Government Areas and the Capital of the 36 States of the Federation, Federal Capital Territory (FCT), and Six Regional Centers. Special Centers were also opened across most institutions of Higher Learning and Key Government Institutions across the Country, like Military Barracks, Police Barracks.

Table 2.12 Map of Nigeria Showing the 36 States and The Federal Capital (Abuja)



Source: www.nimc.gov.ng

Table 2.13 NIMC Procedure for Obtaining a NIN



Source: www.nimc.gov.ng

In order to have a broader reach for citizen's enrollment, NIMC also partners with approved Front-End Partners / Ecosystem Private Service Providers, with locations in Nigeria. There also NIMC Diaspora Centers located in the capital cities of some countries in the African Continent, Middle-East / Asia, Europe / Oceania and Americas.

To accomplish the task of building and managing a National Identity Management Systems (NIMS), a harmonization process was instituted of all existing federal government identity infrastructure through a legal framework. The legal framework harmonized and integrated the data collection and operations of the following institutions:

- a) The NIMC Act No. 23 of 2007
- b) Nigeria Immigration Act of 1963
- c) National Population Act No. 23 of 1989
- d) The National Health Insurance Scheme Act No. 35 of 1999
- e) The Federal Inland Revenue Service Act No. 13 of 2007
- f) Births and Deaths (Compulsory Registration) Act of 1992
- g) The Pension Reform Act of 2004
- h) The Federal Road Safety Act of 2007
- i) The Electoral Act of 2010 (and subsequent amendments in 2011, 2012)
- j) The Nigerian Communications Commission Act of 2003
- k) The National Information Technology Development Agency Act of 2007
- l) The Nigerian Police Act of 1974
- m) The Nigerian Prison Act of 1972
- n) Joint Tax Board Act of 2004
- o) The Corporate Affairs Commission Act No. 1 of 1990
- p) The Economic and Financial Crimes Act No. 1 of 2004
- q) The Central Bank of Nigeria Act of 1958 (as amended by the 2007 Act)

To facilitate e-government and public sector applications, the National Identification Management System (NIMS), was designed to uniquely authenticate and verify Identity of all individuals in the National Identity Database (NIDB) and grant access to the following bodies:

- 1) Corporate Affairs Commission
- 2) Central Bank of Nigeria
- 3) Economic and Financial Crimes Commission
- 4) Federal Inland Revenue Service
- 5) Federal Road Safety Corps
- 6) General Multi-Purpose Card
- 7) Harmonization and Integration Implementation Committee
- 8) Information and Communication Technology
- 9) ID Identity
- 10) Independent National Electoral Commission
- 11) Internet Protocol
- 12) International Standards Organization
- 13) Joint Tax Board
- 14) Ministry of Defense
- 15) Joint Admissions and Matriculations Board (JAMB)
- 16) Nigeria Communication Commission
- 17) National Economic Empowerment and Development Strategies
- 18) National Health Insurance Scheme
- 19) National Identity Database
- 20) National Identification Number

- 21) National Identity Management Commission
- 22) National Identity Management System
- 23) Nigeria Immigration Service
- 24) National Population Commission
- 25) Nigerian Police Force
- 26) Nigerian Prison Services
- 27) Office of the National Security Adviser
- 28) National Pensions Commission
- 29) Personally Identifiable Information
- 30) Person Identification Verification
- 31) Poly Vinyl Chloride
- 32) State Security Services
- 33) Structured Query Language
- 34) Universal Tax Identification Number
- 35) Universally Unique Identifier
- 36) Virtual Private Network
- 37) Wide Area Network
- 38) Extended Markup Language

The objective of the harmonization process was to provide an effective and efficient interoperability between the identity stakeholders and the National Identity Management System (NIMS) to ensure common standards of data capture, streamline the ways in which identity related matters are handled and to create a synergy on the use of the NIN. As intended, the strategy of the NIMS was designed to impact all aspects of Nigerian life; integrate and simplify

existing means of identification through creating a central National Identity Database; provide a platform for data sharing and exchange; and support a coordinated, technology-driven, resource optimizing, public service delivery scheme that is citizen orientated and fraud-free. The following government data management systems were integrated into the systems through the use of the NIN. Driver's License, International Passport, Integrated Personal and Payroll Information System (IPPIS), Tax Identification Number (TIN), Voter Identification Number (VIN), Criminal Records, Bank Verification Number (BVN), Mobile Telephone Number (MTN). The development of the Database is continuous⁵¹.

The following areas were covered by the 'Federal Guidelines for Harmonized Identity Management System' in the public sector:

- i. Enrollment into NIMS core database;
- ii. Registration into member specific database;
- iii. Issuance and use of the National Identification Number (NIN);
- iv. Card specifications;
- v. Card reader specifications;
- vi. 10-print scanner specifications;
- vii. Thumb-print scanner specifications;
- viii. Data format;
- ix. Identity authentication and verification process,
- x. Interoperability procedure and processes,
- xi. Network access and security specifications,
- xii. Connectivity specifications,
- xiii. Data processing and storage specifications,

- xiv. Rules enforceability procedures,
- xv. Penalty and cure procedures, and
- xvi. Procedures for revising the guidelines.

The overall policy objective of the harmonization and integration of federal government institution identification platforms is to promote an enabling legal, operational, technological and infrastructural environment for the sustainable development of NIMS, that utilizes a biometric-linked NIN to create a single, uniform, standard process for personal information, shared infrastructure for common services, as well as a common verification and authentication system, towards efficient deployment of resources and rendering of services across the economy.

On October 26, 2017, the National Identity Management Commission mandated the compulsory use of the NIN for transactions covered by sections 27 (1) (i) and 31 of the National Identity Management Commission Act, 2007 and all other powers enabling it in that behalf.

Federal Government also made it mandatory for government agencies listed in the First Schedule to these Regulations which offer services listed in sub-regulation (1) of this regulation to B 497 (Refer to NIMC Act, 23 of 2007).

The following Regulations were operationalized through the gazette to ensure the proper integration and harmonization and use of the National Identification Number.

1. Mandatory use of the National Identification Number Regulations, 2015
2. Mandatory Use of the National Identification Number Regulations, 2017
3. Nigeria Biometrics Standards Regulations, 2017
4. Access to Registered Information in the National Identity Database Regulations, 2017
5. Registration of Persons and Contents of the National Identity Database Regulations, 2017

The five (5) active applets were:

- Electronic Identity Information (e-ID)
- EMV Payment
- Verification – Match-on-Card
- Security – Electronic Public Key Infrastructure (ePKI)
- Travel – International Civil Aviation Organization (ICAO)

The remaining eight (8) applets were to be implemented in subsequent phases. These are:

- e-Health Application
- e-Pension Application
- e-Voting Application
- e-Taxation Application
- e-Drivers' License Application
- e-Transport Application
- e-SIM Application
- e-Insurance Application

The applets were designed to facilitate interactions of individuals with Government and with Institutions using the National e-ID Card to be able to access wide range of services. The card was smart and trendy with relevant security features to forestall fraudulent activities.

For Nigerian citizens the new card offered the safety, convenience and reliability of electronic payments, while providing a framework for improving the economic prospects of over 100 million Nigerians who previously had no access to financial services. The e-ID card forms a key

component of the Nigerian Identity Management System (NIMS), deployed by NIMC as part of its mandate to create, maintain and operate the country's first central National Identity Database and provide proof of identity to Nigerians 16 years and older for their financial transactions and benefits. Through the collaborative efforts of NIMC (the project lead), MasterCard (payments technology provider), Unified Payment Services Limited (payments processor), Cryptovision (Public Key Infrastructure and Trust Services Provider), and pilot issuing banks; Access Bank Plc, 13 million Nigerians were to gain access to this state-of-art financial service as part of the pilot program of the scheme. Using the card as a payment tool, Nigerians can deposit funds, receive social benefits, save, or engage in many other financial transactions that are facilitated by electronic payments with the extra security assurance that biometric verification provides. They can also pay for goods and services and withdraw cash at millions of merchants and ATMS that accept MasterCard payment cards in Nigeria and in more than 210 countries and territories globally. The multi-function chip card will host:

- MasterCard M/Chip4 payment application.
- Biometric identification
- MasterCard prepaid payment functionality
- Nine additional planned applications will expand the card's utility over time.
- Reloadable and top-up options to allow for incoming credits, whether government disbursements or private transactions.
- Cash out capability including POS and ATM transactions.

- P2P payments to extend the efficiency, security and transparency to all types of payment scenarios.
- Many other applications were provisioned to follow over time.

When used as a prepaid payment card, cardholders can deposit funds on the card, receive social benefits, pay for goods and services at any of the 35 million MasterCard acceptance locations globally, withdraw cash from all ATMs that accept MasterCard, and reload via the financial institution's customer web portal from anywhere in the world. The card supports a broad range of payments including P2P, bill payment, school fees, post-paid bills, subscriptions, taxes, and more. All of this convenience takes place in a secure environment enabled by the MasterCard EMV Chip and PIN standard.

Besides NIMC and MasterCard, other project partners mentioned above, additional issuing banks were to include the United Bank for Africa, Union Bank, Zenith, Skye Bank, Unity Bank, Stanbic IBTC, First Bank, Standard Chartered Bank, and Fidelity Bank Nigeria. Eventually, every bank in Nigeria was expected to be able to issue the card. The use of the MasterCard was designed to help drive the government's vision forward by showing how a flexible, open and experienced partner with a firm understanding of global payments, security, and the economics of payment systems can unite public and private sector partners to deliver value and promote economic growth at a national scale.

The National Identity Management e-Id through the MasterCard payment platform was also designed to complement the CBN cashless policy integrate more citizens into the Central Database through the enrollment and distribution of the cards as a holistic vision for creating

better accountability, preserving national security, and integrating a far more efficient way of managing payments across the economy, including between citizens and the government. For citizens, the value of The NID payment functionality would have been felt every day and would have continued to grow. The broader economic impact of the card would have been felt as previously unbanked and underbanked citizens were to gain access to the mainstream economy and the visibility of their assets allowing them to build a financial history and establish credit-worthiness with financial institutions. In turn, they would share in the opportunities for credit and economic growth enjoyed by wealthier segments of the population.

For the Government, the NID payment card would have provided an unprecedented level of visibility and inclusion as

- a. Financial inclusion would have been achieved through a safe, simple and smart payment instrument that makes mainstream financial services available to those who cannot readily participate due to lack of awareness, access, or trust in traditional financial service offerings.
- b. Transparency through the process would have improved GDP as fraud, grey economies and other forms of leakage would have been eliminated from the eco-system.
- c. The government would have demonstrated financial leadership as they would have leveraged cutting-edge technology to drive up internally generated revenue (IGR) and consumer confidence.
- d. Increased consumer insight would have enabled government and issuers to see where and how its citizens shop, allowing for better policy making on the part

of the government and opportunities to provide value-added services for issuers.

- e. Promoting and Growing Cross-Channel Acceptance. A critical part of the success of the NID card program would have been the widespread card acceptance. CBN and the government understood this and were actively enhancing acceptance throughout the country, with the goal of matching Brazil in number of POS/ATM locations by 2020, but the plans capitulated in the face of lack of funding for the scheme.⁵³

2.3.2. Age of Digital Identity Ecosystem

Globally, the improvements in identification technologies, the rapid proliferation of digital identification programs, and the growing number of services and transactions that depend on accurate identification have been very impressive in the last few years, Nigeria not being an exception introduced the use of National Identification Number (NIN). The use of the NIN in Nigeria changed the equation of how people are uniquely identified. With the federal government embracing digital ecosystem platforms for the registration of citizens and legal residents, rapid and more inclusiveness into the National Database ensued. Worldwide, e-identity platforms are reshaping the relationships between citizens and states and transforming the way development policies and programs are implemented. Thus, as the number of people with legal identity continues to grow, their inclusiveness to fully participate in the country's social, economic, and political life becomes more assured. With this development in the front burner, the use of e-identification platforms became a key developmental agenda for the Federal Government of Nigeria. Over the last decade, the provision of registration and identification services emerged as an important policy focus for federal and state governments resulting in the

establishment of the National Identity Management Commission (NIMC) in 2007 by the Federal Government and in later years to the adoption of ecosystem platforms for the registration of citizens more rapidly into the National Database. Identity ecosystem registration platforms being formally embraced by the federal government with private sector participation is providing a massive collection and registration of “legal identity for all,” pursuant of Target 16.9 of the Sustainable Development Goals (SDGs) 2030. Thus the use of e-identification platforms became fully operational throughout the country as the World Bank, Agence Francaise de Development (AFD) and European Union (EU) pledged the sum of \$433 million to boost the enrolment of more Nigerians into the National Identity Database⁵⁴.

The Ecosystem enrollment process is a game-changer in the e-Id Management System in Nigeria. The process involves the participation of other public sector functional identification agencies with the private sector service providers described as partners to rapidly populate the National Identity Database (NIDB) with the enrollment of citizens and legal residents. National Identity Management Commission being the core-service provider legally empowered by law to create, regulate and populate the National Identity Database (NIDB) plays a crucial role with the National Population Commission (NPopC) as the providers of foundational Identification in enrolling citizens into the National Identity Database. While the functional Identification agencies and other private sector companies assist in the generation of data to populate the National Identity Database (NIDB). The fundamental responsibility of the foundational Identification Systems repository is to help proof the individual identity of citizens and legal residents; “who you are”, while the functional Identification helps to explain “whether you are eligible for a specific benefit”. Two government agencies are involved in Nigeria for foundational identification.

- Nigeria Identity Management Commission (NIMC): the custodian of the centralized National Identity Management System and database as recognized by Nigerian law
- Nigeria Population Commission (NPopC): the lead agency charged, by law, with registering births and deaths in Nigeria.

Several government agencies involved with functional identification include the following.

- Central Bank of Nigeria (CBN): operates a registry of people who use banking services.
- Independent National Election Commission (INEC): operates a registry of people who are eligible to vote.
- Nigeria Communications Commission (NCC): operates a registry of mobile phone users.
- National Health Insurance Scheme (NHIS): operates a registry of people who subscribe to health insurance.
- Federal Inland Revenue Service (FIRS): operates a registry of people for taxation.
- Joint Tax Board (Customs): operates a registry of people for excise and custom duties.
- Nigeria Pensions Commission (PENCOM): operates a registry of people entitled to pension by the FGN.
- National Social Safety Net Project (NASSP): operates a registry of poor and vulnerable people in Nigeria.
- Federal Ministry of Agriculture and Rural Development (FMARD): operates a registry of farmers entitled to agriculture benefits from the FGN.

Security agencies: Security agencies rely on identification to carry out security services in Nigeria

- Ministry of Defense (MoD): responsible for national security of Nigeria.
- National Immigration Service (NIS): operates a registry of people with a valid passport or travel document.
- Federal Road Safety Corps (FRSC): operates a registry of drivers.
- Nigeria Prison Service (NPS): operates a registry of prisoners, both past and present.
- Nigeria Police Force (NPF): operates a registry of people in conflict with the law.

State agencies: Government agencies at the State level, and within Local Government Agency (LGA) and wards, rely on identification to offer services to people and to carry out State-level government functions.

Private sector: Firms in the private sector rely on ID to offer services to consumers.

- Financial institutions
- Telecommunications service providers
- Healthcare service providers (including health insurance companies)

Regional bodies: Economic Community of West African States (ECOWAS) is promoting the regional use of identification for greater regional integration in West Africa.

With Digital Identity, e-Id and the deployment of the ecosystem across the country with several approved ecosystem partners, Identification has become easy and more secure. Previously, one

could only identify oneself or another person through paper certificate, then with an ID card, but today, the tide has changed dramatically, one can identify anyone even more accurately using their digitally captured biometric (fingerprints, retina scans, facial capture, height) and demographic (age, address, gender.) details from anywhere one is in the world using identification numbers, verified online shopping IDs, electronic chips, mobile devices and even trusted social media profiles⁵⁵. It is important to note that use of digital identity (or digital versions of any other product or service for that matter) does not necessarily mean the older ways of doing things have been rendered totally unusable. Indeed, in some cases you may still need to use your paper Birth Certificate for instance. However, in today's world, a vast majority of secure transactions are being carried out digitally (even when you present your paper certificate for verification, details from it will still have to be keyed into a computer and transferred or stored digitally). Notwithstanding, the ease of the transaction process, security and privacy protection are pivotal in the use of Digital Identity.

The benefits of Digital Identity include but not limited to the following;

- Providing easy identification of individuals and entities in the Digital Age of electronic/mobile transactions and communications.
- Multiple means of providing a single, unique identification over a vast selection of media worldwide.
- Enabling a boost to the Nigerian economy by providing access to online global commerce (Paypal, Amazon, eBay) currently inaccessible to many people in Nigeria and preventing online payments into the country due to a lack of trusted, verified identities required by online companies.

- Convenience – rather than carry a whole host of documents and cards, providing your NIN alone generates your required details on the systems of authorized vendors

Nevertheless, the efficient management of the ecosystem platforms being the new focus of government should be done in a manner that avoids the flip side of the ecosystem foreshadowing the main goals of the approach. Accordingly, Jaquet-Chiffelle a professor of digital investigation and identification at Switzerland's University of Lausanne warned that though the adoption of the ecosystem is increasingly instrumental to achieving many other development goals by creating opportunities to enhance sustainable development through e-commerce, e-communication, e-government and e-health amongst other sectors, care must be taken to avoid the flip side, because digital identities can heighten money laundering, create new criminal opportunities and endanger democratic processes. He maintained that the burgeoning digital footprints also come with risks such as negative profiling, large personal data leaks, identity theft and illegal creation of digital identities.

Therefore, "It is important to think about all the potential benefits and risks when developing systems that manage identities". This relates to the first aspect of security in identity management, which deals with foreshadowing the activities of hackers. Hackers have breached organizations in the defense industry and other sensitive sectors that require that care be taken to booster identity management platforms to secure the safety of data of Nigerians. Hackers have also stolen passwords from some targeted organizations with a goal of maintaining long-term access to those networks demanding ransom. This requires the need to develop strong cyber security firms to develop robust software to counter the activities of these hackers. Imagine a situation where the National Database is hacked, it will be a terrible national calamity as millions of citizens could be at the mercy of the hacker⁵⁶.

To deal with the general protection of personal data of citizens, the National Identity Management Commission in collaboration with Nigeria Communication Commission has taken proactive steps to craft the Data Protection Bill 2020, which is designed to establish and provide an efficient regulatory framework for the protection of personal data, regulate the processing of information relating to data subjects, and to safeguard people's fundamental rights and freedoms as guaranteed under the Constitution of the Federal Republic of Nigeria, 1999. Amongst others the Law provides for the following;

- (a) promoting a code of practice that ensures that the privacy and protection of subject's data is accomplished without unduly undermining the legitimate interests of commercial organizations and government security agencies for such personal data;
- (b) minimizing the harmful effect of personal data misuse or abuse on data subjects and other victims;
- (c) establishing an impartial, independent and effective regulatory authority that will coordinate data protection and privacy issues and superintend over data controllers and data processors within the private and public sectors;
- (d) ensuring that personal data is processed in a transparent, fair, and lawful manner, in accordance with the data protection principles stipulated in this Act or any other extant legislation.
- (e) Provisions for the collection, storage, processing and use of personal data relating to persons residing in Nigeria and persons of Nigerian nationality, by automated and non-automated means, irrespective of residence and in particular requiring that

personal data is processed in a transparent, fair and lawful manner, on the basis of an individual's consent.⁵⁷

Table 2.15 NIMC New Improved NIN Slip



The new integrated ecosystem would create a common electronic platform for interacting and transacting electronically across government agencies and throughout the economy. By adopting the new integrated ecosystem approach to massively enroll citizens into the National Identity Database, a common electronic platform for interacting and transacting electronically across government agencies and throughout the economy was unleashed, which will impact planning, management, implementation and effective evaluation of socio-economic programs and benefits to the citizens especially the underserved less privileged members of society consisting mainly of women and children, the elderly and handicapped. This development will directly or indirectly affect the drive towards the accomplishment of some of the sustainable development goals. With the new emphasis on e-Id, over 60 million Nigerians and legal residents have been captured into the National Database as of July 2021.

The improved NIN Slip bearing a QR code and Mobile ID are valid means of identification with the caveat that each MUST be verified using an approved resource such as the NIMC Mobile ID app.

The current NIN Slip and National e-ID also remain VALID means of identification.

We have been discussing the processes of Identity Management in Nigeria which could be surmised under the following; enrolling, deduplication, harmonization, verification and authentication of access into a National Identity Database and the management of such access to afford citizens and legal residents the opportunity to benefit from state resources and engender sustainable development for all registered and captured persons. Generally speaking, the deployment of a proper identity management infrastructure in any society helps to provide robust solutions to the planning, management, effective and efficient evaluation of proposed and administered developmental projects to support good governance and sustainable development. Therefore, the development and implementation of a well-defined identity management infrastructure in Nigeria will no doubt provide a credible platform for all identity utilization agencies to leverage on for the dispensation of socio-economic benefits to citizens and legal foreign residents living in the country. The National Identity Management System took a new posture to be more inclusive, adopt a more effective design that is unique, secure and accurate and applying strict governance principles to protect against personal data information disclosure, cybersecurity, enforcement since being integrated, supervised and oversight by the Ministry of Communications and Digital Economy.

Consequently, reiterating the importance of e-identity infrastructure platform for sustainable development, the Vice President Professor Yemi Osinbajo posits that digital infrastructure is

pivotal to security and socio-economic development transformation of Nigeria if stakeholders could effectively leverage on e-identity platforms to actualize the attainment of sustainable development and good governance. He maintained that the roadmap for sustainable development is a technological platform for inclusion, considering the fact that millions of Nigerians do not have access to basic means of identification. Thus, the current APC Administration focuses on an ecosystem approach to ensuring that every Nigerian has a unique identity within the next 3 to 5 years⁵⁸.

Identity Management in Nigeria has evolved from the multiplicity of identity platforms by various government agencies, such as Driver's License, International Passport, Civic Registration at birth by the National Population Commission, to Bank Verification Number (BVN), and National Identification Number (NIN), with the issuance of Multipurpose Card supported by MasterCard and the newly enhanced and improved e-identity card (digital identification) through the collaboration of the Private Sector Partners using the ecosystem enrolment platforms with the NIN as the unique identifier. To facilitate the e-identification of Nigerians within a short period, the Minister of Communications and Digital Economy, Dr. Isa Ali Ibrahim (Pantami) emphasized the need to adopt the concept of digital identification to replace the National Identity Multipurpose Card for now because of the huge cost implications associated with the issuance of the Multipurpose Card. Digital identification scheme focuses on the use of technologies to improve access to government information and services that were only available in physical formats⁵⁹. The use of physical identification format which focused on card issuance, denied about 1.1 billion people globally, of formal identity, thereby excluding 50% of the world's population from direct access to social security safety nets, complicating and limiting their access to public services (ISSA 2016). By November 2015, only about 6 – 7 million

Nigerians were issued with the Multipurpose ID Card supported with MasterCard payment platform⁶⁰. From the available information from NIMC Dashboard on enrollment, as at December 12, 2021 currently stand at some 70.87 million Nigerians were enrolled into the National Identity Database using the ecosystem approach.

With the e-identity management platforms through technology-driven efficiency and effectiveness, a huge opportunity opened up to emerging economies and developing nations to provide solutions to a large number of the world's population previously excluded from access to government socio-economic services. Being in the range of developing countries, Nigeria has placed very strong emphasis on transforming the relationship between government and citizens, businesses and other arms of government agencies (local, state and federal ministries) primarily by adopting e-governance, a digital governance system with the use of information technologies (such as Wide Area Networks, the internet, software applications, cloud infrastructure and mobile computing) to relate more with citizens and improve their access to services and information. Without doubt, Nigeria being the fastest growing information and communication technology market in Africa, particularly financial technology (Fintech) cannot continue to lag behind and be ranked low in the provision of e-governance services to its citizens, a development which must change for the better.

As the penetration of Information and Communications Technology, ICT, changed the way humans interact within society, which is also central to public sector operations and administration in many countries, it is imperative that Nigeria adopts digital innovation and fall in line with the available technology to beef up activities relevant to government-to-government, government-to-companies, government-to-organizations and government-to-citizens through e-governance platforms. With a high population and a projected forecast of 400 million Nigerians

by the year 2050, using the reliable project of Worldometer, it is apparent that digital application in national planning is key to Nigeria's push to meet its sustainable development agenda. The enrollment of Nigerian citizens into the National Identity Database has remained a challenge for a number of reasons, which shall be explored in the structure interview with operators of the scheme trying to establish a robust national identity management system for the country.

2.3.3. Governance Issues and Challenges in Identity Management and Sustainable Development in Nigeria

Principles 8 – 10 deals with the governance issues in Identity Management for Sustainable Development towards a digital age. The study shall examine through the structured interview how the operators and government officials are able to adapt to the six capacities which nations must acquire to achieving a successful sustainable development program. These six capacities include: the capacity to measure progress, capacity to govern cooperatively, capacity to link knowledge with action, capacity to transform development pathways, capacity to adapt to shocks and capacity to promote equity.

Identity Management in Sustainable Development is typically directed at SDG Target 16.9 provide universal legal identity, which must transform progress in the other Sustainable Development Goals and Targets specified below:

Goal 1: No Poverty

Goal 2: Zero Hunger

Goal 3: Good Health and Well-being

Goal 4: Quality Education

Goal 5: Gender Equality

Goal 6: Clean Water and Sanitation

Goal 7: Affordable and Clean Energy

Goal 8: Decent Work and Economic Growth

Goal 9: Industry, Innovation and Infrastructure

Goal 10: Reducing Inequality

Goal 11: Sustainable Cities and Communities

Goal 12: Responsible Consumption and Production

Goal 13: Climate Action

Goal 14: Life below Water

Goal 15: Life on Land

Goal 16: Peace, Justice and Strong Institutions

Goal 17: Partnerships for the Goals

The logic in this equation of Identity Management being pivotal to the achievement of other Sustainable Development Goals and Targets is based on the fact that Governments and Private Sector Operatives can only plan effectively with the total knowledge of the number of citizens and legal residents within their territories without which advancing other goals and targets through well designed programs is impossible especially with the slogan ‘no one left behind’. This is so because with the personal data of citizens and legal residents gathered, governments will know the age, occupation, gender, economic grouping, location and other vital statistics for

planning to enable them design appropriate programs to meet the needs of citizens and legal residents which dovetails the advancement of the Sustainable Development Goals and its effects on the five pillars of Sustainable Development; People, Planet, Prosperity, Partnership and Peace. As it affects Principle 8, safeguarding data privacy, security and user rights through a comprehensive legal and regulatory framework, the National Information Technology Development Agency (NITDA) recently approved and issued its Implementation Framework for the Nigeria Data Protection regulation (the Framework). The Framework builds on the Nigeria Data Protection Regulation 2019 (NDPR) to ensure a tailored implementation of the data protection regime in Nigeria. It serves as a guide to data controllers and administrators/processors to understand the standards required for compliance within their organizations. The Framework is to be read in conjunction with the NDPR and does not supersede the NDPR.

2.3.4. The Data Protection Bill 2020

The main objective of the Bill is to provide a structure for the protection of personal data and to regulate the processing of information relating to all individuals, irrespective of their nationality. It also seeks to protect the fundamental rights to privacy and freedoms as enshrined in the constitution. The Bill is still undergoing review and before it is promulgation into law, it may be further amended. Some of the potential key changes in the Bill are⁶¹:

- **Annual Data Audit:** The Filing of an annual data audit report is now mandatory irrespective of the number of data subjects processed. The current position requires the filing of an annual report only if the number of data subjects' personal data processed is

2000 or more. The deadline for annual filings has been changed from 15 March of every year to June 30th

- **Sensitive personal data:** Sensitive personal data now includes philosophical beliefs; genetic data; biometric data, a natural person's sex life and the personal data of a child who is under the age of 16 years.
- **The Data Protection Commission (the Commission):** The creation of a commission to regulate and oversee data protection issues in Nigeria.
- **Transfer of Data:** Transfer will be supervised by the Data Protection Commission and its consent will still be required even after the Data Subject has consented to the transfer.
- **Data Breach Requirements:** Data controllers are mandated to notify data subjects of a data breach within 48 hours of such occurrence.

The NDPR is the current principal legislation where data protection in Nigeria is concerned and it remains to be seen whether it will be repealed or have a limited scope/application.

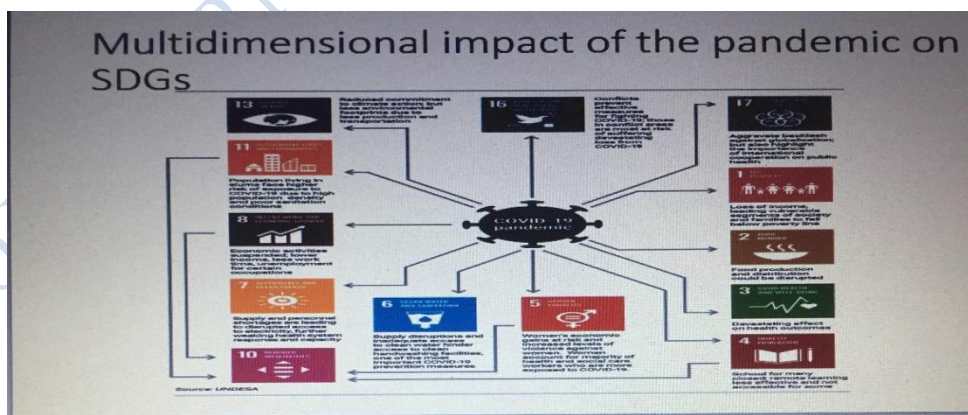
Despite the desire to enact a specific data protection Act, Nigeria has not enacted a comprehensive data privacy and protection legislation and the political will to follow through by the National Assembly is lacking. Up to date, there has been no drastic enforcement and penalties meted to defaulters who failed to comply with the mandatory use of NIN based on several legislations and policies as indicated below

1. Mandatory use of the National Identification Number Regulations, 2015
2. Mandatory Use of the National Identification Number Regulations, 2017
3. Nigeria Biometrics Standards Regulations, 2017

4. Access to Registered Information in the National Identity Database Regulations, 2017
5. Registration of Persons and Contents of the National Identity Database Regulations, 2017
6. Data Protection Bill 2010 / 2020 still pending
7. National Digital Identity Policy for SIM Card Registration 2021 (SIM-LINKAGE) enforcement date posted and still pending

Before the Covid-19 crisis struck, estimated costing for implementing the 2030 Agenda and its Sustainable Development Goals (SDGs) was put at between USD 50 trillion and USD 70 trillion globally, over a 10-year period (2020-2030). Although traditional financing approaches, such as Office of Development Assistance (ODA) and domestic resource mobilization, mentioned essentially that a vast amount of additional funding is needed to finance the 2030 Agenda. Covid-19 seems to have disproportionately affected the advancement of Sustainable Development in many dimension as illustrated by the diagram below⁶².

Table 2.16 Multidimensional Impact of Covid-19 Pandemic on SDGs



Source: UN DESA on Twitter. How is #COVID19 pandemic affecting our chances of achieving #SDG.

Nigeria has not been able to weather the storm infected on the economy by the challenges of covid-19 and aftermath variants, thereby affecting the capacity to advance SDG targets, despite the inclusive numbers achieved by digital ID systems.

2. 3.5: Theoretical Framework

The theoretical framework for this research was used to provide the basis for assessing the compliance of the Identity Management Agencies to the United Nations Principles on Identification for Sustainable Development, as well as using the six fundamental capacities for nations to acquire for the successful advancement of sustainable development goals. Other assessment tools used include the theories of e-governance models and the contemporary empirical review of scholars on e-identity, digitalization, cybersecurity, ecosystems and the next-level risks involved in managing identity and the advancement of sustainable development. These assessments enabled us to justify the purpose of this research and conclusions.

2.3.5.1. United Nations Pillars on Identification for Sustainable Development

To ensure that stakeholders and private partners of ecosystem registration comply with standards. These guidelines make it mandatory for foundational identity management agencies to adhere to the three pillars on identification for sustainable development based on 10 principles. Under this framework this study examined what the Federal Government of Nigeria did through its foundational agency; National Identity Management Commission (NIMC) and National Population Commission to adhere to the 10 principles designated under the 3 pillars as summarized in the diagram below and the comprehensive explanation following⁶³.

Table 2.17 UN Principles on Identification for Sustainable Development

PILLARS	PRINCIPLES
INCLUSION: UNIVERSAL COVERAGE AND ACCESSIBILITY	1. Ensuring universal coverage for individuals from birth to death, free from discrimination. 2. Removing barriers to access and usage and disparities in the availability of information and technology.
DESIGN: ROBUST, SECURE, RESPONSIVE AND SUSTAINABLE	3. Establishing a robust—unique, secure, and accurate—identity. 4. Creating a platform that is interoperable and responsive to the needs of various users. 5. Using open standards and ensuring vendor and technology neutrality. 6. Protecting user privacy and control through system design 7. Planning for financial and operational sustainability without compromising accessibility
GOVERNANCE: BUILDING TRUST BY PROTECTING PRIVACY AND USER RIGHTS	8. Safeguarding data privacy, security, and user rights through a comprehensive legal and regulatory framework. 9. Establishing clear institutional mandates and accountability. 10. Enforcing legal and trust frameworks through independent oversight and adjudication of grievances.

Source: [Principles on Identification for Sustainable Development](#)

Source: Principle on Identification for Sustainable Development

Pillar 1: Inclusion

The first two principles are intended to ensure that no one is left behind by any foundational ID systems, in support of SDG 16.9 by 2030 to provide legal identity for all, including birth registration.

Principle 1.

Ensuring universal coverage for individuals from birth to death, free from discrimination. This universal coverage *principle* requires countries to fulfill their obligations to provide legal identification to all residents not just citizens from birth to death, as set out in international law

and conventions and their own legislative frameworks. It includes the commitment to universal birth registration for those born within the territory or jurisdiction of a nation and in appropriate circumstances, linking civil registration and ID systems, which is an essential for ensuring the accuracy and sustainability of ID systems. It also abhors the ID systems from discrimination, both in terms of who has access and how they are used. This means that foundational operators of ID systems should identify and mitigate legal, procedural, and social barriers to enroll in and use ID systems to vulnerable groups who may be at risk of exclusion for cultural, political or other reasons (such as women and gender minorities, children, rural populations, ethnic minorities, linguistic and religious groups, persons with disabilities, migrants, the forcibly displaced, and stateless persons). Fundamentally, the principle provides that ID systems and identity data should not be used as a tool for discrimination, persecution, or to infringe on individual or collective rights.

Principle 2. Removing barriers to access and usage and disparities in the availability of information and technology

To ensure universality, this *principle* calls for the elimination of barriers to access and use of ID. This includes removing or reducing direct and indirect cost for identification. Civil registration and first birth and death certificates should be free of charge as well as the initial issue of any identity credential that is mandatory *de jure* or *de facto* to possess or to access basic rights and services. If fees are charged for certain additional services (such as reissuance of lost credentials), rates should be reasonable, proportional to costs incurred, and transparent to the public. Consideration should be given to subsidizing or waiving application or service fees for poor and vulnerable persons. The indirect costs of obtaining identification including fees for supporting documents, travel costs, and cumbersome administrative procedures should also be minimized.

For example, ID-related services should be available online and should routinely visit remote communities. Furthermore, practitioners should mitigate information disparities and the digital divide by working to ensure user literacy regarding ID systems, fostering a culture of understanding and trust, and reducing information asymmetries that might prevent individuals from accessing identification-related services or benefits. With the rise of digital systems, no one should be denied identification or associated services because they lack mobile or internet connectivity or digital literacy. Stakeholders should work together to ensure both online and offline infrastructure can be extended to provide “last-mile” access and connectivity, particularly for those in rural and remote areas.

Pillar 2: Design: In addition to providing universal coverage, ID systems should be robust to fraud and error, useful for a variety of stakeholders, and sustainable over time. ID system design must also protect user privacy and adopt open standards to facilitate innovation, interoperability, and vendor and technology neutrality.

Principle 3. Establishing a robust, unique, secure and accurate identity. This *principle* highlights the need for accurate, up-to-date information, which is essential for the trustworthiness of any identification database and credentials used for authentication. It implores foundational ID systems to provide a unique identity that is verifiable over the course of a person’s life, from birth to death for instance, within a given foundational ID system, each person should have only one identity, and no two people should have the same identity. In addition, ID systems must have safeguards against tampering (alteration or other unauthorized changes to data or credentials), identity theft, data theft and misuse, cybercrime and other threats occurring throughout the identity lifecycle.

Principle 4: Creating a platform that is interoperable and responsive to the needs of various users. This 4th Principle highlights the need for identification and authentication services to be flexible, scalable, and meet the needs and concerns of people (end-users) and relying parties. To ensure that identity-related systems and services meet specific user needs, practitioners should engage the public and important stakeholders throughout planning and implementation. It emphasizes the fact that the value of ID systems to relying parties should be highly dependent on their interoperability with multiple entities, both within a country and across borders. Domestically, this includes the ability of different databases or registries for instance national ID and civil registration systems to communicate with each other, exchange data, and facilitate identity queries in a timely and low-cost manner such as open APIs subject to appropriate privacy and security safeguards. It also includes interoperability across borders to facilitate mutual recognition of physical or digital IDs issued by one country in other countries, which can increase trade and enable safe and orderly migration.

Principle 5: Using open standard and ensuring vendor and technology neutrality. This 5th principle further emphasizes the need for vendor and technology neutrality to increase flexibility and avoid system design that is not fit for purpose or suitable to meet policy and development objectives. This requires robust procurement guidelines to facilitate competition and innovation and prevent possible technology and vendor “lock-in,” which can increase costs and reduce flexibility to accommodate changes over time. In addition, open design principles enable market-based competition and innovation. They are essential for greater efficiency and improved functionality of identification systems, and for interoperability. Similarly, open APIs also support efficient data exchange and portability by ensuring that a component of the ID system can be replaced with minimal disruption.

Principle 6: Protecting user privacy and control through system design. In addition to architecture that is responsive and flexible, this 6th principle emphasizes the need the protection of people's privacy and control over their data through system design. Designing with people's privacy in mind means that no action should be required on the part of the individual to protect his or her personal data. Information should be protected from improper and unauthorized use by default, through both technical standards and preventative business practices. These measures should be complemented by a strong legal framework (as emphasized in Principle 8). For example, data collected and used for identification and authentication should be fit for purpose, proportional to the use case, and managed in accordance with global norms for data protection. Authentication protocols should only provide "yes or no" confirmation of a claimed identity or if mandated by law such as Anti-Money Laundering regulations (AML) related to Customer Due Diligence (CDD) or Know Your Customer (KYC) only disclose the minimal data necessary for the transaction. The method of authentication should reflect an assessment of the level of risk in the transactions and can be based on recognized international standards and frameworks for levels of assurance. Credentials and numbering systems should not unnecessarily contain or disclose sensitive personal information such as using randomized numbers without any logic.

Principle 7: Planning for financial and operational sustainability without compromising accessibility. This 7th principle recognizes the importance of designing systems that are financially and operationally sustainable while still maintaining accessibility for people and relying parties. This should involve different business models including reasonable and appropriate service fees for identity verification, offering enhanced or expedited services to users, carefully designed and managed public-private partnerships (PPPs), recuperating costs through efficiency and productivity gains and reduced leakages, and other funding sources. It also

includes potential linkages between civil registration and ID systems, which should ensure the integrity of the system over time without the need for costly re-registration efforts by notifying the system of life events such as deaths.

Pillar 3: Governance: These final group of principles 8 – 10 addresses how ID systems should be governed to protect user privacy and rights, system security, and clear accountability and oversight.

Principle 8: Safeguarding data privacy, security and user rights through a comprehensive legal and regulatory framework. This 8th *principle* sets out the requirements for a comprehensive legal framework: it emphasizes the need that ID systems should be underpinned by policies, laws and regulations that promote trust in the system, ensure data privacy and security, mitigate abuse such as unauthorized surveillance in violation of due process, and ensure provider accountability. This typically includes an enabling law and regulations for the ID system itself as well as laws and regulations on data protection, digital or e-government, electronic transactions and commerce, AML, civil registration, cyber security and cybercrime, functional ID systems, and freedom of information, among others. The enabling law and regulations for an ID system should clearly describe the purpose of the ID system, the ID system's components, roles and responsibilities of different stakeholders, how and what data is to be collected, liability and recourse for ID holders and relying parties, the circumstances in which data can be shared, correction of inaccurate data attributes, and how inclusion and non-discrimination will be maintained. Laws and regulations on data protection and privacy should include oversight from an independent body such as a national privacy commission with appropriate powers and should protect ID holders against inappropriate access and use of their data by third parties for commercial surveillance or profiling without informed consent or lawful purpose. At the same

time, these frameworks should not stifle competition, innovation, or investment and can include regulatory and self-regulatory features. In addition, the ID-related laws, regulations, and policies should enable people with genuine choice and control over the use of their data, including the ability to selectively disclose the attributes that they want. Users should be given simple means to have inaccurate data corrected free of charge and to know what data is being held about them. Personal information should not be used for secondary, unconnected purposes without the user's informed consent, unless otherwise required under the law. ID providers should be transparent about identity management, develop appropriate resources to raise users' awareness of how their data will be used, and provide them with tools to manage their privacy. ID providers should ensure that the initial process to correct errors is administrative rather than judicial in order to increase speed of resolution and reduce costs. Data sharing arrangements should also be transparent, fully documented, and serve the best or vital interests of the individual(s) concerned.

Principle 9: Establishing clear institutional mandates and accountability. This 9th principle highlights the need for institutional mandates and accountability in the governance of ID systems. Ecosystem-wide trust frameworks must establish and regulate governance arrangements for ID systems. This should include specifying the terms and conditions governing the institutional relations among participating parties, so that the rights and responsibilities of each are clear to all. There should be clear accountability and transparency around the roles and responsibilities of identification system providers.

Principle 10: Enforcing legal and trust framework through independent oversight and adjustment of grievances. Lastly, the 10th principle emphasizes the fact that the ID system should include clear arrangements for the oversight of all specified legal and regulatory requirements. The use of ID systems should be independently monitored for efficiency,

transparency, exclusion, misuse to ensure that all stakeholders appropriately use identification systems to fulfill their intended purposes, monitor and respond to potential data breaches, and receive individual complaints or concerns regarding the processing of personal data. Furthermore, disputes regarding identification and the use of personal data that are not satisfactorily resolved by the providers for example, refusal to register a person or to correct data, or an unfavorable determination of a person's legal status should be subject to rapid and low-cost review by independent administrative and judicial authorities with authority to provide suitable redress.

Planning Roadmap

To ensure that ID systems meet national goals and reflect local needs and constraints, the planning roadmap for sustainable Identity Systems emphasizes the need that practitioners should adopt an outcome-based and context-specific approach to making policy and design decisions⁵⁴.

Specifically, this should include an analysis of the following:

- Status quo – What ID systems are currently operating within the country and what are their strengths and weaknesses?
- Vision – What are the main goals of creating a new (or improving and old) ID system and how will it benefit people, the government and the private sector?
- Constraints – what are the anticipated obstacles or challenges to the planned ID system?
- Costs and benefits – what are the anticipated financial impacts of the planned ID system?
- Risk – what are the potential risks of planned ID systems related to privacy, security and exclusion?
- Legal framework ID systems must be built on a foundation of trust and accountability between government agencies, individuals, international organizations, and the private sector, both within countries and across borders. A cornerstone of this foundation are the

laws, codes, regulations, and practices that govern and support the ID system— such as the “legal framework.”⁶⁴

Registration and Coverage Guidelines

Registration including who is eligible to enroll, how people are enrolled, and the technology identity proofing process is a critical component of ID systems. Few projects compare in terms of scale and complexity to a foundational ID system’s initial mass registration. It requires contact with every (or nearly every) person in a country and the collection of sensitive data. Any negative experiences for example, long queues, denial of registration, personal data being lost or stolen can quickly turn public and media sentiment against an ID system and undermine a significant investment. Conversely, a successful mass registration drive can also generate a positive feeling of national mobilization. Likewise, the speed that universal or high coverage can be reached determines when use cases can go live and therefore when the benefits of an ID system are realized or perceived. It is therefore important for countries to take time to carefully and comprehensively plan their initial mass registration. Finally, the sustainability of an ID system also depends on how it continuously enrolls people as they are born in or migrate to the country⁶⁵.

Fundamentally, foundational ID systems should aim for universal access for the entire resident population (and potentially nationals living abroad) and for a user-friendly registration process that allows for quality identity proofing. Implications for registration include the following:

- Who is eligible to enroll in the system has direct implications for inclusion and the system’s ability to meet goals such as legal identity for all (SDG target 16.9) and the

needs of particular use cases such as providing universal health care, KYC for financial account opening or SIM card registration, voting.

- Registration strategies including where, when, and how people apply for an ID can also create or remove barriers to participation in the ID system, impacting coverage and people's overall experiences with and trust in the system.
- Identity proofing will impact the overall accuracy and trustworthiness of the identities (the potential level of assurance they will provide during authentication), as well as the cost of the system.
- **Eligibility.** Who can access the ID system, including nationals and non-nationals, and beginning at what age.
- **Registration strategy.** The broad approach for data collection for the initial mass registration and continuous registration.
- **Registration operations.** The process, staff and equipment for carrying out registration.
- **Identity proofing.** How data will be validated and identities DE duplicated.

These activities are highly contextual, and practitioners will need to carefully weigh multiple factors when designing registration requirements and processes.

2.3.5.2. E-governance Progress Measurement Model

The United Nations (UN) in one of its E-governance Surveys at the turn of the millennium developed five stages for measuring progress towards e-governance made by public organizations. The U.N believes that for every e-governance framework and strategy to develop and be effective, it must follow the under mentioned stages⁶⁶.

1. Emerging Web Presence – One or a few web sites offering static information.

2. Enhanced Web Presence – Growing numbers of web pages offering dynamic information.

3. Interactive Web Presence – Exchanges between users and governments (electronic forms).

4. Transactional Web Presence – Services such as purchases (licenses) and payments (taxes).

5. Fully Integrated Web Presence: Combination of information, exchanges and services. The model presents that organizations pass through these sequential stages to make it to the peak of e-governance which translates to total effectiveness of the system. However, critics have it that although some public organizations pass through these stages, they often do so not in a sequence. For instance, from emerging web presence, an organization may move to interactive web presence before enhancing web presence.

2.3.5.3. Six Capacities to Acquire by Nations for the Successful Advancement of Sustainable Development Goals. (SDGs)

For the advancement of sustainable development, nations have to acquire the following six capacities. (a) the capacity to measure progress (b) the capacity to govern cooperatively (c) capacity to link knowledge with action (d) capacity to link knowledge with action (e) capacity to adapt to shocks (f) the capacity to promote equity⁶⁷.

The Capacity to Measure Progress

This is based on two dimensions firstly, the commitment to international agreements, which may be on track or off track and secondly having mixed progress. (1) Being on-track means meeting the targets as planned. (2) Being off-track means slipping backward or stagnating and (3) the third; mixed progress means that due to heterogeneity, meaning that it is difficult to evaluate progress as a whole. In Africa, there is generally a huge difficulty in measuring or addressing the

progress of African economies to meeting the developmental goals due to poor statistical data and how to improve the data needed for economic governance. This has been attributed mostly to the poorly managed identity management systems in Africa, which is the major subject of this research. Secondly, the measurement of the aggregate indicators of sustainable development such as HDI Human Development Index, GDP growth, is highly unreliable due to high number of unbanked and informal businesses in Africa⁶⁸.

The Capacity to Govern Cooperatively

This means the development of an association of people united voluntarily towards meeting their common economic, social and cultural needs and aspirations through jointly owned and democratically controlled enterprises. This creates a situation where the membership of the cooperatives is meant to be voluntary and open. In addition to having democratic membership control, economic participation, autonomy and independence, where education, training and information, cooperation among cooperatives and concern for community are primarily important⁶⁹.

Capacity to Link Knowledge with Action

Knowledge in this sense is research-based, which has a wider category than scientific knowledge because it includes all areas of systematic inquiry that are justified by their adherence to a research process as defined by peers. As such, it includes knowledge generated from within both the natural and social sciences as well as areas that need not be regarded as scientific, for example, history or philosophy. It accommodates research oriented towards practice rather than theory. The action means doing something that has physical or behavioral repercussions, which include purposefully changing practices and environments as well as implementing or changing

regulations, policies, and institutions. For example, the classic definition of sustainable development is described as development “that meets the present without compromising the ability of future generations to meet their own needs”⁷⁰. However, many scholars posit that sustainable development is ambiguous because it can be invoked to meet a wide variety of goals, while others argued that it is an oxymoron, a convenient political device that has stifled robust political debate over differing ethical and political stances with respect to global inequalities. Nevertheless, the position of the United Nations is that sustainable development is the process of ensuring that all people can achieve their aspirations while maintaining the critical ecological and biophysical conditions that are essential to our collective survival. This analytical approach is global in scale, addressing low-income country issues as well as high-income country issues and the interactions between them when appropriate and regards sustainable development as including issues of well-being, health, aesthetics, livelihoods and environmental management, which will form the basis of action⁷¹.

Capacity to Transform Development Pathways-

This involves three approaches linked to solving two fundamental challenges of eradication hunger and halting biodiversity loss and universal access to modern energy and mitigating climate change by embracing global technology, decentralized solutions and lifestyle changes⁷².

Capacity to Adapt to Shocks

This capacity involves the process of building economies and systems to ensure resilience to shocks. There are various shocks that have devastating impacts on vulnerable groups such as women, children, persons with disabilities, and the elderly. These shocks include global financial shocks resulting from banking crises, speculative bubble collapse, currency exchange rate crises

and sovereign debt defaults. All these challenges result from the integration in financial systems and cross-border transmissions. Other shocks include price shocks such as commodity prices arising from variable harvests based on fluctuating weather conditions, decreasing inventory levels, in accessibility of new natural resources supplies, increasing demands for biofuels, reducing agricultural output for food, increasing demands for commodities from fast growing developing countries. Environmental shocks from climate change, flooding and conflict shocks. Therefore, governance systems and economies should be designed for resilience to accommodate multiple shocks through economic diversification and adopting circular economy. Circular economy involves the giving of incentives to reusing rather than scraping and then extracting new resources⁷³.

Another way of building resilience is by building Infrastructure both hard infrastructure and soft. Hard infrastructure such as road networks and housing, soft infrastructure such as strong institutions, regulations and legislation. Both hard and soft infrastructure are increasingly interdependent because shocks in one can trigger system failure across the system, therefore, improving overall resilience involves the recognition and management of the interdependencies, which requires the cooperation by all stakeholders.

Other ways of building resilience against shocks include engaging in multilateral trading systems. Multilateralism remains the first best option for an international trading system to act as a fundamental driver of economic and social transformation, because it provides a framework of rules, regulations and guidelines to which all members should adhere, resulting in a level playing field for all participating nations that enables fair and open access to the international trading system be they rich, poor, large or small. The multilateral trading system also provides dispute

resolution mechanisms that offer fairness and predictability but more importantly, solutions to commercial conflicts⁷⁴.

Social protection is another means of building resilience against shocks. Governments should be designed to support community resilience primarily by strengthening systems of social protection with the provision of pensions, benefits and access to health care⁷⁵. The need to provide these crucial basic social protection floors is based on the understanding that all citizens have the right to benefits and that the State has a vital role to play in ensuring access to, if not be directly involved in the actual delivery of the services. In times of economic contraction, social protection systems help to provide useful countercyclical measures against serious challenges to the less privileged. In addition to protecting the most vulnerable people by supporting consumption, social protection helps to smoothen the economic impact of financial crises⁷⁶.

Resorting to International framework and cooperation is another way of building resilience against shocks. It is clear by today's standards that national authorities alone cannot deal with shocks in the globalized world, because global crises have trans-border implications. Natural disasters frequently cross-national borders and have international implications wherever they occur, such issues need to be addressed by collective regional cooperation⁷⁷. In consideration of this cooperation, Sustainable Development Goals target 1.5 evokes resilience as a core feature of target 13.1: "strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries". The building of resilience is underpinned in many other targets such as; targets 2.4 (agricultural practices), 9.1 (infrastructure), 11.5 (reducing impact of disasters) and 11.b (resilience of cities). Similarly, the Fourth United Nations Conference on the Least Developed Countries, adopted the Program of Action for the Least Developed Countries for the Decade 2011–2020, identified as the "multiple crises and other emerging challenges" being one

of the eight interlinked priority areas for the sustainable development of the least developed countries. In 2012, the Secretary-General's High-level Panel on Global Sustainability issued a report entitled "Resilient People, Resilient Planet – A Future Worth Choosing", which outlined a vision towards sustainable development through inclusive economic growth, environmental development and social equity. Building resilience to shocks is a key feature of many other frameworks such as the Vienna Program of Action, the Samoa Pathway and Agenda 2063 of the African Union⁷⁸.

Finally, policy recommendations are necessary frameworks for building resilience towards multiple shocks. Systems of social protection should be strengthened to provide buffers to shocks, especially for vulnerable segments of the population. These systems should be made adaptive, integrated with disaster risk reduction and climate change adaptation and scalable; it is also very important to identify critical infrastructure that requires a higher level of protection from shocks, including certain lifeline systems, which are fundamental to supporting emergency response operations; for a developing nation like Nigeria, it may be preferable to build resilience against shocks by focusing on environmental, trade and social policies more on workers and communities rather than on particular jobs and sectors. Resilience-building policies can be most effective, if policymakers should identify and analyze the actual or potential impacts of sustainability transitions on innovation, employment, economic and trade performance rather than focus on themselves and recycling burnt out policies and leadership. All these can be achieved through a robust identity management system⁷⁹.

The Capacity to Promote Equity.

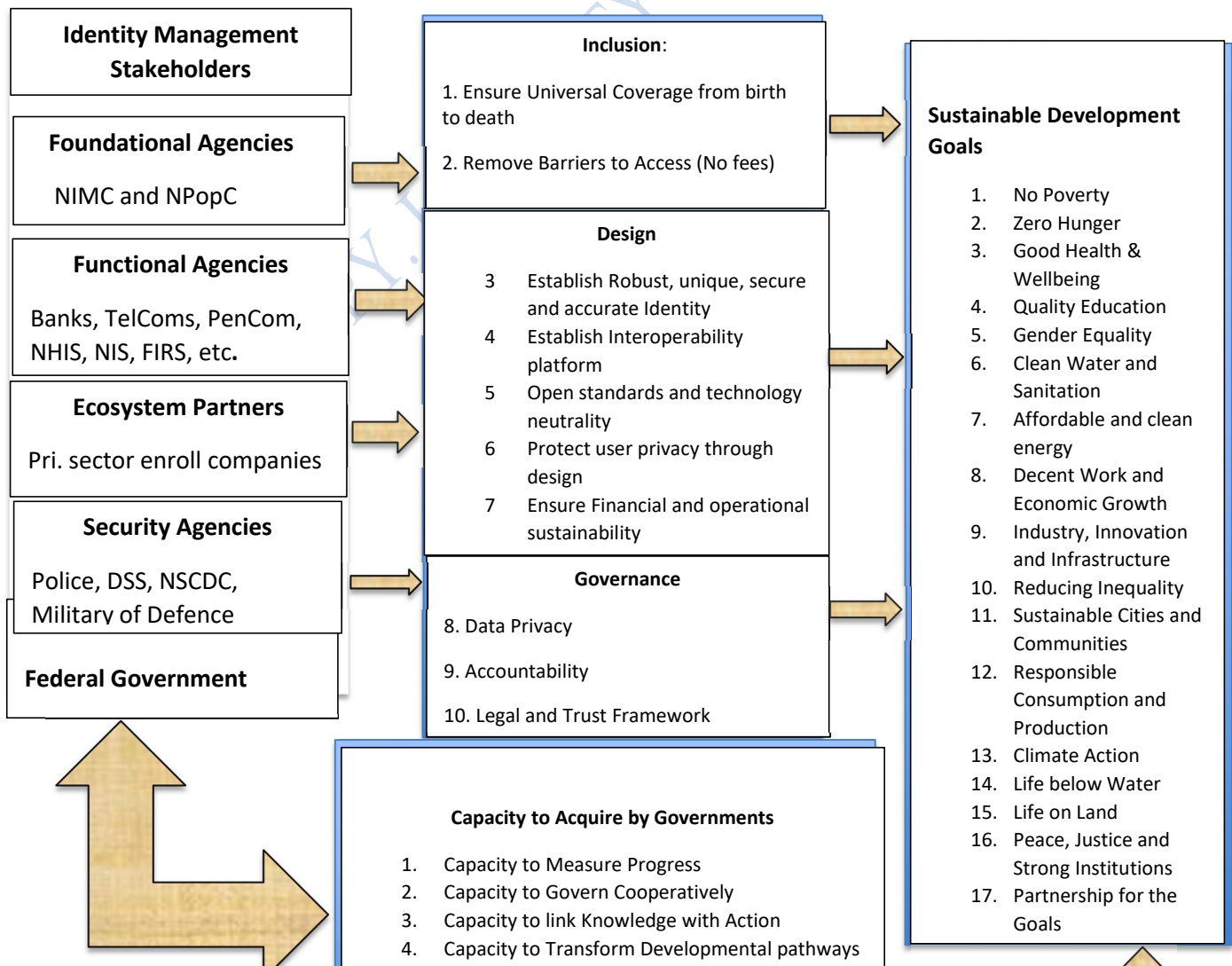
The capacity to promote equity in sustainable development means building institutions and effective governance systems that support a sustainable and equitable path to dealing with a

myriad of issues by states, civil society actors supported by the broadest possible constituencies to ensuring a balanced development process that is compatible with the preservation of ecosystems and species by emphasizing on approaches and indicators that support strong sustainability. Strong sustainability, takes the view that certain critical natural stocks such as the climate system and biodiversity cannot be replaced by human-made capital and must be maintained. The core process of building these six capacities is entirely hinged on a robust identity management system for the country.⁸⁰

2.4. Conceptual Framework

Table 2.4 Conceptual Framework

E-identity and Security: Role of Identity Management in Sustainable Development



2.5. Summary of Gaps in Literature

As demonstrated above, a review of extant studies establishes the need to pursue the study of the impact of identity management on sustainable development. Currently, there exists a lot of literature on sustainable development and the sustainable development goals and also literature on the effective and efficient management of identities. However, there seems to be a wide gap in literature with respect to the study of the interplay between identity management and sustainable development, which this study is designed to fill.

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Chapter Three

Methodology

This chapter focused on the procedure of data gathering and analysis employed in the study. The research methodology presented is related to the statement of problem and objectives of the study. This chapter contains the research design, population of the study, sample and sampling technique, instruments for data collection, validity of the research, reliability of the research instrument, administration and method of data collection and method of data analysis.

3.1 Research Design

This study adopted a descriptive and qualitative research method. The data used in this study was collected from both primary and secondary sources. The primary method or sources of data collection included the use of a research instrument such as questionnaire and interview. Some research questions were designed as guides in eliciting first-hand information on the subject matter. The questionnaire contained thirty-two structured questions designed in both opened and closed ended style. In addition, the questionnaires were validated and administered physically on respondents directly, retrieved, collated and received through courier services dispatched from the various regions and states. Secondary data which included textbooks, journals, government documents and internet materials were used to design some of the questions. The study adopted the use of numbers, simple percentages, tables and descriptive content approach for data analysis.

3.2 Population of the Study

Specifically, this chapter examined how the use of digital identity promoted efficiency gains, financial savings, social inclusion and access to basic services and rights. It examined the use of National Identification Number (NIN) and access to mobile phone numbers played an extensive role in the inclusion of citizens for the provision of financial services and other social welfare

schemes related to the use of mobile phones across the country. The sample size included randomly selected Nigerians and legal residents, functional and foundational identity staff who were respondents on the structured questionnaires and were aware of the importance of the use of Bank Verification Number (BVN) and the National Identification Number (NIN) to access extensive financial and social welfare schemes by the government. The study sample made of persons randomly selected from the public in six states of the federation including the Federal Capital Territory, Abuja, staff of National Identity Management Commission and Functional Agencies, such as Nigeria Immigration Service, State Security Service (SSS), Federal Inland Revenue Service (FIRS) Nigeria Security and Civil Defense Corps, Federal Road Safety Corps, Mobile Telephone Companies and a host of others, examined how the administrative use of the National Identification Number (NIN) by the security agencies such as the Nigeria Police Force, State Security Service, Nigeria Immigration Service played effective and efficient role for identification and security purposes, since efficiency and effectiveness of any data base management system, whether private or public largely depended on how it was positively used.

3.3 Sample and Sampling Technique

Thus, the sample size of the study is in the region of two hundred and seven correspondents (207) which were drawn up from the study's population as a result of random simple sampling.

3.4 Instruments for Data Collection

In conducting this research, primary and secondary data were used. The primary method or sources of data collection included the use of research instruments, (questionnaires) and interviews. Some of the research questions were designed in such a manner as to guide

respondents in eliciting first-hand information on the subject matter. The questionnaire contained thirty-two structured questions, which were both opened and closed ended styled. In addition, the questionnaires were validated and administered physically on respondents directly, retrieved, collaborated and received through courier services dispatched from the various regions and states. Secondary data which included textbooks, journals, government documents and internet materials were used to design some of the questions. The study adopted the use of numbers, simple percentages, tables and descriptive content approach for data analysis.

3.5 Validity of the Research Instrument

The research was concisely planned, structured and strategically designed to investigate and obtain answers to the research questions and the objectives of the research and also to control the variance and the variables under investigation. The design served as an important guide on how data was collected, collated, analyzed and interpreted whilst the variables were strongly held to ensure that internal validity was strongly assured in the research. The study adopted the use of numbers, simple percentages, tables and descriptive content approach for data analysis. Content analysis was utilized in complementing the data research for validity purposes.

3.6. Reliability of the Research Instrument

Two research instruments were used for data gathering. Information derived from questionnaire administrated and information gathered from secondary data sources. Specifically, data was generated from the field first-hand through the instruments of integrated questionnaire-interview and observation.

3.7 Administration and Method of Data Collection - The questionnaire was largely made up of open-ended questions with options to select and close-ended questions for easy coding,

tabulation and subsequent analyses. The questionnaire was randomly administered and collected by NIMC officials in the six states including the federal capital, where the field study took place.

3.8 Method of Data Analysis: Some of the questions were designed in semi-structured interview format to elicit direct input of the respondents, which were eventually tabulated and summarized based on the commonality of answers to complement the information gathered from questionnaires and secondary data sources as a follow-up for clarification and verification purposes.

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Endnotes

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Chapter Four
Results and Discussion of Findings

4.1. Demographic Data Table

S/ N	REGIO N	NO OF RESP	STAT E	GENDER (%)		AGE BRACKET (%)				EMPLOYER (%)				HIGHEST EDUCATION ATTAINED %						ID MGT. AGENCY %		PUBLI C
				M	F	50 - up	36 - 49	26 - 35	18 - 25	FED	ST	PRI	SEF	S	O	H	F	M	D	NIM C	Other s	
1	South West	30	Ogun	73	27	13	50	27	10	66	3	13	17	7	3	10	30	44	3	34	33	33
2	South West	30	Ondo	57	43	10	50	23	17	53	27	7	13	13	17	10	50	10	-	33.	30	37
3	South West	38	Lagos	52	48	5	47	26	21	39	0	61	3	3	0	3	42	50	3	26	11	63
4	South West	44	Oyo	73	27	9	66	25	0	64	0	36	0	0	0	11	46	43	0	32	25	43
5	South South	20	Rivers	50	50	15	55	30	0	80	5	5	10	10	0	20	30	40	0	45	35	20
6	FCT	45	Abuja	55	45	20	50	25	5	70	0	25	5	2	5	20	40	25	8	45	33	22
7	Total	207	All	60	40	12	53	26	9	62	6	24	8	6	4	12	40	36	2	36	28	36

Note on Abbreviations

S/N	Employer	Federal Government	State Government	Private Sector	Self Employed	
1	Abbreviation	FED	ST	PRI.	SEF	
	Highest Education Attained	School Certificate	Ordinary National Diploma	Higher National Diploma	First Degree	Master Doctorate
2	Abbreviation	S	O	H	F	M D

4.1.1 Demographic Data Analysis

A total number of 207 questionnaires were randomly administered in the field consisting of six states including the federal capital territory. Out of the 207 questionnaires, 60% was administered to male respondents and 40% to female respondents. On the age bracket category, 12% was administered to persons between the ages of 50 years and above, 53% to persons between 36 years to 49 years, 26% to persons between 26 years and 35 years and 9% to persons between 18 years to 25 years. On the employer category, 62% of the 207 questionnaires was administered to federal government employees, 6% to state government employees, 24% to private sector employees and 8% to self-employed persons. On highest level of education attained, 6% of the 207 questionnaires was administered to persons who had secondary school certificate as the highest educational level attained, 4% to persons with ordinary national diploma certificate, 12% to persons with higher national diploma certificate, 40% to persons with first degree certificate, 36% to persons with master degree and 2% to persons with doctorate degree. Of the 207 questionnaires, staff of National Identity Management Commission consist of 36% of the respondents, while members of other functional agencies and security agencies, consisting of the Nigeria Immigration Service (NIS), Nigeria Police Force (NPF), Nigeria Security and Civil Defense Corps (NSCDC), Federal Inland Revenue Service (FIRS), State Security Service (SSS), Federal Road Safety Corps (FRSC), Telecommunication Companies such as MTN, Airtel for example and Bankers, constitute 28% of the respondents, and finally members of the public drawn randomly constitute 36% of the respondents.

4.2 Presentation and Explanation of the Purpose of the Questionnaires

The questionnaires were divided into two sections: A and B.

Section A, was divided into four parts with various questions and tables analyzing the response to the questions. The first part of the questions in section A includes **Questions 1 – 6**. These structured questionnaires were designed to elicit from respondents, the capacity of the federal government and the political will to enforce the legislations on identification and security, management and the capacity of the Federal Government to build a resilient economy and systems to absorb shocks, facilitate and implement the achievement of the United Nations Sustainable Development Goals.

Question 7: was designed to elicit from respondents two factors that were considered to be the most salient equity challenge that mitigated against the registration and enrolment of citizens and legal residents into the National Identity Database.

Questions 8 – 12: were designed to elicit from respondents the successes and challenges that they may know concerning the National Identity Management Commission.

Questions 13 – 18: were designed to elicit from respondents their knowledge of the inter-relationships and collaborations between NIMC and other functional agencies to effectuate e-identification and security. Some sections of the questions were also designed to elicit from respondents the challenges that they may know that foundational and functional agencies faced based on their interactions with them (agencies) and the likely solutions that they were willing to proffer as citizens to the agencies to ensure the advancement and achievement of the UN sustainable development goals.

Section B. This section was divided into five parts with various structured questions. The questions were specially designed for respondents in the foundational and functional agencies. The questions were designed to elicit from them, their knowledge of the UN Principles of Identification for Sustainable Development Goals. A demographic portion of the section, required the respondents to state the functional or foundational agency they belong, their region and state or residence.

Questions 19 – 20: were designed to determine the level of the knowledge of the respondents of the UN Principles of Identification for Sustainable Development, which is a requisite for the success of every person engaged in the identification business.

Question 21 – 22: were designed to elicit answers specifically from respondents in the functional agencies such as the Nigeria Immigration Service, the Federal Inland Revenue Service, and the security agencies such as the State Security Service, Nigeria Security and Civil Defense Corps about the usefulness of the National Identification Number (NIN) to their services in planning, identification of citizens and the distribution of government goods and services.

Question 23 – 24: These two structured questionnaires were designed to elicit from the respondents, suggestions and recommendations that they may wish to proffer as operators of the scheme to the federal government for improving the identification and security architecture in Nigeria.

Questions 25 – 27. These questions were designed to elicit from respondents, their knowledge of Data Privacy as operators of the identification scheme in the age of digital technology globally, which is fundamental to the safety, security and the exercise of the human rights of enrollees. One of the questions sought to know from them as operators, the challenges that the federal

government was likely encountering on the issues and what they thought should be done to effectuate the legislation on data privacy.

Questions 29 – 30: The structured questions were designed to solicit from respondents the suggestions and recommendations that they were willing to proffer as operators of the scheme in order to close the gaps identified in enrolling citizens and legal residents into the National Identity Database and what they thought that the federal government should do to improve the interplay between the foundational and functional agencies to effectuate the attainment of the UN Sustainable Development Goals.

4.2.1 Analysis of Questionnaires

Question 1. What do you think is the major cause of the lack of political will on the part of the Federal Government to enforce legislations on e-identification and access to government goods and services?

Table 4.2.1

S/N	Questionnaire Options	Respondent Score
A	Poor funding of identification programs	45
B	Poor collaboration between functional and foundational identification agencies	60
C	Poor planning and prioritization of e-identification programs	96

Question 2: The capacity to adapt to shocks by nations is a prerequisite to achieving sustainable development as espoused by the United Nations. What should the Federal Government do to improve capacity, when capacity involves building economies and systems to ensure resilience?

Table 4.2.2

S/N	Questionnaire Options	Respondent Score
A	Effectively manage global financial shocks resulting from banking crisis	24
B	Manage currency exchange rate and depletion of sovereign wealth	23
C	Effectively manage and control variable harvests resulting from bad weather conditions, decreasing inventory levels of agricultural outputs, increasing demands for commodities from fast growing developing countries	22
D	Manage increasing demands and huge dependence on imported fuel	23
E	Effectively articulate governance priorities of developmental programs	25
F	All of the above	90

Question 3. Rate between 1 – 10, 10 being the highest ranked. What is the major cause of the Federal Government’s lack of capacity to adapt to shocks?

Table 4.2.3

S/N	Questionnaire Options	Respondent Score									
		1	2	3	4	5	6	7	8	9	10
A	Capacity to fund priority projects such as identity management to generate data for socio-economic planning			5	32	15	34	20	25	65	7
B	Currency Exchange Rate Crisis										

C	Poor Management of agricultural output on food			8	16	25	33	57	48	16	
D	Poor management of sovereign debt			6	13	23	34	42	55	30	
E	Inability manage and control commodity price shocks			5	17	29	65	43	32	12	
F	Poor and inadequate control and management of environmental shocks from climate change, flooding and conflict shocks across the country			6	46	32	44	40	19	16	

Question 4. Social protection is another way of building resilience against shocks. Which of the following is the most salient factor mitigating against social protection for the attainment of sustainable development goals in Nigeria?

Table 4.2.4

S/N	Questionnaire Options	Respondent Score
A	Poor administration of social protection systems across the country	22
B	Lack of proof of identity by a huge number of citizens	22
C	Poor funding of social protection safety nets	19
D	All of the above	140

Question 5: The capacity to promote equity is fundamental to the veritable governance system that promotes sustainable development. True or False?

Table 4.2.5

S/N	Questionnaire Option	Respondent Score
1.	True	161
2.	False	42

Question 6: Is Nigeria on track in promoting equity for effective governance system? Yes / No

Table 4.2.6

S/N	Questionnaire Option	Respondent Score
1.	Yes	52
2.	No	151

Question 7: pick two most salient examples of the factors causing inequity in Nigeria's governance systems that mitigates against equity in the registration and enrolment of citizens and legal residents into the National Identity Database?

Table 4.2.7

S/N	Questionnaire Options	Respondent Score
A	Insecurity in the South East disrupting registration and enrollment of citizens, which interrupts continuous registration and enrollment service against what obtains in other regions of the federation	29
B	Northern regions facing multiple terror attacks and rampaging of marauders, which disrupts registration and enrollment exercises	28
C	South west feeling of imbalance in the federal structure	27

	fueling inequity in the distribution of resources	
D	Niger-Delta facing environmental degradation and pollution, making registration and enrollment of citizens a sporadic exercise and worsening inequity in service delivery	27
E	Poor application of the federal character principles, which favors those who know people at the corridors of power and disenchantment amongst the youths.	39
F	Lack of interest to register and enroll by a huge number of youths due to inequity and joblessness resulting from poor management of resources by the federal government based on religion, region, and other primordial sentiments	29
G	In Nigeria, inequity is a rabid dog that barks and bites to spread its rabies. It is seen in the castration of the federal character principles. It is seen in the allocation of resources, especially as it relates to the oil wealth flowing from Niger-Delta. It is seen in appointments into public offices. It is seen in the citing of national infrastructure. It is even sighted in the distribution of the basics that Nigerians need to live and thrive.	28

Question 8: Outline three fundamental successes of National Identity Management Commission known to you.

Table 4.2.8

S/N	Tabulate Summary of Successes	Score
1	Provides Proof of Identity for Nigerians	73
2	Harmonization of NIMC's and Functional Agencies Database	65

3	Provision of Database for Biometric verification of citizens and legal residents	69
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Question 9: Outline three major challenges facing the National Identity Management Commission

Table 4.2.9

S/N	Tabulate Summary of Challenges	Score
1	Poor funding	69
2	Lack of political will by government to enforce the use of the NIN	78
3	Poor supervision and collaboration of ecosystem partners	60

Question 10: Would you ascribe the lack of citizens compliance to enrollment deadlines as a possible challenge to the advancement of e-identification? Yes / No

Table 4.2.10

S/N	Questionnaire Option	Respondent Score
1	Yes	147
2	No	56

Question 11: If yes, would you agree that the poor enforcement of legislations for identity management is the primary reason? Yes / No

Table 4.2.11

S/N	Questionnaire Option	Respondent Score
1	Yes	113
2	No	90

Question 12: If No, state two or three other reasons you may know

Table 4.2.12

S/N	Tabulate Options	Respondent Score
1	Poor funding of identification agencies	39
2	Citizens apathy to enroll due to no definitive date to register and be captured	28
3	Poor awareness creation of the benefits of enrollment by citizens	23

Question 13: Do you agree that the extensive use of mobile phones in Nigeria offer a transformative solution to identity management? If Yes, give two reasons. If No, give two reasons.

Table 4.2.13

S/N	Tabulate Reasons	Respondent Score
1	Identification of users through SIM / NIN linkage	187
2	Forced a huge number of citizens and legal residents who hitherto were unperturbed about enrolling into the National Identity Database to quickly comply.	187
3	Helped law enforcement agents to detect criminals through the identification of their phones and locations	187

Question 14: Do you think that a collaborative relationship between National Identity Management Commission and other Identity Agencies of Government to deny unregistered citizens access to government goods and services could propel huge enrollment of citizens? Yes or No

Table 4.2.14

S/N	Questionnaire Option	Respondent Score
1	Yes	149
2	No	64

Question 15: Give two reasons to support your position.

Table 4.2.15

S/N	Tabulate Reasons	Respondent Score
1	Need to have access to services	63
2	Need to participate in governance process	36
3	Economic benefits to all	50

Question 16: Security has been a challenge in advancing e-identification and sustainable development in Nigeria. Pick two causes of insecurity in Nigeria.

Table 4.2.16

S/N	Questionnaire Option	Respondent Score
A	Poor governance principles and administration by the federal government?	52
B	Lack of religious tolerance and huge number of uneducated populaces?	30
C	Poor registration and enrollment of citizens and legal residents into the National Identity Database?	32
D	Corruption and inequity in the federal structure and distribution of government resources?	52
E	Inability of security agencies to fish out insurgents due to poor identification systems?	41

Question 17: Sim-linkage with National Identification Number (NIN) has been hailed as a good measure of managing security and identity of telephone users enrolled into the National database. Do you think that linking the Permanent Voters Card (PVC) can help authenticate the identity of voters and effectively help in managing the challenges of electronic voting and election fraud if the Independent National Electoral Commission (INEC) adopts the linkage of the PVC with the Voters NIN?

Table 4.2.17

S/N	Questionnaire Option	Respondent Score
A	Yes, it will be helpful in authenticating the identity of voters	89
B	No, except if citizens' data is harmonized	114

Question 18: If No, choose the reasons why the linkage cannot be achieved?

Table 4.2.18

S/N	Questionnaire Option	Respondent Score
A	Poor coordination of the harmonization processes of citizen's data into the National Database	16
B	Lack of political will by the agencies to enforce the collaboration and coordination of their database into the National Database	29
C	INEC protecting their turf against NIMC for any blame that may arise from the failure or unforeseen technical / operational glitch or challenges	14
D	All of the above	55

Question 19: are you aware of the United Nations Principles of Identification for Sustainable Development? If yes, please tick three major pillars below.

Table 4.2.19

S/N	Questionnaire Options	Respondent Score
A	Inclusion, Design, and Governance	65
B	Registration, Enrollment and Accreditation	20
C	De-duplication, Verification and Authentication	44

Question 20: One of the following is not a United Nations Principle of Identification for Sustainable Development.

Table 4.2.20

S/N	Questionnaire Options	Respondent Score
A	Establish a robust, unique, secure and accurate identity	6
B	Ensure universal coverage for individuals from birth to death	2
C	Use open standard and ensure vendor and technology neutrality	3
D	Protect user privacy and control through system design	21
E	Safeguard data privacy, security and user rights through a comprehensive legal and regulatory framework	22
F	Ensure verification and authentication of users	75

Question 21: does your agency make use of data provided by the National Identity Management Commission? Yes / No

Table 4.2.21

S/N	Questionnaire Option	Respondent Score
1	Yes	124
2	No	3

Question 22: How helpful has the data from the National Identity Management Commission been to your agency in curbing crime?

Table 4.2.22

S/N	Questionnaire Option	Respondent Score
1	Very useful	86
2	Somehow useful	40
3	Not useful	1

Question 23: What singular solution would you proffer to the Federal Government and the National Identity Management Commission to ensure an effective-e-identity and security management in Nigeria.

Table 4.2.23

S/N	Questionnaire Option	Respondent Score
A	Enroll all citizens and legal residents into the National Identity Database	13
B	Enforce the registration of all existing citizens and legal residents within a timeframe	10
C	Create more awareness amongst the public	14
D	Extend comprehensive funding to the National Identity Management Commission	25

E	Do all of the above	65
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Question 24: What should the National Identity Management Commission do to effectively cover vulnerable groups in the country (people with disabilities, migrants, the forcibly and internally displaced persons and ethnic minorities).

Table 4.2.24

S/N	Questionnaire Option	Respondent Score
A	Take the registration and enrollment equipment and accessories to the centers where they reside	26
B	Use special and advanced equipment and accessories to capture the disabled	26
C	All of the above	75

Question 25A: What safeguards have the National Identity Management Commission put in place for citizen's data privacy.

Table 4.2.25A

S/N	Tabulate Options	Respondent Score
A	Restrict Access to Data Except by Authorized Agencies and Persons	43
B	Enforce existing legislations	52
C	Encrypt systems and access	29

Question 25 B: What challenge or challenges does the National Identity Management Commission encounter in enforcing the data privacy law?

Table 4.2.25B

S/N	Tabulate Options	Respondent Score
A	Poor collaboration and enforcement of existing law (The Nigerian Data Protection Regulation 2019 (NDPR) by Federal Government Agencies	64
B	Delay in the passage of draft Privacy Data Protection Bill 2020 (NIMC)	28
C	Poor knowledge of law by the Public	31

Question 26: How effective is the enforcement of identification legislations in Nigeria?

Table 4.2.26

S/N	Questionnaire Option	Respondent Score
A	Very effective	14
B	Effective	20
C	Not effective	65
D	Needs more to be done	18

Question 27: What challenges does the National Identity Management Commission encounter in enforcing e-identification and enrollment of citizens and legal residents into the National Identity Database.

Table 4.2.27

S/N	Questionnaire Option	Respondent Score
A	Poor funding from the Federal Government	25
B	Poor compliance from citizens and legal residents	14
C	No consequences for failure to comply	12
D	Inadequate staffing to engage the huge population	10
E	Poor collaboration of ecosystem partners to follow procedures for capturing citizens' data	25
F	All the above	40

Question 28: Which one of the following would you recommend as a priority for closing the gap in citizens' and legal resident enrollment into the National Identity Database.

Table 4.2.28

S/N	Questionnaire Option	Respondent Score
A	More collaboration and supervision of the ecosystem partners by National Identity Management Commission	11
B	Aggressive awareness creation and education of citizens and legal residents of the benefits of e-identification and enrollment to access government goods and services	10
C	Impose sanctions on defaulters from gaining access to government goods and services, such as depriving their wards from sitting examination in	26

	public and private schools etc.	
D	Government should vote more funding to national Identity Management Commission to recruit more staff and acquire more enrollment equipment and accessories across the country	15
E	All of the above	65

Question 29: Do you think that compelling providers of essential daily needs such as gas, vehicles gasoline, kerosene and payment for electricity bills should insist on payment through ATM Cards, which invariably means the enrolling for National Identification Number (NIN) by citizens and legal residents before service could be rendered?

Table 4.2.29

S/N	Questionnaire Option	Respondent Score
A	Yes	68
B	No	23
C	Difficult to enforce	31

Question 30: What impacts do you think such enforcement pursuit will have on the security architecture of the country?

Table 4.2.30

S/N	Questionnaire Option	Respondent Score
A	Have positive impacts	65
B	Little or no impacts	27
C	Difficult to enforce	30

Question 31: What do you think a total cashless system would have on the Nigerian economy as well as the security architecture of the country?

Table 4.2.31

S/N	Questionnaire Options	Respondent Score
A	Reduced kidnapping and demands for ransom	20
B	Improved economy as all money flow can be traced	25
C	Improved security and reduction of corruption	24
D	All of the above	55

Question 32: In what ways do you think the interplay between the security agencies and National Identity Management Commission can improve, apart from the use of the National Identification Number (NIN)?

Table 4.2.32

S/N	Questionnaire Option	Respondent Score
A	Improved relationship and training between National Identity Management Commission and the agencies on ease of the use of technology on real time basis	19
B	Improved monitoring and oversight activities of the security agencies with the establishment of an independent watchdog agency to monitor the National Identity Management Commission and Agencies compliance with the procedures and laws on data management and linkage	29
C	Establish a Crime Monitoring Unit in National Identity Management Commission and the Federal Government and State Security Agencies to interface effectively on crime suspects in the custody of Nigeria Customs, Nigeria Police, Nigerian Immigration Service, Nigerian Navy, Nigerian Airforce and Nigeria Army and other paramilitary agencies such as the Nigeria Security and Civil Defense Corps	20
D	All of the above	56

4.2.2. Hypothesis

This research was based entirely on the need to resolve the statement of problem, which posits that the lack of political will on the part of the Federal Government of Nigeria, may be responsible for the poor enrollment and registration of citizens and legal residents into the National Identity Database, because since the inception of the National Identity Management Commission (2007) in 2007, a huge number of 140 million citizens out of a total of 195 million citizens and legal residents were left unregistered as at 2018 based on World Bank Database set records of 2018. This abysmal performance by the Commission, if not corrected is likely to affect the achievement of the UN Sustainable Development Goals (SDG) 2030. Consequently, the research proceeds with the following four hypotheses, which will address the major findings. That e-identity management and security are key elements for sustainable development, without which, sustainable development is impaired. That the level of e-identity management infrastructure and security available in a given society determines the degree of success or failure of accomplishing sustainable development goals (SDGs). That poorly conceived and ill-managed e-identity management and security architecture may exclude a huge number of citizens from benefiting from government administered social security safety nets. Conversely, that a richly conceived and well-managed e-identity management and security architecture could result in a higher number of citizens being captured into the National Database and enabling access to government resources and the advancement of Sustainable Development. Finally, that poorly conceived and ill-managed e-identity management and security architecture frameworks could lead directly or indirectly to ineffective and inefficient planning, organizing, leading and controlling of the processes of citizens gaining access to state resources and advancing Sustainable Development Goals (SDGs) in a given nation.

4.2.3. Discussions of Research Findings

Questions 1 – 6: Were designed to elicit from respondents, the capacity of the Federal Government of Nigeria and the political will to enforce the legislations on identification.

Question 1 was designed to elicit from the respondents what they believe is the likely major reasons why the Federal Government of Nigeria lacks political will to enforce legislations on e-identification to provide citizens and legal residents to gain access to government goods and services? 96 respondents across the five states and the federal capital territory, within three geographical zones of the federation specified that poor planning and prioritization of e-identification programs is the primary reason. 60 respondents indicated that it is the poor collaboration between functional and foundational identification agencies, and 45 respondents specified that it is poor funding of identification programs. The position taken by majority of the respondents is remarkable because poor planning and prioritization of identification programs covered the ineffectiveness and undesirability of federal government bureaucrats and politicians within the Executive and the Legislature to allocate appropriate funding for e-identification programs which is basic for economic planning, welfare and service delivery to citizens. Planning and prioritization of e-identification programs means providing funding for the collaboration of the functional and foundational agencies to harmonize their databases into the National Identity Database. Thus, the poor planning by bureaucrats and politicians at the federal government level invariably means that identity management program is at a lower rung of importance to the Federal Government.

Question 2 was designed to elicit from respondents what the federal government should do to improve capacity to absorb shocks by building economies and systems. 90 respondents representing 43% of the respondents suggested a comprehensive set of actions by the federal government as follows; articulate governance priorities for developmental programs of which

identification management is one, manage global financial shocks by appropriately regulating the banking industry, appropriately manage currency exchange rate and sovereign wealth fund, control and manage viable harvests, lower demands for foreign made goods and reduce dependency on fuel importation. Other respondents ranging from 22, 23, 23, 24 and 25 representing between 10% and 12% each suggested one of the solutions proffered by majority respondents stated above. The majority's suggestion at 43% of respondents indicate the huge responsibility before the federal government to improve capacity to build resilient economies and systems to absorb global shocks. The comprehensive list of options to be undertaken by the federal government to build economies and systems indicate the inability of the federal government to effectively management e-identification programs to guarantee the achievement of the UN sustainable development goals.

Question 3. On a ranking of 1 – 10, respondents were requested to rank the highest cause of federal government's lack of capacity to adopt to global shocks. 65 respondents ranked the capacity to fund priority projects such as identity management to generate data for socio-economic planning with 9/10 rating as the major cause. This indicates a total of 585 scores being 9 multiplied by 65 respondents. This ranking showed the general understanding of respondents that data generated through enrollment and registration of citizens is primarily very important in measuring economic growth and development of nations such as productivity output; GDP and invariably the statistics for managing sovereign wealth, currency exchange rate, managing and controlling agricultural output, commodity pricing, and managing environmental shocks from climate change, flooding and conflicts shocks.

Question 4: was designed to elicit from respondents the most salient factor mitigating against social protection for the attainment of sustainable development goals in Nigeria. A total number

of 140 respondents which represents 69% of the respondents proffered a comprehensive list of factors that they identified as the mitigating factors against social protection in Nigeria. These factors included the poor administration of social protection systems across the country, lack of proof of identity by a huge number of the populace, and poor funding of social protection safety nets. Others respondents numbering 31% chose one of the three factors proffered by the majority of the respondents as responsible. The comprehensive list of factors identified by the majority of the respondents showed that the factors were responsible for the abysmal number of 140 million unregistered citizens of the 195 million Nigerians indicated by the World Bank Dataset records of 2018.

Questions 5, 6 and 7: On the statement that the capacity to promote equity is a veritable governance system for promoting sustainable development in Nigeria, 131 respondents representing 85% answered in affirmative, while 23 respondents representing 15% said that it does not. This poses a serious challenge to the federal government efforts towards promoting equity considering the fact in question 6, where it was asked if Nigeria is on track in promoting equity, 105 respondents representing 70% believed that Nigeria is not on track while 46 respondents representing 30% said that Nigeria is on track. However, question 7 that requests respondents to pick two salient factors known to them that mitigates against equity in the Nigerian governance systems, respondents were evenly split in their answers. 14% believed that insecurity in the south east intermittently disrupts the enrollment of citizens and therefore mitigates against equity in the enrollment of citizens into the National Identity Database. 13.5% of respondents said that multiple attacks and rampaging of terrorists and marauders in the northern region is responsible for the inequity in the enrollment of citizens in the north. 13% alluded to the fact that the imbalance in the federal structure fuels inequity in the distribution of

resources, which negatively affects the south west region. Another 13% posited that the environmental degradation and pollution in the Niger-Delta makes enrollment a sporadic exercise and worsens the inequity in service delivery. 19% representing the highest poll on the question, suggested that the poor application of the federal character principle, which favored those who know people in the corridors of power and the disenchantment of the youthful population was responsible for inequity in the governance system in the country. 14% respondents indicated that the disinterestedness of the youthful population to enroll into the National Identity Database arises from inequity and poor management of the nation's resources by the federal government. While 13.5% alluded to the fact that in Nigeria, inequity is a rabid dog that barks and bites to spread its rabies. That inequity is seen in the castration of federal character principles, in the allocation of resources, in the appointment into the public service and in the citing of infrastructure. It is also seen in the distribution of the basics that Nigerians need to live and thrive, such as the enrollment into the National Identity Database to gain access into government's services and social safety nets.

Question 8 elicits from respondents three successes known to them that the National Identity Management Commission had recorded so far. The answers provided by the respondents were varied but sorted into three major categories; 73 respondents representing 35% indicated that the Commission had provided Nigerians and legal resident with a means to proof their identity. 65 respondents representing 31% specified that the Commission had harmonized the database of several federal government functional agencies providing a unified National Identity Database. While 69 respondents representing 33.3% indicated that the Commission had successfully provided a database for biometric verification of citizens and legal residents.

Question 9 elicits from respondents three major challenges they know that confronts the National Identity Management Commission. The answers provided were sorted into three categories; 69 respondents representing 33.3% specified that poor funding of identity management programs was huge challenge. 78 respondents representing 37% indicated that the lack of political will by the federal government to enforce the use of the National Identification Number (NIN) for certain essential services as provided by the NIMC Act, 23 of 2007, section 27, Mandatory Use of NIN Regulations 2015 and the Nigeria Biometric Standards Regulations 2017 was a contributory factor to the challenges being faced by the Commission. The provisions of these Acts and regulations, provides that the Commission shall ensure that every federal agency with statutory functions that require identity management should maintain a NIN and Biometric Standards Compliance Register within its agency and update the Commission on monthly basis on the number of identification added to or renewed on the identity database of the agency. Secondly, that the Commission should publish on its website the details of its monitoring and enforcement activities on quarterly basis pursuant to the regulations. None of these activities are being enforced due to the lack of political will on the federal government and the operators of the scheme to do the needful. Finally, 65 respondents representing 31% specified that citizens' apathy to enroll was another challenge that the Commission faced. This could be adduced to the fact that defaulters faced no consequences for non-compliance, even though penalties are outlined for failure to comply.

Questions 10, 11 and 12. Respondents were asked if citizens failure to comply with deadlines for enrollment constitute a challenge to the advancement of e-identification, 63 respondents representing 42% agreed that citizens' failure to comply constitutes a challenge to the advancement of e-identification while 87 respondents representing 58% disagreed. 83

respondents representing 55% of those who disagreed attributed the challenge to only poor enforcement of legislations, while 45% who disagreed with this position proffered further reasons indicating, the lack of political will to enforce legislations, poor funding of the enrollment program by the federal government and citizens' apathy to enroll due to no consequences or penalties for non-compliance as possible reasons.

Question 13. Respondents were asked if the extensive use of mobile phones in Nigeria offered a transformative solution to identity management in the country. Out of the 207 respondents who responded to the question, 187 respondents representing 90% agreed that mobile phones have offered a transformative solution to identity management in Nigeria and also proffered three reasons for their position; (a) identification of phone users through the SIM / NIN linkage, which forced a huge number of citizens and legal residents who hitherto were unperturbed about enrolling into the National Identity Database to quickly comply and (b) it helped law enforcement agents to detect criminals through the use of their phones and locations and (c) assisted the Federal Government to provide loans and funding to farmers and business owners who can be identified through their SIM and NIN.

Questions 14 and 15. Answering to the question if the collaboration of NIMC with other functional agencies to deny citizens and legal residents' access to essential services could propel huge results for enrollment, 89 respondents who represents 61% of the 147 respondents to the question agreed that it will propel more enrollment, while 58 respondents representing 39% disagreed. The 61% who agreed provided the following reasons for their position; (a) all the agencies provide essential services, which is needed by all and as such will compel people to enroll. (b) the functional agencies provide services that are of economic benefits in the society,

which no one would like to be left out of and (c) everyone wants to participate as citizens in making decisions that concerns their lives and future wellbeing.

Question 16. Respondents were asked to pick two major causes of insecurity in Nigeria on their own account. Respondents were almost evenly split in proffering the causes, however two reasons stood out. 104 respondents representing 50% of those who responded to the question indicated that poor governance principles and administration by the federal government and the existence of corruption and inequity in the federal structure and distribution of government resources were the two major causes of insecurity in the country. Other respondents representing another 50% indicated that the cause of insecurity is due to lack of religious tolerance and a huge number of uneducated populace, poor registration and enrollment of citizens and legal residents into the National Database, which affects the equitable distribution and allocation of resources and thirdly the inability of security agencies to fish out insurgents due to poor registration and enrollment of citizens and legal residents into the National Identity Database for Biometric identification and crime detection.

Question 17 and 18: Respondents were asked if the linkage of Permanent Voters Cards (PVC) of citizens with their National Identification Number (NIN) can assist effectively in managing electronic voting and voter fraud in Nigeria. 125 respondents representing 77% of those who responded to the question agreed that the linkage will help, while 37 respondents representing 23% said no, with the following reasons; (a) 3 of them representing 8% indicated that poor coordination and harmonization process of citizens data pose a challenge, (b) 2 of them representing 5% of the dissenting voices indicated that the lack of political will by the agencies to collaborate and coordinate the harmonization of their data would not allow the process to go on, (c) while another 5% indicated that INEC is protecting their turf against NIMC for any blame

that may arise from failure or unforeseen technical and operational challenges, (d) while 31 of them representing 81% indicated that a combination of all the reasons proffered by the other respondents may be responsible for the agencies to adopt the linkage of the PVC and the NIN.

Questions 19 and 20: Question 19 was designed to determine the knowledge of respondents of the three major pillars of United Nations Principles of Identification for Sustainable Development, which is a prerequisite for successful operation of any identification project. 65 respondents who represent 50% of those who answered to the question picked inclusion design and governance, which is correct. 20 respondents representing 16% chose registration, enrollment and accreditation and 44 respondents who represent 34% chose de-duplication, verification and authentication, which is wrong. **Question 20** elicits to know from respondents, which is of the principles indicated in the options is not a United Nations Principle for Sustainable Development. 6 respondents representing 5% of respondents who answered the question chose; establish a robust, unique, secure and accurate data, 2 respondents representing 2% chose; ensure universal coverage for individuals from birth to death, 53 respondents representing 41% chose; use open standard and ensure vendor and technology neutrality, which is a valid principle, indicating a dearth of knowledge about the principle by respondents, 21 respondents representing 16% chose; protect use privacy and control through system design, 22 respondents representing 17% chose; safeguard data privacy, security and user rights through a comprehensive legal and regulatory framework, and while 25 respondents representing 19% chose; ensure verification and authentication of users, which is truly not a principle. This poor knowledge of the principles by half of the staff of the foundational and functional agencies indicated the need for training and knowledge dissemination within these agencies to perfectly carry out their functions and roles as operators of the scheme.

Questions 21, 22 and 23 were designed to know if other agencies such as the Nigeria Police Force, Federal Road Safety Corps, State Security Service and so on, make use of the data provided by NIMC. 98% respondents indicated that their agencies make use of the NIMC data, showing a good utilization of the National Identity Database by the Security Agencies. 86 respondents representing 68% said that the data provided is very useful and 40 respondents representing 31% said that the data provided is somewhat useful while only 1 respondent said that the data is not useful. Respondents proffered the following solutions to ensure effective e-identity and security management in Nigeria. 65 respondents representing 51% of respondents who answered the question provided the following solutions; (a) enroll all citizens and legal residents into the National Identity Database, (b) ensure the registration of all existing citizens and legal residents within a time frame, (c) create more awareness and benefits of the scheme to the public, and (d) extend comprehensive funding to the National Identity Management Commission. 25 respondents indicated only one of the options, while 14, 10 and 13 respondents respectively proffered one of the options proffered by the 65 respondents who opted for a comprehensive list of solutions as provided above.

Question 24. To cover vulnerable groups (people with disabilities, migrants, the forcibly and internally displaced persons and ethnic minorities), respondents proffered the following solutions; (a) 26 respondents representing 20% indicated the need to take the registration and enrollment equipment and accessories to the centers where the vulnerable and internally displaced persons reside. (b) Another 20% indicated the use of special and advanced equipment and accessories to capture the disabled persons. However, (c) 75 persons representing 59% of the respondents proffered a combination of the solutions provided by the 20% respondents.

Question 25A. This question was designed to solicit from respondents what the National Identity Management Commission should do to safeguard citizens' data privacy. (a) 43 respondents indicated the need to restrict access to data except to authorized agencies and persons. (b) 52 respondents indicated the need to enforce existing legislations and (c) 29 respondents indicated the need to encrypt systems and access.

Question 25B. dealing with the challenges that NIMC faces in enforcing data privacy. Respondent outlines the following challenges; (a) 64 respondents indicated the poor collaboration and enforcement of existing law; The Nigerian Data Protection Regulation 2019 (NDPR) by Federal Government Agencies. (b) 28 respondents indicated the delay in the passage of draft Privacy Data Protection Bill 2020 (NIMC), and (c) 31 respondents specified the poor knowledge of existing laws by the public indicating the need for awareness creation.

Question 26, was designed to determine how effective the enforcement of identification legislations is in Nigeria. (a) 14 respondents said that it is very effective, (b) 20 respondents said it is effective, (c) 65 respondents said that it is not effective, while (d) 18 respondents said that more needs to be done. (e) Analyzing the answer using a combination of not effective and needs more to be done at 71%, made it clear that the Federal Government's enforcement mechanisms of existing legislations is not effective and needs more to be done.

Question 27 was designed to solicit from respondents their personal knowledge as operators of the scheme, the challenges that National Identity Management Commission faces in enforcing the e-identification and enrollment of citizens into the National Identity Database. 40 respondents representing 32% of respondents who answered the question opted for a combination of reasons as follows; (a) poor funding from the federal government, (b) poor compliance of citizens and legal residents to enroll, (c) no consequences for private sector

companies and the citizens for failure to comply despite the penalties proffered for non-compliance, inadequate staffing of NIMC considering the huge Nigeria population, and (d) the poor performance of the ecosystem partners to follow procedures in capturing citizens data. Other respondents indicated one of the options proffered by the 40 respondents who provided a comprehensive list of challenges.

Question 28, in another vain, respondents were requested to provide a priority solution they would recommend for NIMC to close the gap in the enrollment of citizens into the National Identity Database. 65 respondents representing 51% of respondents who answered to the question recommended a comprehensive list of actions to close the gap as follows; (a) more collaboration and supervision of the ecosystem partners by NIMC, (b) aggressive awareness creation and education of citizens and legal residents of the benefits of e-identification and enrollment to access government goods and services, (c) imposing sanctions on defaulters from gaining access to government goods and services such as depriving their wards from sitting examinations in public and private schools, and (d) finally, government should vote more funding to National Identity Management Commission to recruit more staff and acquire more enrollment equipment and accessories across the country. Other respondents ranging from 11, 12, 26 and 15 respectively indicated one of the options provided by the 65 respondents who took a comprehensive view of the solutions.

Questions 29, 30 and 31. Question 29 was designed to elicit from respondents their support for a cashless society, which will force citizens and legal residents to enroll into the National Database to operator a Bank Account and own an ATM, 68 respondents said that they will support the idea, 23 respondents said they would not support the idea, while 31 of them said that it will be difficult to enforce, considering the level of illiteracy in the country. Despite the position of the 44% who

dissented on the idea, being a combination of the No and Difficult to enforce, (a) 65 Respondents, representing 53% said that the idea will have a huge impact on the security architecture in the country, (b) 22% said that it will have little or no impact, (c) 24% said that the idea will be difficult to enforce. (d) 44 % of the respondents believed that the idea of adopting a cashless society by ensuring that every citizen operates a bank account, will force them to enroll into the National Identity Database and therefore help to resolve the following security challenges in the country; (i) reduce kidnapping and demands for ransom by terrorists and bandits ravaging the country, (ii) improve the economy as all money flow can be traced and monitored and (iii) improve security and corruption. 20, 25 and 24 respondents agreed that the idea will achieve one of the options proffered in the comprehensive list by the 55 respondents.

Question 32. This question was designed to solicit from respondents what other ways they believed that the interplay between the National Identity Management Commission and other functional agencies could improve apart from the use of the National Identification Number (NIN). A comprehensive list of solutions was recommended by 56 respondents, which includes the following; (a) improved relationship and training of the foundational and functional agencies through the use of real time technologies, (b) improved monitoring and oversight activities of the security agencies, with the establishment of an independent watchdog, to monitor the National Identity Management Commission and the functional agencies to comply with procedures and laws on data management and linkage and (c) finally, to establish a crime monitoring Unit in the National Identity Management Commission, Federal and State Government Security Agencies to interface more effectively on crime suspects in the country and in the custody of government agencies such as the Nigeria Customs Service, Nigeria Police Force, Nigeria Correctional Services, Nigerian Navy, Nigerian Army, Nigerian Airforce, Nigeria Immigration Service,

Nigeria Security and Civil Defense Corps and other paramilitary agencies across the country. 19, 29 and 20 respondents respectively offered one of the solutions provided by the 56 respondents who proffered a comprehensive list of solution options.

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Chapter Five

Conclusion

5.1 Summary of Findings

The following were the findings based on the research questions administered to respondents:

- i. That planning and prioritization of e-identification and security programs by any government is fundamental to achieving the United Nations Sustainable Development Goals (SDGs 2030), because identification leads to a number of activities which a government needs to carry out to enhance the attainment of the sustainable development goals, such as appropriating and allocating adequate funding for e-identification programs through the activities of the Executive and Legislative Arms of Government. With adequate funding made available to Identity Management Agencies a reasonable number of citizens and legal residents will be enrolled into the National Identity Database. Consequently, that Nigeria's poor planning and prioritization of e-identification programs may be responsible for the poor enrollment of citizens into the National Identity Database, since the inception of the National Identity Management Commission in 2007, which left over 140 million out of 195 million citizens and legal residents unregistered into the National Identity Database as at 2018 based on the World Bank Global dataset 2018.
- ii. The research discovered that the capacity to fund priority projects such as identity management helps to generate data and statistics for socio-economic planning, revenue generation, distribution of government goods and services and social safety nets to citizens, capacity to measure developmental progress in terms of GDP output, sovereign wealth management, currency exchange rate, managing and controlling agricultural output, pricing

and management of environmental shocks for climate change, flooding and conflict shocks, which comprehensively affects the five pillars of sustainable development; people, planet, prosperity, peace and partnership.

- iii. The research also discovered that for the Federal Government of Nigeria to build capacity in six fundamental areas; (a) capacity to measure progress, (b) promote equity, (c) adapt to shocks, (d) transform development pathways, (e) link knowledge with action and (f) to government cooperatively, for the purpose of achieving Sustainable Development, that the Federal Government of Nigeria will have to do the following; (1) articulate governance priorities for developmental programs of which identification management is one, (2) manage global financial shocks by appropriately regulating the banking industry, (3) appropriately manage currency exchange rate and sovereign wealth fund, (4) control and manage viable harvests, (5) lower demands for foreign made goods and (6) reduce dependency on fuel importation.
- iv. The research discovered that in Nigeria a comprehensive list of factors mitigates against social protection, which adversely affects the enrollment and registrations of citizens and legal residents into the National Identity Database; (a) poor administration of social protection systems, (b) inability of a huge number of citizens to proof their identity, and (c) poor funding of social protection safety nets.
- v. The research revealed that a huge number of respondents believed that Nigeria is not on track to promoting equity because inequity is seen in (a) the castration of federal character principles, (b) in the allocation of resources, (c) in the appointment into the public service and (d) in the siting of infrastructure projects across the country. (e) And that inequity is also

seen in the distribution of the basics that Nigerians need to live and thrive by, due to the poor enrollment and registration into the National Identity Database.

- vi. Based on the research findings, over half of the respondents believed that the National Identity Management Commission has successfully (a) provided a unique means of proofing the identity of citizens and legal residents in globally, (b) harmonized and unified the National Identity Database against previously highly proliferated identity database provided by various government agencies and c) finally that the Commission has successfully provided a biometric database for the verification of the identity of citizens and legal residents and fighting crimes within the country. In the same vain the respondents discovered that the National Identity Management Commission faces three major challenges; (a) poor funding. (b) lack of political will by the Federal Government to enforce legislations on identification issues and (c) citizens' apathy to enroll into the National Identity Database because defaulters are not sanctioned for non-compliance.
- vii. The research discovered that mobile phones has offered a transformative solution towards identity management in Nigeria because of the SIM / NIN linkage, which has forced hitherto unperturbed Nigerians using mobile phone to quickly enroll into the National Identity Database or be disconnected by Mobile Phone Service Providers. Secondly, mobile phones have helped Security Agencies in the country to track down criminals and their locations and finally that owning a mobile phone has helped the Federal Government to provide loans and funding to farmers and small business owners who can now be identified with their SIM and NIN.
- viii. The research also found that if providers of essential services deny defaulters of their services, that a huge number of citizens and legal residents would be compelled to enroll into the

National Identity Database because of the economic benefits that the agencies provide and that citizens would not want to be denied from being effective participants on essential services provided by the Federal Government where their lives and welfare are decided.

- ix. The research revealed that insecurity in the country is fueled by a number of factors. These factors are; (a) lack of religious tolerance and a huge number of uneducated populace, who are swayed by ethnic and religious sentiments. (b) the poor registration and enrollment of citizens and legal residents into the National Identity Database, which affects the equitable distribution of economic benefits to citizens and (c) finally, the inability of security agencies to fish out criminals and insurgents due to poor availability of a comprehensive biometric verification database of citizens and legal residents for crime detection.
- x. The research holds the Federal Government of Nigeria responsible for the poor coordination and collaboration of the Permanent Voters Card (PVC) and National Identification Number (NIN) between the Independent National Electoral Commission (INEC) and National Identity Management Commission, which is at the heart of the poor data harmonization of the two government agencies due to the lack of political will.
- xi. The research found that almost half of the respondents from the foundational and functional agencies lack the knowledge of the United Nations Principles on Identification for Sustainable Development, a veritable tool for the successful management and identification of citizens for the implementation of several socio-economic developmental projects in the sustainable development pillars covering; people, planet, partnership, peace and prosperity.
- xii. The research affirmed the following suggestions to effectively facilitate the enrollment and registration of citizens and legal residents into the National Identity Database for security purposes; all citizens and legal residents within the borders of the Nigeria should be

compelled to registered within a specified timeframe. National Identity Management Commission should create more awareness of the benefits of the scheme to the public, and the Federal Government should extend comprehensive funding to the National Identity Management Commission to improve on its services and finally that the NIMC should take enrollment equipment and accessories to the place where vulnerable people; disabled and internally displaced persons reside and use special and advanced equipment and accessories to capture disabled persons.

- xiii. The research discovered that there is need to enhance the effective collaboration between NIMC and ecosystem partners, and to do this, that the National Identity Management Commission should engage and supervise the ecosystem partners more and aggressively create awareness and educate members of the public of the benefits of identified persons gaining access to government goods and services and social safety nets and other services provided by both public and private institutions that will make life more meaningful. Furthermore, that the Federal Government should urgently start sanctioning defaulters, increase funding to National Identity Management Commission to improve their operational activities, recruit and train more staff and acquire more enrollment equipment and accessories for their offices dotted across the country.
- xiv. The research revealed that adopting a cashless society and compelling citizens and legal residents to use of Banks and ATM's for their financial transitions will force more citizens to enroll into the National Identity Database, thereby reducing the incidences of kidnapping and demands for ransom by terrorists and bandits, improving the economy by tracking all money flows, tracing and monitoring all financial transactions to combat crimes and corruption and improve the security situation in the country.

- xv. The research found that the relationship between NIMC, Security and Functional Agencies could be improved if the Federal Government works on the relationship and training of foundational and functional agencies to effectuate the use of real time technologies, monitoring and oversighting of the activities of these agencies by establishing an Independent Watchdog Agency, to monitor their compliance with established procedures and laws on data management and linkage. The Independent Watchdog Agency should also ensure the effective interface of activities between all Federal and State Government Security Agencies on biometric data exchange, verification and identification of crime suspects in the country.

5.2. Conclusion

The research has been a painstaking exercise which affirmed our assumptions that e-identity management and security are key elements for sustainable development, without which, sustainable development is impaired. That the level of e-identity management infrastructure and security available in a given society determines the degree of success or failure of accomplishing the UN Sustainable Development Goals (SDGs). That poorly conceived and ill-managed e-identity management and security architecture may exclude a huge number of citizens from benefiting from government administered social security safety nets. Conversely, that a richly conceived and well-managed e-identity management and security architecture could result in a higher number of citizens captured into the National Database and enabling access to government resources and the advancement of Sustainable Development. Finally, that poorly conceived and ill-managed e-identity management and security architecture frameworks or otherwise, could lead directly or indirectly to ineffective and inefficient planning, organizing, leading and controlling of the processes of citizens gaining access to state resources and

advancing the UN Sustainable Development Goals (SDGs) in a given nation. From the analyses of the research questions, the findings have shown that Nigeria's poor planning and prioritization of e-identification and security programs and the lack of political will on the part of the Federal Government to enforce legislations on e-identification and security, may adversely affect the likelihood of the country attaining of the United Nations Sustainable Development Goals (SDGs, 2030), if the recommendations and suggestions proffered in this research are not strictly adhered to and rigorously implemented by the Federal Government of Nigeria.

5.3. Recommendations

The research demonstrates that planning and prioritization of e-identification and security programs by any government is fundamental to achieving the United Nations Sustainable Development Goals (SDGs 2030) and that the ability of governments to build capacities in six fundamental areas; to measure progress, promote equity, adapt to shocks, transform development pathways, link knowledge with action and govern cooperatively are veritable governance systems that promote sustainable development and therefore, recommends as follows:

- I. That the Federal Government of Nigeria articulates governance priorities for developmental programs such as identity management and security, manage global financial shocks by appropriately regulating the banking industry, currency exchange rate and sovereign wealth fund, controlling and managing viable harvests, lowering demands for foreign made goods and reducing the dependency on fuel importation.
- II. That the Federal Government mitigates against social protection and promote equity in the country, by improving on the administration of social protection systems, evenly applying the federal character principles, distributing and allocating resources and siting infrastructure projects evenly and appropriately across the federation. Restructuring

governance systems and appointments into the Federal Public Service and distributing the basics that Nigerians need to live and thrive by gaining access to government goods, services and social safety nets through enrolling into the National Identity Database.

- III. That the Federal Government of Nigeria demonstrates the political will to enforce existing legislations on e-identification such as the Nigerian Data Protection Regulation 2019 (NDPR) and completing the passage of the draft Privacy Data Protection Bill 2020 (NIMC) stuck in the National Assembly. Similarly, that they should enforce the use of the National Identification Number (NIN) for certain essential services as provided by the NIMC Act, 23 of 2007, section 27, the mandatory use of NIN regulations 2015 and the Nigerian Biometric Standards Regulations 2017. In addition, that they should ensure that every federal agency with statutory functions that requires identity management should maintain a NIN and Biometric Standards Compliance Register within its agency and update the Commission on monthly basis on the number of identification added to or renewed on the identity database of the agency and that the National Identity Management Commission commence publishing on its website the details of its monitoring and enforcement activities on quarterly basis pursuant to the regulations.
- IV. Again, that the Federal Government of Nigeria demonstrates the political will to completely harmonize the database of all existing Federal and State Functional Agencies with the National Identity Management Commission's National Identity Database to create a Comprehensive Biometric Database for the country of all users of the services of the functional agencies by assigning the unique National Identification Number (NIN) to everyone captured into the National Identity Database.

- V. Federal Government adopts a cashless society system to compel more citizens to enroll into the National Identity Database, to help resolve the existing security challenges such as kidnapping and demands for ransom. The process when fully implemented will go a long way in improving the economy and tracking all financial transactions and money flows within the country, and thereby effectively helping to combat crimes and corruption.
- VI. To effectuate more enrollment into the National Identity Database, that the National Identity Management Commission does the following: (a) declare a timeframe for all citizens and legal residents who have not enrolled into the National Identity Database to do so before the expiration of the designated date or face penalties for non-conformance. (b) cover vulnerable persons such as the disabled and forcefully displaced persons by taking the registration and enrollment equipment and accessories to the centers, where these persons reside and use special and advanced equipment and accessories to capture the disabled amongst them. (c) create more awareness and benefits of the scheme to members of the public by organizing more awareness campaigns across the country, partnering more effectively with stakeholders at the wards, local government and state government levels. The Commission should also ensure the effective collaboration and supervision of ecosystem partners on the procedures of capturing citizens and rectifying challenges to promote effectiveness and efficiency of the process. (d) that the Federal Government votes and allocates more funds to National Identity Management Commission to enable the Commission improves on its operations, recruit and train more staff and acquire more enrollment equipment and accessories for their offices dotted across the country.

VII. Finally, to improve the interplay between the National Identity Management Commission, Security and Functional Agencies in the country, that the Federal Government of Nigeria improves the relationship between the agencies and train the staff of these agencies on the use of real time technologies, improve the monitoring and oversight activities of the security agencies with NIMC by establishing an Independent Watchdog Agency to monitor the compliance of procedures and laws on data management and linkage. And that NIMC should establish a crime monitoring unit within the Commission that will manage the interface between NIMC, Federal and State Government Security Agencies to effectively exchange information, verify and authenticate crime suspects in the custody of government agencies such as the Nigeria Customs Service, Nigeria Police Force, Nigeria Correctional Services, Nigerian Navy, Nigerian Army, Nigerian Airforce, Nigeria Immigration Service, Nigeria Security and Civil Defense Corps and other paramilitary agencies across the country.

5.4. Contribution to Knowledge

Despite the existing literature and academic publications available on identity management, security and sustainable development, this research has been able to demonstrate more effectively that planning and prioritization of e-identification and security programs by any government is fundamental to achieving the United Nations Sustainable Development Goals (SDGs 2030). This is so, because identity provides the data and statistics for including the unbanked and less privileged members of society into the National Identity Database, which will improve socio-economic planning, generate more revenue, effectuate the distribution of government goods and services and social safety nets for all citizens and legal residents by the

government to enhance better living standards and the attainment of the sustainable development goals.

From the research findings in line with the assumptions of this research; (a) that the level of e-identity management infrastructure and security available in a given society determines the degree of success or failure of accomplishing sustainable development goals (SDGs), (b) that poorly conceived and ill-managed e-identity management and security architecture may exclude a huge number of citizens from benefiting from government administered social security safety nets. (c) Conversely, that a richly conceived and well-managed e-identity management and security architecture could result in a higher number of citizens being captured into the National Database and enabling access to government resources and the advancement of Sustainable Development and (d) finally, that poorly conceived and ill-managed e-identity management and security architecture frameworks could lead directly or indirectly to ineffective and inefficient planning, organizing, leading and controlling of the processes of citizens gaining access to state resources and advancing Sustainable Development Goals (SDGs) in a given nation. The research was able to demonstrate that Nigeria's poor planning and prioritization of e-identification programs and the lack of federal government capacity in six areas; to measure progress, govern cooperatively, effectively link knowledge with action, adapt to global financial shocks and promote equity may be hugely responsible for the poor enrollment of citizens into the National Identity Database, since the inception of the National Identity Management Commission in 2007, which left over 140 million out of 195 million citizens and legal residents unregistered into the National Identity Database as at 2018 based on the World Bank Dataset records of 2018. Thus, confirming the research assumptions that a poorly conceived and ill-managed e-identity management and security architecture may exclude a huge number of citizens from benefiting

from government administered social security safety nets. And that the level of e-identity management infrastructure and security available in a given society determines the degree of success or failure of accomplishing the UN Sustainable Development Goals (SDGs). Consequently, the lack of political will to do the needful as expressed by the research finding puts in doubt the ability of Nigeria to achieve the sustainable development goals by 2030 if the Federal Government does not summon the courage to demonstrate the political will, to adopt and implement the recommendations proffered in this research, being the basis of the statement of problem of this research.

5.5. Suggested Area of Further Research

From this study on E-Identity and Security: A Study of the Role of Identity Management in Sustainable Development, the researcher hereby suggests the following areas of further studies.

- 1) Study of E-Identity Management and Electoral Processes in Nigeria
- 2) E-Identity and E-Monitoring in Nigeria: Review of the Security Architecture in Nigeria.

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Appendixes

BIODATA

SURNAME	EJIOFOR
OTHER NAMES	Titilola, Tomilola
GENDER	Female
STATE of ORIGIN	Ekiti
MARITAL STATUS	Married with Two Adult Children
NEXT of KIN	Philip Ejiofor (Husband)
CONTACT INFORMATION	email: tejiofor@yahoo.com ejiofor.titilola@lcu.edu.ng Phone: +234-803-307- 4377
EDUCATIONAL QUALIFICATION	(a) B.A. (Hons) Russian Language, University of Lagos 1988 (b) LLB, University of Lagos, 2002 (c) BL, Nigerian Law School, 2004
PROFESSIONAL ASSOCIATION	Nigerian Bar Association Fellow, Institute of Corporate Administration of Nigeria
PLACE OF WORK	National Identity Management Commission
POSITION	Deputy Director
STATUS	Regional Coordinator (South-West)

JOB EXPERIENCE

(1) National Identity Management Commission. Deputy Director, South West Region (2014 to Date)

(2) Chief Ladi Rotimi Williams Chamber. Practice Manager/Senior Counsel (2009 to 2013)

(3) FCMB, Branch Manager (2006 -2008)

(5) Stanbic IBTC, Deputy Manager (2004 – 2006)

(6) Chartered Bank, Deputy Manager 1989 – 2004)

(7) NYSC, United Nations Information Centre 1988 / 1989

Training and Course.

1. Fundamentals of Treasury Management (H. Pierson)
2. Total Quality Management (Phillips Consulting)
3. Basic Accounting for Financial Institutions (IBFC)
4. Commercial Credit Analysis for Lenders (H. Pierson)
5. Advanced Anti-Money Laundering Compliance Programme (DataPro)
6. Maritime Arbitration: Drafting Dispute Resolution Clause Workshop (Maritime Arbitrators Association of Nigeria).
7. Legal and Enforcement Training for NIMC. (PIDORS Consultancy)

8. Effective Leadership and Good Governance
(Citizenship and Leadership
Training Centre)
 9. Security and Supernumerary Studies
(Nigeria Police Force)
 10. Managing the Human Resource (FITC)
-

Publications:

1. **Amodu, A. and Ejiofor, T.** *E-Identity and Security: Study of the Role of Identity Management in Sustainable Development* **Advances in Social Science Research Journal** Vol 9. No. 7. July 2022
-

Conferences

1. *Application of Information and Communications Technology to Teaching, Research and Administration. (International Multi-Conference on ICT Applications),* November 29 – December 1, 2021
2. *2022 International Conference on Security, Insecurity and World Peace: The Humanistic Perspective. College of Humanities and Culture.* Osun State University.
Presentation. *E-Identity and Security: Study of the Role of Identity Management in Sustainable Development* by **Prof. Akeem Amodu and Ejiofor Titilola.** March 3, 2022
3. *The 4th Annual Meeting of the ID4Africa Movement: Harmonization of Identity Schemes.* **ID4Africa,** April 24 – 26, 2018. International Conference Centre, Abuja.
4. *National Identity Day: Identity, A Tool for Sustainable Development, Digital Economy and National Security.* **National Identity Management Commission,**

September 16, 2021. International
Conference Centre, Abuja.

5. *National Identity Day: Identity Deserves a Day.*
**National Identity Management
Commission.** September 16, 2022.
International Conference Centre, Abuja.

Signature

Date

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University Compliance Certificate

This is to certify that this Thesis was written by Ejiofor, Titilola, Tomilola, with Matric Number LCU / PG / 001993 in the Department of Politics and International Relations, Faculty of Management and Social Sciences, Lead City University, Ibadan is in full compliance with the approved University format and style.

Signature

Date

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