Consultancy Study on Developing Sustainable Digital Entrepreneurship Business Model in a Digital Nigeria.

LOT: RD-8

FINAL REPORT

Synopsis on Digital Evolution & Business Models;
Findings and Analysis from the Field Survey Exercise;
Benchmarking Analysis of ICT Innovation and Adoption Activities in Developing Countries; &
Final Conceptual Framework for Sustainable Digital Entrepreneurship & Business Model Development; Observations and Recommendations.

Submitted to:

NIGERIAN COMMUNICATIONS COMMISSION

Submitted by:

Perazim Development & Planning Limited

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Synopsis:	This final report contains: a. Synopsis on digital evolution and business models. b. Findings from field survey exercise which includes: - Digital entrepreneurship and business landscape in Nigeria - Support initiatives for digital entrepreneurs and businesses - Rate of Startup Establishment in Nigeria - Perception of entrepreneurs about the Nigerian business environment - Challenges faced by digital entrepreneurs and businesses in Nigeria - Reasons for Startup failure in Nigeria - Startup failure rate in Nigeria c. SWOT analysis of digital entrepreneurship and business landscape in Nigeria. d. Benchmarking analysis of ICT innovation activities, adoption practices and impacts in selected developing countries. e. Conceptual framework for sustainable digital entrepreneurship and business model development in Nigeria. f. Conceptual framework for a supportive ecosystem for digital entrepreneurship & businesses in Nigeria. g. Constraints in business model development faced by Nigerian digital businesses. h. Role of the Telecoms sector in supporting digital entrepreneurship and businesses in Nigeria. i. Observations. j. Conclusion and Recommendations. This document is version-controlled.
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List of Abbreviations and Acronyms

4G	Fourth Generation Mobile Communication System
4IR	Fourth Industrial Revolution
5G	Fifth Generation Mobile Communication System
AfDB	Africa Development Bank
AI	Artificial Intelligence
AIM	Atlas Innovation Mission, India
ATL	Atal Thinkers Lab (India)
BOI	Bank of Industry
CAC	Corporate Affairs Commission
CAPI	Computer Aided Personal Interviews
CBN	Central Bank of Nigeria
CISO	Chief Information Security Officer
CIT	Company Income Tax
COVID-19	Corona Virus Disease
CSR	Corporate Social Responsibility
CSV	Comma Separated Version
D4SME	Digital for SMEs Global Initiative
DTT	Digital Terrestrial Television
e-NAM	Electronic National Agriculture Market, India
FIRS	Federal Inland Revenue Service
FMoCDE	Federal Ministry of Communication, Innovation and Digital Economy
GDP	Gross Domestic Product
GEEP	Government Enterprise Empowerment Program
GPS	Global Positioning System
GSER	Global Startup Ecosystem Report
HND	Higher National Diploma
ICT	Information Communication Technology
I-DICE	Investment in Digital and Creative Enterprise
IOT	Internet of Things
IT	Information Technology
ITAN	Information Technology Association of Nigeria
LTE	Long-Term Evolution
MDA	Ministry, Department and Agency
MDC	Mobile Device Capture
MEIT	Ministry of Electronics and Information Technology, India
ML	Machine Learning
MSME	Micro, Small and Medium Enterprise
MSMEDF	Micro, Small and Medium Enterprise Development Fund

NACCIMA	Nigeria Association of Chambers of Commerce Industry Mines and Agriculture
NASENI	National Agency for Science and Engineering Infrastructure
NBTI	National Board for Technology Incubation
NCC	Nigerian Communications Commission
NCDIE	National Council for Digital Innovation and Entrepreneurship
NCS	Nigerian Computer Society
NDEPS	National Digital Economy Policy and Strategy
NDHM	National Digital Health Mission, India
NDISEP	National Digital Innovation Entrepreneurship and Startup Policy
NDPR	Nigeria Data Protection Regulation
NESG	Nigerian Economic Summit Group
NGO	Non-Governmental Organization
NIPC	Nigerian Investment Promotion Commission
NIRA	Nigerian Internet Registration Association
NITDA	National Information Technology Development Agency
NPCI	National Payments Corporation of India
NODITS	Nigeria Office for Development of the Indigenous Telecoms Sector
NOFBI	National Optic Fibre Backbone Infrastructure, Kenya
NOUN	National Open University of Nigeria
NRF	National Research Fund
NSIP	National Social Investment Programme
OECD	Organisation for Economic Co-operation and Development
OIIE	Office for ICT Innovation and Entrepreneurship
OND	Ordinary National Diploma
ONDI	Office for Nigerian Digital Innovation
PC	Personal Computer
PIN	Personal Identification Number
PM-WANI	Prime Minister Wi-Fi Access Network Interface, India
PRODA	Projects Development Institute
PwC	Pricewaterhousecoopers Limited
SADA	South Africa in the Digital Age
SAV	SPSS System File Format
SME	Small and Medium Enterprise
SMEDAN	Small and Medium Enterprises Development Agency of Nigeria
SPSS	Statistical Package for Social Sciences
SWAYAM	Study Webs of Active-Learning for Young Aspiring Minds, India
SWOT	Strength, Weakness, Opportunity and Threat
TETFund	Tertiary Education Trust Fund

UPI	Unified Payment Interface
US	United States
USD	United States Dollar
USF	Universal Service Fund, India
USPF	Universal Service Provision Fund
VCs	Venture Capitalists
Wi-Fi	Wireless Fidelity
WANI	Wi-Fi Access Network Interface
WTDC-22	World Telecommunication Development Conference 2022
XLS	Microsoft Excel Spreadsheet File Format
YC	Y-Combinator
YouWIN	Youth Enterprise with Innovation in Nigeria

Executive Summary

Synopsis

ICT has proven to be a vital tool for the digital transformation of businesses across various sectors. The advancements in telecommunications and ICT have greatly changed the business landscape globally. The emergence of mobile communications, social media, cloud technologies, e-payment gateways, and e-commerce birthed the era of digital business and broke the barriers of cross-border trade.

NCC is the independent regulator of the Nigerian telecoms industry and is responsible for ensuring the provision of qualitative and efficient telecommunications services in Nigeria, a responsibility that it has lived up to over the years. NCC has remained committed to promoting innovation and digital entrepreneurship in Nigeria.

The Commission has implemented several initiatives and programs aimed at supporting digital entrepreneurs and startups in Nigeria. Some of this include hackathons, grants, digital job creation, training and capacity development, etc. The sustainability of digital businesses and startups in Nigeria has become a concern for many stakeholders due to the high mortality rate of these businesses.

This project focuses on the *"Study on Developing a Sustainable Digital Entrepreneurship Business Model in a Digital Nigeria".*

Methodology

Project implementation was achieved through a combination of methods. These include:

a. **Review of documentations, reports and publications** relevant to the project such as OECD Digital for SMEs Global Initiative (d4SME) Brochure 2019, ITU's World Telecommunication Development Conference 2022 (WTDC-22) Final Report, ITU's Bridging the Digital Divide Report 2017, SMEDAN's Nigeria MSME report of 2022, PwC's MSME Survey 2020, NDEPS 2020-2030, NDISEP 2021, etc.

b. **Stratified sampling** of respondents (digital entrepreneurs, Startups, private businesses, NGOs, government MDAs, etc.) across major metropolitan cities (Lagos, Port-Harcourt, Enugu, Kano, Abuja and Yola) in the six geopolitical zones in Nigeria. A CAPI software tool was used for quantitative data collection from digital entrepreneurs, Startups, businesses, etc; all gathered quantitative data were analysed to deduce findings.

c. **Qualitative Survey**, **Data Collection and Analysis** was also done to validate and complement findings from the quantitative analysis. Key stakeholders from selected private and government organizations were engaged and interviewed to obtain data across different viewpoints on the research study. Some interviewees include: SMEDAN, NACCIMA, NITDA, NOUN, CBN, NITDA, NESG, Venture Capitalists, Digital Entrepreneurship Experts, Tech hubs, Incubators, Accelerators, Media houses, etc.

d. **Benchmarking** and analysis of ICT Innovation and adoption activities in selected developing countries (Kenya, South Africa and China).

e. **Creation of a conceptual framework** for the development of sustainable digital entrepreneurship business models.

Findings from Field Survey Exercise

Demographic and Socioeconomic Attributes of Respondents: Most of the sampled respondents were in urban areas, 67% were male while 32% were female. About 70% were between the ages of 26 and 50 years. Over half (71%) are married; 68% have tertiary education as their highest form of education (with Bachelors' degree and HND being the most prevalent form of highest qualification of respondents).

41% of the sampled businesses are less than 5 years old, and 65% are setup as partnerships (i.e. having more than one founder). Only 2.8% of sampled respondents had a form of physical disability.

Digital Entrepreneurship and Business Landscape in Nigeria: 36% of digital entrepreneurs favour the provision of consumer goods and services over other areas – this is largely due to the huge consumer base for these products and services. Examples include: consumables, clothing, food, cars, fashion, logistics/delivery, utility, etc. More than half (over 50%) of the businesses sampled are registered with the CAC – mostly under the "Business Name" registration category. About 42% are registered with SMEDAN. Remarkably, 70% have a corporate bank account for business operations – thanks to the availability of several commercial and digital banks in Nigeria. Only 30% have a running website and quite worrisome, less than 30% have a registered trademark or patent. The survey data showed a decline in the rate of Startup and digital business launches in Nigeria in the last 4 years i.e. from 2019/2020. This decline can be attributed to various macroeconomic factors such as high inflation rate, high cost of living, high foreign exchange rate, emigration of skilled professionals, difficult access to funding and the problem of insecurity. The average rate of Startup and digital business launch in Nigeria in the last 10 years is estimated at 14.3%. 65% of Nigerian digital businesses sampled are formed as partnerships having at least 2 owners; 35% are sole proprietorships. Notably, about 76% of sampled businesses offer a minimum of 3 distinct products and services. 34% of Nigerian digital entrepreneurs and businesses sampled have never received any form of funding; Less than 35% have received below N10 million in funding since their inception. About 34% of sampled business earn below N200,000.00 monthly; about one-third earn from N200,000 and above but less than N400,000; only 3.6% of sampled business earn at least N1 million monthly.

Support Initiatives for Digital Entrepreneurship & Businesses in Nigeria: this includes the formulation of enabling regulations and policies such as NDEPS 2020 -2030, NDIESP 2021, NPPIC 2021, Nigeria Startup Act 2022, National Policy on MSME 2015 – 2025, Nigeria Finance Act 2019, Mobile Money Regulatory Framework 2021, Payment Service Bank Regulatory Framework (revised 2021), Nigeria Data Protection Regulation (NDPR) 2019, etc. It also involves funding, special Interventions and strategic support from organizations such as CBN, BOI, SEMDAN, AfDB, NCC, USPF, NITDA, etc.

Perception of Entrepreneurs about the Nigerian Business Environment: Over 40% of the sampled entrepreneurs rated tax regulations for startups and entrepreneurs, access to funding and investors, policy implementation for growth of digital entrepreneurship, cybersecurity, ease of running a business (operational costs), Availability and access to infrastructure as poor aspects of the Nigerian business environment. Access to customers, level of competition, social media domain, and ease of company registration were rated as the well-performing aspects of the Nigerian business environment.

Challenges Faced by Digital Entrepreneurs and Startups: Over 55% of sampled digital entrepreneurs and businesses revealed that access to funding, inflation effects, operational and running costs, stiff competition, cybersecurity issues, poor buying power and patronage, access to foreign exchange, electricity supply, poor national infrastructure, and multiple taxation, are the major challenges they face in operating their businesses.

Reasons for Startup Failure in Nigeria: The top 5 causes of Startup failure in Nigeria are cybercrime, economic instability, unfavourable government policies, high operational/running costs and lack of funding. 6 in 10 Nigerian Startups (60%) fail within the first one to five years of commencing operations.

SWOT Analysis of Digital Entrepreneurship and Business Landscape in Nigeria

Strengths	Large youthful population of entrepreneurs; Strong social media presence; Good teledensity indices (115.70% as of July 2023); Honeypot for sponsorship of tech-based innovations by international VCs; Healthy competition; Large customer base; Ease of registering a business; Strong presence of technology hubs, incubators and accelerators; Presence of enabling policies.
Weaknesses	Slow implementation of enabling policies; Access to funding; Poor national infrastructure; Cost of data; Cost of ICT assets/toolkits; Unharmonized tax regime; Ease of doing business.
Opportunities	Consumer-based and innovation-driven products and services; Improved connectivity and data rates from the rollout of 5G network and expansion of 4G/LTE network; Synergy between stakeholders in the digital entrepreneurship ecosystem.
Threats	Economic instability; High inflation rate; High interest rate; Problem of insecurity; Unstable and high foreign exchange rate.

Benchmarking of ICT Innovation and Adoption Activities

Reasons for Choice of Selected Countries (Kenya, South Africa and India): Kenya is the largest economy in the East Africa sub-region. It is also one of Africa's fastest-growing economies. South Africa is Africa's most technologically advanced and developed Startup ecosystem. It has been in the top 3 most innovative African countries for the last 3 consecutive years. India is the 3rd most populous country in the world. It has been one of the 40 most innovative countries globally for the last 2 consecutive years and boasts 56 million MSMEs as of 2022.

Key ICT Innovation and Adoption Initiatives

Nigeria	The NDEPS (2020 - 2030) is Nigeria's blueprint for transition to a digital economy; It features 8 pillars. Recent ICT initiatives include ICT parks, digital literacy, skills trainings, broadband penetration, etc.
Kenya	Kenya Digital Economy Acceleration Project 2023 – 2028 is in consonance with its National ICT strategy (2020 – 2024). The initiative focuses on rapid ICT and telecoms infrastructure growth and development; broadband penetration, digital migration, e-Learning and skills development.
South Africa	The South Africa in the Digital Age (SADA) initiative was launched in 2019 to promote inclusive growth for all in the digital age. SADA aims to address the human capital challenges of South Africa in preparation for the Fourth Industrial Revolution (4IR). It also leverages strategies that will stimulate government support for a digital South Africa.
India	The Digital India initiative was launched in 2015 with the goal of helping India achieve the 17 Sustainable Development Goals (SDGs) by 2030. The imitative focuses on infrastructure growth and development, rural telephony and broadband penetration, digital skills development and local content development

Key Impacts

Nigeria	Increased broadband penetration; Job creation; Investments in the ICT and telecoms sector; Improvements in financial inclusion; Digital literacy and inclusion; Promotion of local content; Diversification of the Economy.
Kenya	Increased digital literacy; Improvements in financial inclusion; Rise in broadband penetration; Job Creation.
South Africa	Digital literacy and inclusion; Broadband penetration; Local manufacturing; Digital jobs creation; Specialized programmes to create skilled ICT professionals; Increased government funding for research and development; Increased readiness for the 4IR.
India	Increased broadband penetration in rural areas, Improvements in digital literacy indices; promotion of local content; improvements in innovation indices; Sustained export of ICT enabled-services.

Key Points deduced from the Benchmarking Analysis

a. Policy implementation is a key driver of the transition to a digital economy.
b. National infrastructure is vital for a thriving digital business landscape.
c. Broadband penetration is a major enabler for ICT growth and development.
d. Macroeconomic factors can greatly inhibit the rate of growth of the ICT ecosystem.
e. Digital literacy is a determinant for use and adoption of ICT.
f. The ICT sector has huge potential for job creation and diversification of the economy.
g. Financial inclusion promotes the adoption of digital products and services.
h. Skilled human capital is an essential component that drives the digital economy agenda.

Conceptual Draft Framework for Sustainable Digital Entrepreneurship and Business Model Development in Nigeria

A conceptual framework for development of sustainable digital entrepreneurship and business models was created. The framework has 6 components and was modelled after a feedback control system to assure the sustainability of digital entrepreneurs and businesses that implement the model. The components of the framework are: Preliminary Business Analysis, Business Model Creation/Innovation, Business Model Implementation, Business Outputs, Business Performance Evaluation, and Business Outcomes. Chapter 4.2.2 contains more details of the conceptual framework. The figure below shows the block diagram of the conceptual framework.

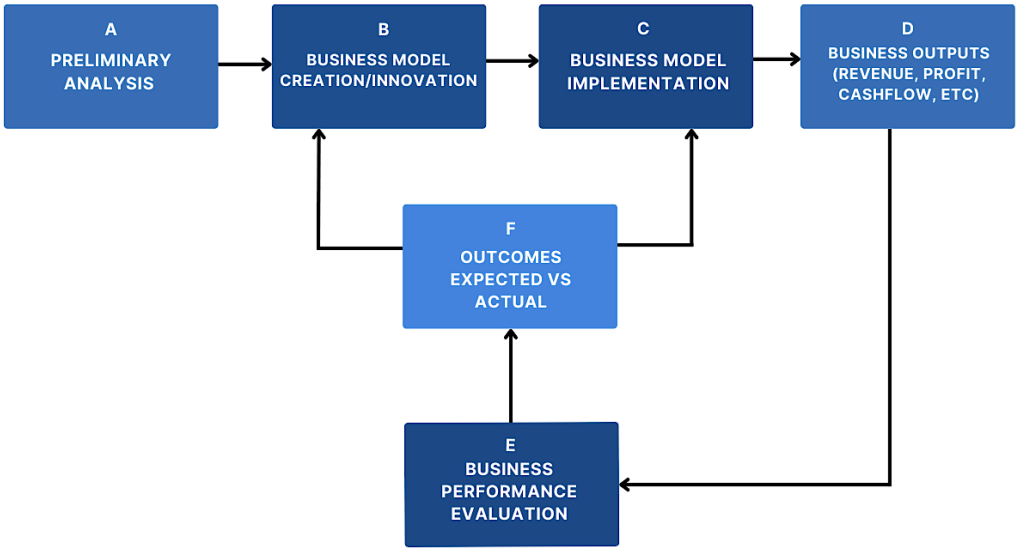

Figure 1: Block Diagram of the Draft Conceptual Framework for Sustainable Digital Entrepreneurship and Business Model Development

Concept for a Supportive Digital Entrepreneurship and Business Ecosystem

Another conceptual framework for a supportive digital entrepreneurship and business ecosystem was also developed. The framework identified 8 key enablers and 5 key drivers for a thriving digital business ecosystem. The key enablers are: Access to funding; Policies and regulations; Ease of doing business; Macroeconomic factors; National infrastructure; Physical and cybersecurity; Digital literacy and access to technology; and Financial inclusion. The key drivers are: Innovation; Technology adoption; Healthy competition; Consumer base; and Business model. More details are contained in chapter 4.3.

Observations

a. There is a very low level of digital literacy in many rural areas across the country.
b. Financial inclusion is a key enabler for digital entrepreneurship and businesses.
c. The proliferation of digital banks in Nigeria has helped many digital businesses execute effectively and transact with customers irrespective of location.
d. Social media platforms like Instagram, Facebook, Twitter, TikTok, and others are practical tools that entrepreneurs and digital firms (particularly in cities) use for customer engagement and advertorials.
e. The problem of insecurity in the North-East, North-West and South-East geopolitical zones is greatly affecting many businesses in these regions.
f. Poor national infrastructure greatly inhibits the logistics value chain for digital businesses.

Conclusion

The transition to a digital economy is essential to preparing for the fourth industrial revolution. Broadband penetration in Nigeria has been on a steady rise in the last five years and has promoted socioeconomic growth and development in the country. Many indigenous businesses have metamorphosed into digital enterprises through the use of digital technologies and the Internet.

Digital businesses in Nigeria are plagued by different challenges such as macroeconomic factors, national infrastructure issues, insecurity, internal capacity problems, etc., hence the need to adopt a sustainable digital entrepreneurship and business model that can assure the success and survivability of digital businesses in Nigeria.

The developed conceptual framework for sustainable digital business model development is guaranteed to help Nigerian digital entrepreneurs and businesses succeed and evolve into global enterprises.

Recommendations

The recommendations are grouped per key stakeholder category and are enumerated as follows:

1. **Government**
   a. Implementation of a robust macroeconomic framework to checkmate the unfavourable macroeconomic effects such as rising inflation rate, foreign exchange rate, etc.
   b. Accelerate the provision of national infrastructure such as electricity, water supply, transportation systems, security, etc.
   c. Increase funding for MSMEs.
   d. Improve government's commitment to policy implementation, monitoring and evaluation.

e. Streamline regulations, reduce and harmonize taxes for MSMEs. China and India recently (post-COVID-19) implemented a short-term tax reduction regime to support MSMEs.
f. Creation of a mentorship programme/framework for digital businesses and Startups to harness the wealth of experience of business professionals across different sectors who can act as mentors and business advisors. The programme delivery can be virtual or physical or a combination of both.
g. Strengthen the government-diaspora linkage to facilitate human capital development, funding, knowledge and technology transfer through special diaspora-sponsored programmes. This strategy is actively used by the Indian and Chinese governments.
h. Strengthen the monitoring framework for government-sponsored Startups and businesses to ensure that business grants are properly utilized for the intended purpose.
i. Facilitate the creation of more digital entrepreneurship centres across the country.
j. Promotion of entrepreneurship education with improved curriculum and strategic support across all levels of education. Nigeria needs to produce more thinkers, innovators, entrepreneurs and problem solvers in readiness for the fourth industrial revolution (4IR).
k. Increase public-private partnerships with tech hubs, accelerators, incubators, etc. to advance capacity building initiatives for digital businesses and Startups across the country.
l. Facilitate access to foreign markets for export.
m. Strengthen synergy with organizations like NASENI, PRODA, etc., to facilitate location production.

2. Digital Businesses, Entrepreneurs and Startups

a. Ensure to document and validate a proper business model before commencing business operations.
b. Embrace the culture of periodic business performance evaluation.
c. Business decisions should be based on empirical data and not perceptions.
d. Institute a culture of accountability and book keeping.
e. Ensure to know the difference between revenue and profit; cashflow should be considered more important than profit within the first six months to one year.
f. Think big, start small and plan for scale-up.
g. Constantly engage with customers to obtain feedback on products and services, as well as customer needs.
h. Practice the "Kaizen" principle of continuous improvements.
i. Leverage new and emerging technologies as they can provide the needed competitive advantage.

3. Financial Institutions

a. Improve access to funding for MSMEs.
b. Creation of uniquely tailored funding packages for MSMEs.
c. Promote financial inclusion through provision of technology-driven and innovative financial services, especially to rural areas.
d. Creation of a credit-score system for MSMEs to rate and track credit worthiness of MSMEs.
e. Facilitate financial literacy by creating awareness and providing financial education for start-ups and businesses.

4. Telecoms & ICT Industries (Private Organizations, Service Providers, and Regulators)

a. Encourage the funding of digital Startups and innovation-based research programmes as part of corporate social responsibility (CSR).
b. Continuous broadband penetration and provision of telephony services to rural areas.
c. Provision of incentives and special packages for MSMEs such as ICT interventions, partnership offers, etc.
d. Subsidize the cost of ICT and telecoms services in rural areas.
e. Early transition to new and emerging technologies such as AI, Blockchain, IoT, etc.
f. Facilitate digital literacy initiatives such as trainings and capacity development programmes for consumers, businesses owners and start-ups.
g. Promote innovation and technology adoption among digital start-ups through competition programmes like hackathons, code camps, etc.
h. Encourage the adoption of indigenous technologies, products and services in the ICT and telecoms sector.
i. Facilitate the provision of sandboxing for startups and digital businesses.
j. Provision of digital infrastructure support such as digital toolkits, subsidized cloud hosting services, etc. to digital start-ups.
k. Ensure continuous protection of the Nigerian cyberspace.

1. Background and Introduction

1.1 Synopsis on Digital Evolution and Business Models

Commercial businesses have been in existence for almost as long as mankind. The earliest recognised form of trading was "trade by barter". Over the years, several other business and trade models have emerged for individual, small-scale, medium-scale, large-scale, and cross-border businesses.

The advent of the personal computer and the birth of the internet brought about a remarkable change in how humans conduct business. Computer software has improved operational efficiency for medium-scale and large-scale businesses; the ability to transact beyond borders became priceless, thanks to the Internet.

The growth of the global telecommunications industry and the advancement of digital technologies have shaped our way of life; man has now become a digital species. Over 80% to 90% of our lives rely on technology for proper functioning; this ranges from communication, collaboration, commerce, etc. The figure below shows the evolution of enabling technologies for businesses over the last century.

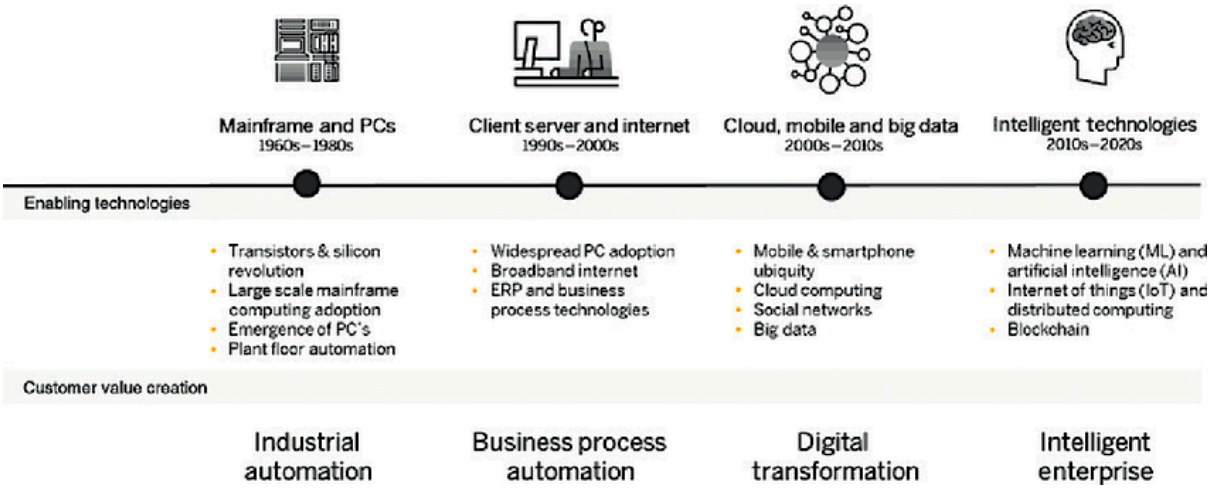

Figure 2: Evolution of Enabling Technologies for Businesses

In recent years, social media has transcended the frontiers of digital marketing and e-businesses globally. The concepts of influencers, advertorials, ratings, etc. have been totally transformed. One single social media post has the capability of reaching millions of people worldwide. Social media ads can be designed to target specific demographics and geographic locations, thereby extending the reach of businesses.

A proper and elaborate business model should cater to the following pillars: value offering, market, internal capabilities, economic factors, competitive strategy, and investment factors.

From the late 1990s until today, digital transformation has evolved to become a critical component of any thriving business. Today, digital transformation is being applied to numerous businesses to help them engage customers, empower employees, transform

products, and optimise operations. The businesses that will survive the 21st century are those willing to embrace digital transformation. The figure below shows the evolution of digital transformation.

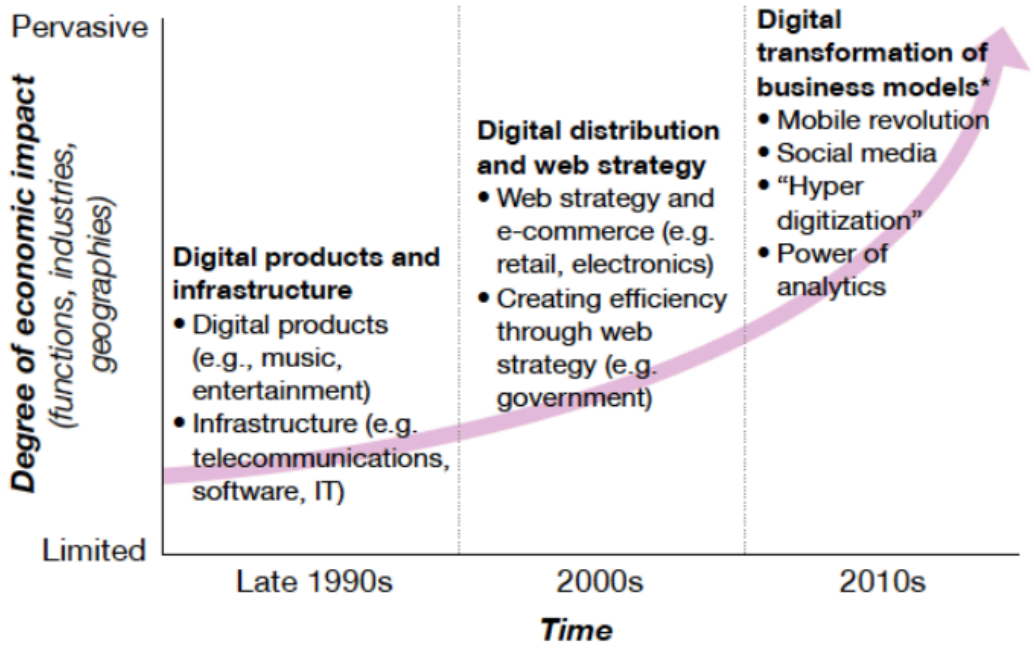

Figure 3: Evolution of Digital Transformation

In Nigeria, digital transformation is fast gaining ground considering the level and adoption of new and emerging technologies, the presence of tech hubs, the number of digital innovation outputs, and the concentration of tech startups. Several policies, such as the National Digital Economy Policy and Strategy (NDEPS) 2020–2030 by the Federal Ministry of Communications, Innovation and Digital Economy (FMoCDE); the National Digital Innovation, Entrepreneurship, and Startup Policy (NDISEP) by the National Information Technology Development Agency (NITDA); the Nigeria Startup Act of 2022, etc., have been put in place to enable the growth and development of digital entrepreneurship in Nigeria.

Despite the numerous enabling policies, there is a high mortality rate for digital businesses and startups in Nigeria.

This project focuses on "**Consultancy Study on Developing Sustainable Digital Entrepreneurship Business Model in a Digital Nigeria**."

1.2 Aim and Objectives of the Project

This study aims to investigate developing a sustainable digital entrepreneurship business model in a digital Nigeria. The following objectives have been set:

a. To investigate the current level of digital start up failure in Nigeria.
b. To analyse the factors responsible for high mortality rates for Nigerian digital enterprises.
c. To investigate the prevalence of use of business models in digital enterprises in Nigeria.
d. To ascertain why majority of Startup business models fail.
e. To define metrics/model for Nigerian digital startups that ensure sustainability in business model development.
f. To develop a framework for the Commission to sensitize and support digital Enterprises in business model development.

1.3 Scope of Work

The scope of work for the project includes the following:

a. The study shall conduct an in-depth qualitative and quantitative research approach with empirical and based line data to support the findings.
b. The study shall cover major metropolitan cities (Lagos, Port-Harcourt, Enugu, Kano, Abuja and Yola) across the six geopolitical zones in Nigeria within a set of purposively sampled organizations focused on Nigerian Digital Entrepreneurs. This will aid to assess the challenges of digital Startups sustainability, level of mortality rate, and development and proffer solutions using the best model or framework.
c. The scope of service shall also cover specifically the rate of Startup establishment and failure in Nigeria and its causes.
d. The Study shall benchmark and present ICT innovation activities and adoption practices from other developing countries and consider the impact of ICT innovation activities in those countries in recent times**.**
e. The study shall identify the most significant constraints in business model development faced by Digital Enterprises.
f. The study shall analyse and document findings from key informant interviews/discussions/communications with major stakeholders, and review of available data sources related to the project scope, shall be collated and reported.

2. Implementation Approach and Methodology

2.1 Implementation Approach

Project implementation was done in incremental stages as enumerated below.

a. **Review of Relevant Reports & Statistics; Planning and Preparation**

This involved the following activities:

- Study of reference reports.
- Design and Documentation of survey and data collection instruments.
- Identification of target respondents.
- Design and Development of survey instruments.
- Inception reporting.

b. **Field-based Data Collection** which involved:

- Multistage and stratified sampling of target respondents.
- Face-to-face interview-based survey using electronic data collection toolkits.

c. **Qualitative Analysis** which involved structured interviews and discussions with stakeholders and subject matters experts.

d. **Quantitative Analysis** which involved:

- Tabular and graphical analysis of data.
- Formulation of inferences based on descriptive and inferential statistics.

e. **Development of a conceptual, sustainable digital entrepreneurship business model** which required the following:

- Benchmarking of ICT innovation activities and adoption practices from other developing countries.
- Identification and outlining of components for a sustainable digital entrepreneurship business model.
- Development of a conceptual sustainable digital entrepreneurship business model.
- Review and feedback management from key stakeholders on the draft sustainable digital entrepreneurship business model.

f. **Reporting**.

The figure below summarizes the key implementation approaches for the project.

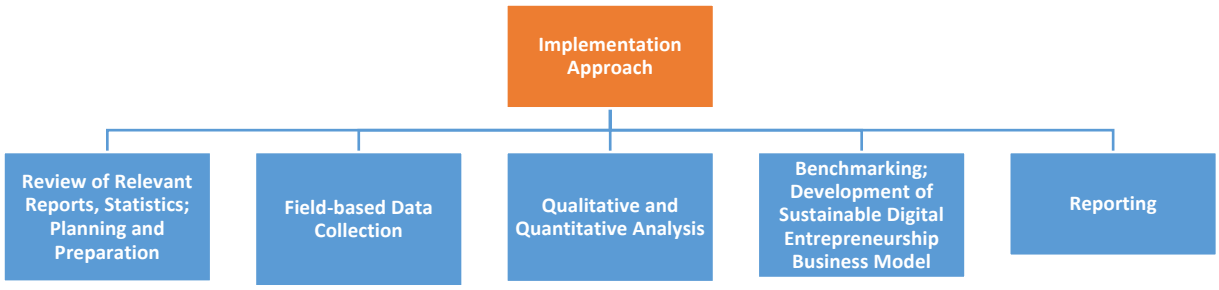

Figure 4: Key Implementation Approaches

2.2 Implementation Methodology

The study design was primarily a field survey, which involved data collection from a pre-defined study population as well as analysis of the gathered data. The following sections enumerate the methodology for project implementation.

2.2.1 Survey Population and Target Respondents

The target population for the survey were "**individuals and businesses**" in the digital entrepreneurship and business ecosystem in Nigeria. The figure below shows the different respondent groups.

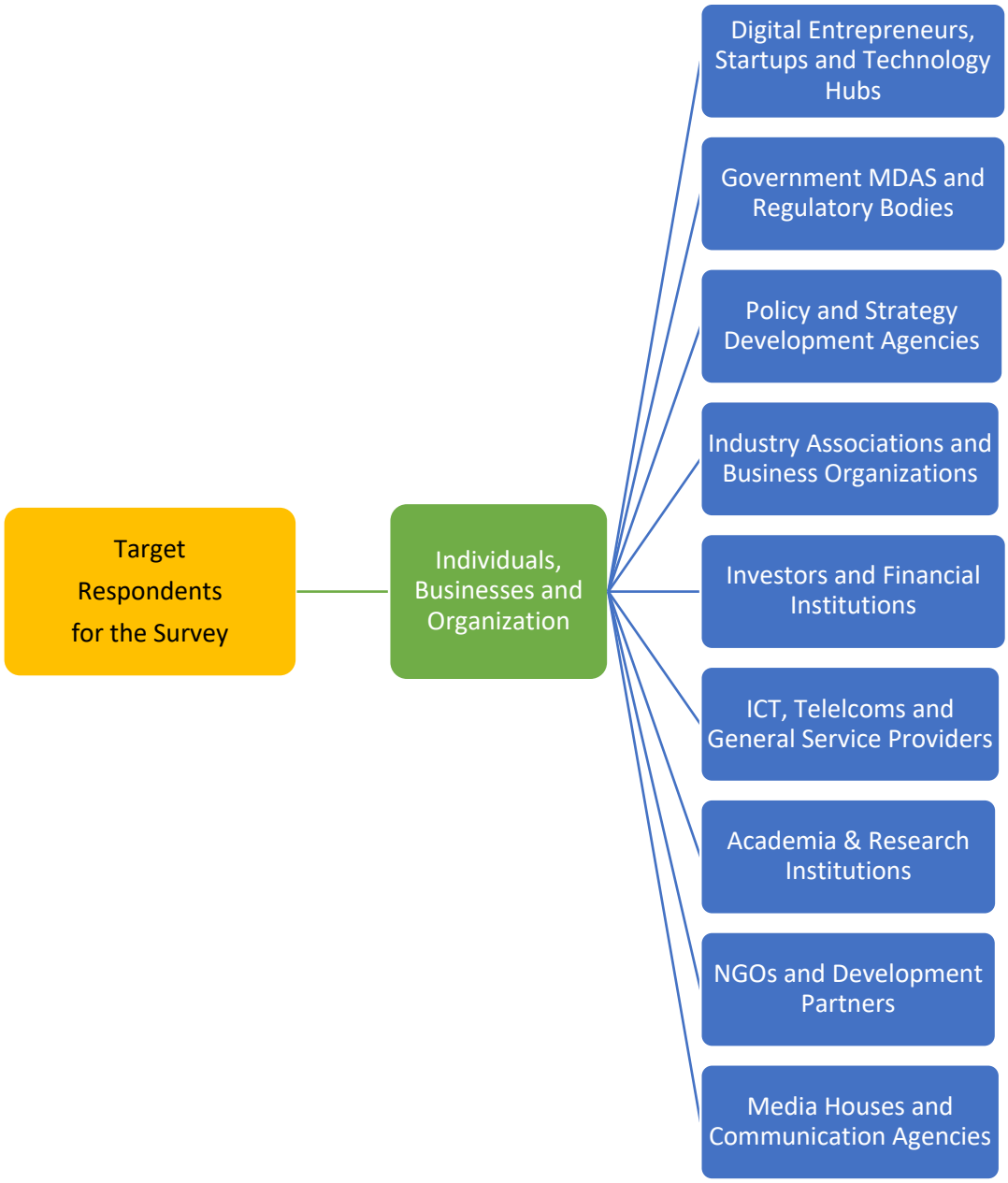

Figure 5: Target Respondent Groups

The target respondents were drawn from the target respondent groups shown in the figure above. Some key respondents are enumerated below.

a. **Digital Entrepreneurs, Startups and Technology Hubs**
   - Indigenous digital entrepreneurs and startups operating in Nigeria.
   - Founders and representatives of successful digital businesses in Nigeria.
   - Representatives from innovation ecosystems and technology clusters.

b. **Government MDAs and Regulatory Bodies**
   - Federal Ministry of Communications, Innovation and Digital Economy (FMoCDE).
   - National Information Technology Development Agency (NITDA).
   - Small and Medium Enterprises Development Agency of Nigeria (SMEDAN).
   - Nigerian Investment Promotion Commission (NIPC).
   - Central Bank of Nigeria (CBN), Federal Ministry of Finance, and other relevant financial regulatory bodies.

c. **Policy and Strategy Development Agencies:**
   - Office for Nigeria Digital Innovation (ONDI).
   - Office for ICT Innovation and Entrepreneurship (OIIE).
   - Federal Ministry of Budget and National Planning.
   - National Population Commission (NPC).
   - Federal Ministry of Trade and Investment.
   - Federal Ministry of Youth and Sports Development.

d. **Industry Associations and Business Organization:**
   - Nigerian Association of Chambers of Commerce, Industry, Mines and Agriculture (NACCIMA).
   - Nigerian Economic Summit Group (NESG).
   - Information Technology Association of Nigeria (ITAN).
   - Nigerian Computer Society (NCS).
   - National Board for Technology Incubation (NBTI).
   - Nigeria Internet Registration Association (NiRA).

e. **Investors and Financial Institutions:**
   - Venture Capitalist (VCs), investment firms and organizations with interest in the Nigerian digital entrepreneurship ecosystem.
   - Commercial banks, digital banks and other financial institutions.

f. **ICT, Telecommunications and General Service Providers:**
   - Telecommunication service providers.
   - Cloud hosting and technology companies.
   - Payment service providers.
   - E-commerce service providers.

g. **Academic and Research Institutions:**
   - Nigerian tertiary institutions.

- Research institutions with expertise and focal operations in digital entrepreneurship, business models, and sustainable development.

h. **Non-Governmental Organizations (NGOs) and Development Partners**:
   - NGOs working in the areas of entrepreneurship, technology, and sustainable development.
   - International development organizations supporting entrepreneurship and socioeconomic growth and development in Nigeria.

i. **Media Houses and Communication Agencies**:
   - Digital media houses and platforms.
   - Local and national media organizations.
   - ICT and digital technology journalists.

Observe that the target respondent groups were selected from virtually all aspects of the Nigerian digital entrepreneurship ecosystem. This ensured that feedback was obtained from diverse viewpoints, which made the study results very robust, comprehensive and fully representative of every stakeholder's input.

2.2.2 Geographic Coverage of the Study

The survey was conducted in one selected major metropolitan city per geopolitical zone nationwide, as shown in the table below. The survey was carried out in Abuja, Enugu, Kano, Lagos and Port Harcourt.

Figure 6: Geographic Coverage

2.2.3 Sampling Technique

The **multi-stage & stratified sampling** technique was used for the survey.

2.2.4 Sample Size

The minimum sample size for the survey was computed as **10,000** samples. (See **Appendix A** for details on sample size computation).

2.2.6 Sample Distribution

The table below shows the minimum computed sample distribution for each of the selected cities.

Table 1: Sample Size Distribution

SN	City	Geopolitical Zone	Sample Size
1.	Abuja	North Central	1,600
2.	Enugu	South East	1,600
3.	Kano	North West	1,600
4.	Lagos*	South West	2,000
5.	Port Harcourt	South-South	1,600
6.	Yola	North East	1,600
		Total	**10,000**

NOTE:
The city of Lagos was allotted a minimum sample size of 2,000 due to its peculiar nature of high concentration of digital entrepreneurs and tech hubs when compared to other Nigerian cities.

2.2.7 Survey Questionnaire Design and Scope

The survey instrument was a **questionnaire**. Demographic, Likert scale, matrix, and multiple-choice questions was used in question formulation; a few open-ended questions intended to capture data on suggestions and recommendations were also used. The questionnaire design was tailored to address the project scope.

Two categories of questionnaires were used as follows.

a. **Category A**: Digital Entrepreneurs and Startups.
b. **Category B:** Government MDAs, private organizations, tech hubs, venture capitalists, NGOs, etc.

See **Appendix B** for the survey questionnaires.

2.2.8 Data Collection

Computer Aided Personal Interview (CAPI) software tool was used for scripting and coding the survey questions, which was delivered via the Mobile Data Collection (MDC) method, i.e. use of mobile technology in place of traditional paper for collection of data. The data collection was performed face-to-face in real time with respondents.

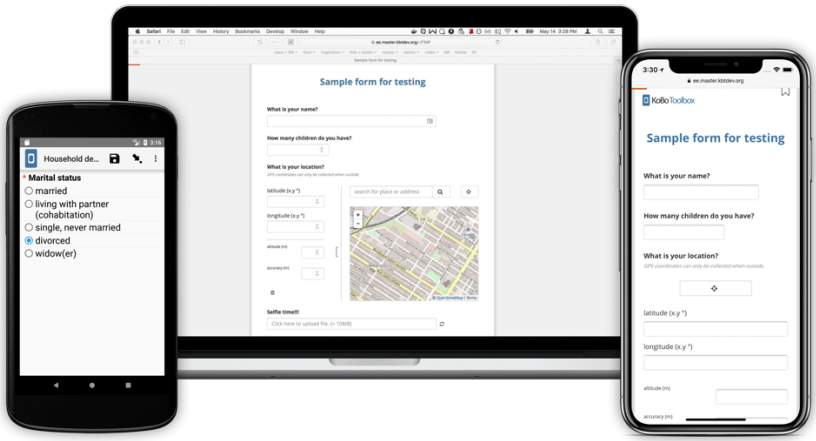

Figure 7: Sample Computer Aided Personal Interview (CAPI) Toolkit

Benefits of Using MDC for Data Collection include:

a. Increased speed and improved efficiency.
b. Cost reduction in paper prints and data collation.
c. Improved data quality via reduced human error, input validation and increased accuracy.
d. Ability to track responses in real time.
e. Support for data capture in online and offline mode (useful for locations with poor internet coverage).
f. Electronic data storage of responses with support for export of data to multiple formats such as Excel (.XLS, .CSV) or SPSS (.SAV).
g. Ability to capture and track the Global Position System (GPS) of survey location.
h. Preliminary real time analysis of captured data.

2.2.9 Quality Control and Risk Reduction Measures

Field surveys of this scope are not without risks. The following quality control measures were put in place to ensure risk reduction and elimination.

a. Review of survey instrument with project team to ensure project aim, objectives and scope were adequately met.
b. Use of pre-defined sample distribution to prevent loop-sided responses.
c. Training of data collection officers on the use of the CAPI toolkit. This was a practical training session where data capture simulations were done and common mistakes were addressed.
d. Incorporation of spot checks and review of responses at early stages of the survey; typically, at 10% and 15% of total expected responses. This was essential to align with the expected survey objectives.

2.2.10 Data Analysis and Reporting

Upon completion of the field work component of the project, all sampled data were collated and harmonized per city.

Figure 8: Data Analysis and Reporting Process Flow

Emphasis was placed on empirical and statistical methods for data analysis. Correlation was performed where possible to identify patterns. The data analysis was largely based on the following three patterns:

a. Tabular Numerical Analysis (For computation, statistics and numbers).
b. Graphical Distributions (Charts and Graphs) – pie charts, line graphs, bar chart etc.
c. Correlation (Relationships and Patterns.)

2.2.11 Benchmarking

Benchmarking of ICT innovation activities and adoption practices from other developing countries was conducted. A number of digital entrepreneurship business model frameworks were studied to serve as benchmark in the development of our conceptual model.

2.3 Demographic and Socioeconomic Attributes of Respondents

A multi-stage stratified sampling technique was used to obtain data from different respondents. A total of **10,107** samples were obtained from the 6 designated cities between 18th July and 30th September, 2023.

2.3.1 Respondent Distribution

Two categories of respondents were sampled i.e. Category A: digital entrepreneurs and business owners; Category B: Government MDAs, private organizations, tech hubs, venture capitalists, NGOs, etc. The table below shows the sampled respondent distributions.

Table 2: Sample Distribution

SN	City	Geopolitical Zone	Sampled Respondents (Category A)	Sampled Respondents (Category B)	Total Sampled Respondents
1.	Abuja	North Central	1,442	158	1,600
2.	Enugu	South East	1,443	160	1,603
3.	Kano	North West	1,440	172	1,612
4.	Lagos	South West	1,854	208	2,062
5.	Port Harcourt	South-South	1,452	164	1,616
6.	Yola	North East	1,450	164	1,614
		Total	**9,081**	**1,026**	**10,107**

The table below shows how the different respondent groups per respondent category

Table 3: Respondent Groups per Respondent Category

Respondent Category	Respondent Group	% Respondents
Category A	a. Digital Entrepreneurs and Business Owners (Individuals)	100.00
	Total	**100.00**
Category B	a. Private Organizations	40.35
	b. Tech hubs	14.20
	c. Others	11.56
	d. Academia	10.38
	e. Media Agencies	8.72
	f. Venture Capitalists & Investors	7.25
	g. Research Institutions	3.72
	h. Industry Association	2.15
	i. Government MDAs	1.66
	Total	**100.00**

See **Appendix D** for list of sampled respondents for category B

2.3.2 GPS Location Heat-Map of Respondents

The figures below show the GPS location heat map of the sampled respondents.

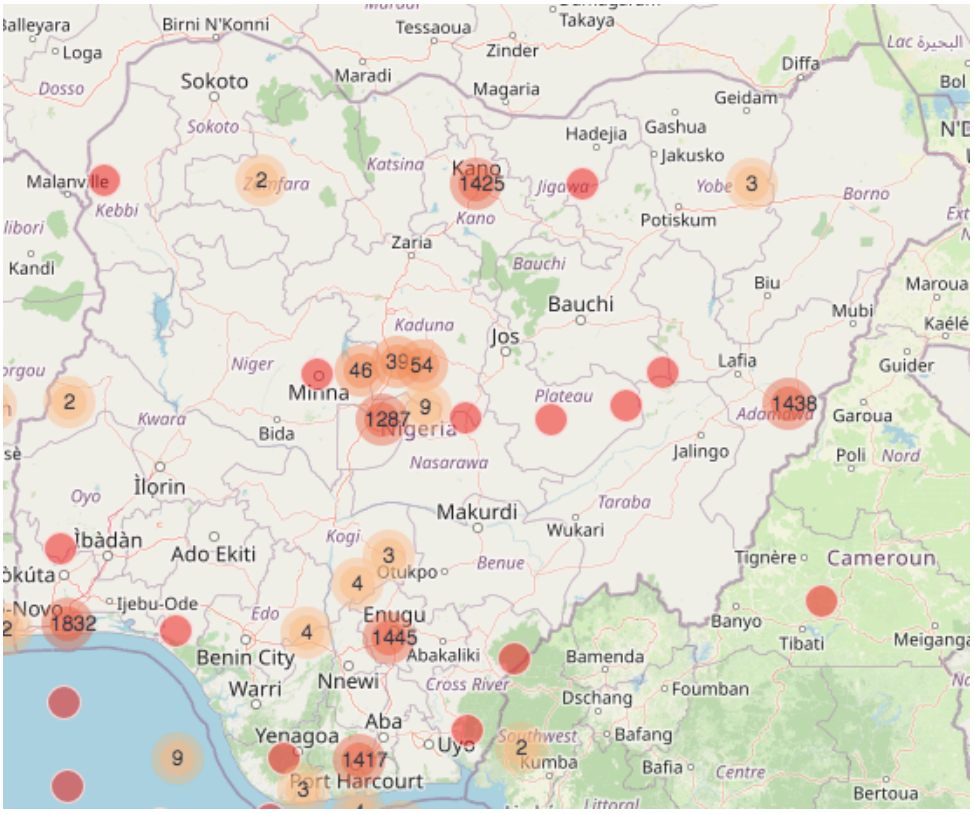

Figure 9: GPS Location Heat Map of Respondents (Category A)

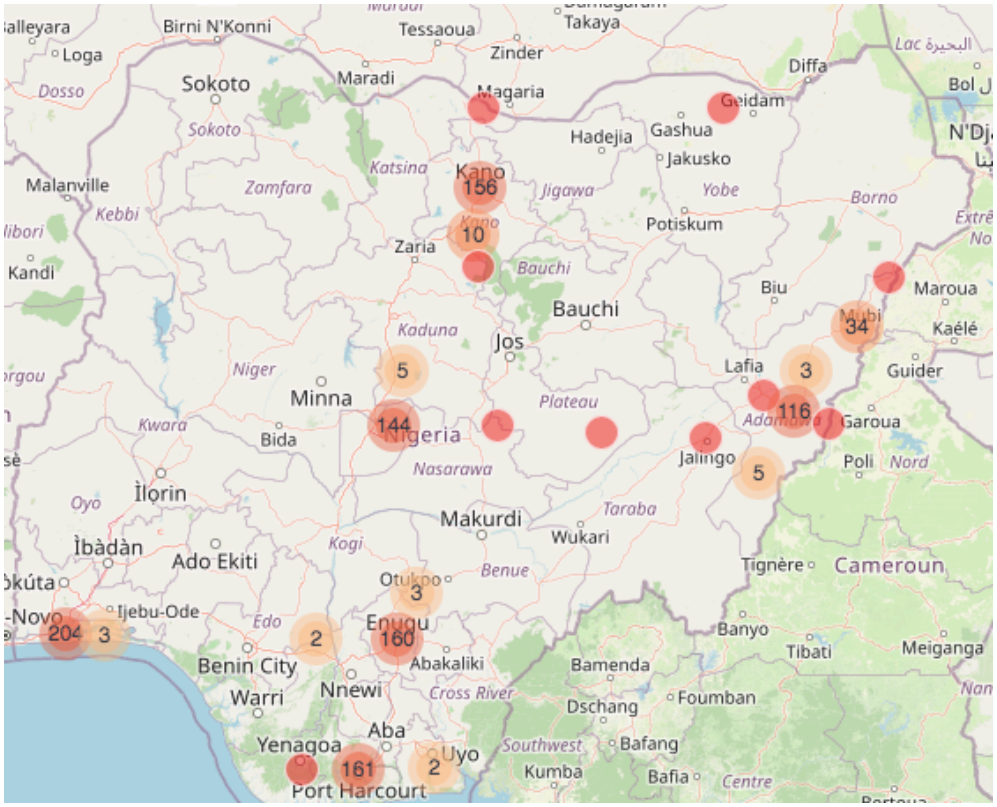

Figure 10: GPS Location Heat Map of Respondents (Category B)

2.3.3 Summary of Demographic and Socioeconomic Attributes of Respondents

Most of the sampled respondents (within the digital entrepreneurship respondent group) were in urban areas, 67% were male while 32% were female. About 70% were between the ages of 26 and 50 years. Over half (71%) are married; 68% have tertiary education as their highest form of education (with Bachelors' degree and HND being the most prevalent form of highest qualification of respondents).

36% of respondents own digital businesses in the consumer goods and services sector, which is the most predominant; other sectors include finance, technology/telecoms, health, education, manufacturing, etc.

41% of the sampled businesses are less than five (5) years old and 65% are setup as partnerships (i.e. having more than one founder). Only 2.8% of sampled respondents had a form of physical disability.

See **Appendix C** for statistics, tables, graphs and inferences on the demographic and socio-economic attributes of entrepreneurs and businesses sampled.

3. Findings and Analysis from Field Survey Exercise

Preamble

Over the years, digital entrepreneurs and the MSME sub-sector have grown remarkably, and have been a key component of the Nigerian economy. Digital entrepreneurship usually Startup as micro-scale businesses and if successful, often scale up to small, medium, large and very large-scale businesses.

According to the last Nigeria MSME report 2022, there were no fewer than 39.7million MSMEs (96.9 were microenterprises while 3.1% were SMEs); MSMEs contributed 46.9% to the national GDP, accounted for 96.7% of all businesses, 6.21% of gross export and were responsible for 84% of employment.[1]

The table below shows the distinguishing features between MSMEs in Nigeria based on the National MSME policy definitions.

Table 4: MSME Categorization

SN	Type of MSME	Size	Assets & Capital (Naira)	Corporate Income Taxation
a.	Micro Enterprise	1 - 9	< N5 million	Not Taxable for Company Income Tax (CIT)
b.	Small Enterprise	10 - 49	≥ 5million & < 50million	Taxable if revenue exceeds N25 million
c.	Medium Enterprise	50 - 249	≥ 50 million & < 500million	Taxable if revenue exceeds N25 million

NOTE: Assets & Capital is exclusive of price of land.
Data source: National MSME policy; online available at:
https://www.smedan.gov.ng/images/PDF/MSME-National-Policy.pdf

The **key findings and analysis from our field survey exercise** provide empirical insights on the digital entrepreneurship and business landscape in Nigeria. The following sections enumerates the nature of digital entrepreneurship and digital businesses in Nigeria (i.e. predominant sectors of business operations, ownership structure, average revenue, statuses of basic registration, business support groups, etc.), support initiatives, Startup formation and failure rates, barriers and challenges of digital entrepreneurship, and a SWOT analysis of digital business ecosystem in Nigeria.

[1] SMEDAN (2022), *The Nigeria MSME Report 2022;* online available at: https://smedan.gov.ng/wp-content/uploads/2022/07/Kippa-MSME-Report.pdf; p5, p11

3.1 Digital Entrepreneurship and Business Landscape in Nigeria

3.1.1 Predominant Sectors of Business Operations

A good number of entrepreneurs in the Nigerian digital business ecosystem are within the youthful population and have a minimum of secondary school education. Nigerian digital entrepreneurs favour the provision of **consumer goods and services** amongst others as their operating area of business operation – this trend is largely because of the size of Nigeria's teeming population (estimated at 224 million as of August 2023)[2] which provides a huge customer base for businesses. The table and figure below show the sector of business operations for Nigerian digital entrepreneurs based on findings from the field survey.

Table 5: Sectors of Digital Businesses

Business Sector	Frequency (%)
CONSUMER GOODS	19.74
CONSUMER SERVICES	15.85
OTHERS (Facility Management, Digital Marketing, etc.)	11.18
TECH/TELECOMS	10.91
MOBILITY	8.49
AGRICULTURE	7.71
HEALTH	7.00
MANUFACTURING	6.86
FINANCE	6.39
EDUCATION	5.87
TOTAL	100%

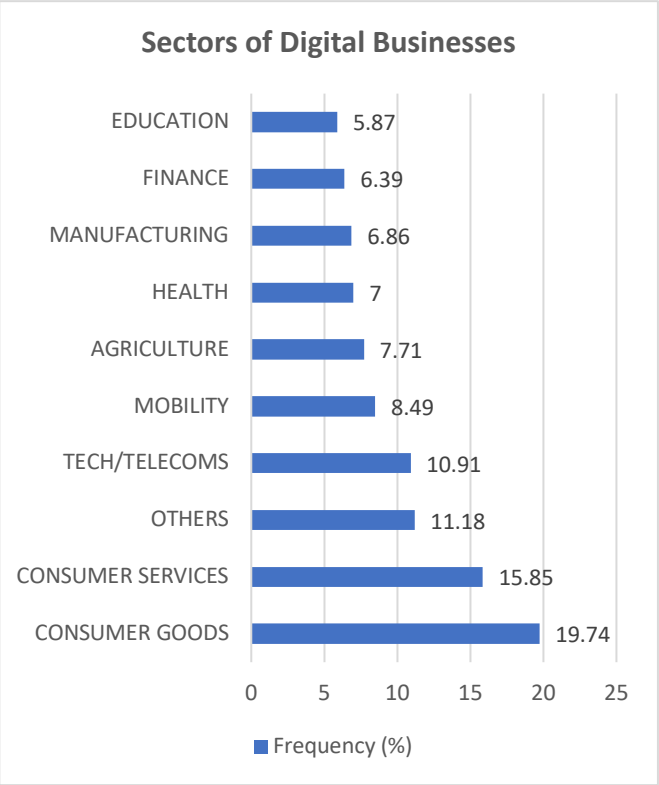

Figure 11: Predominant Sector of Digital Businesses

36% of digital entrepreneurs favour the provision of consumer goods and services over other areas – this is largely due to the huge consumer base for these products and services. Examples include: consumables, clothing, food, cars, fashion, logistics/delivery, utility, etc.

[2] NPC, United Nations (2023), *Nigeria Population,* online available at: https://www.worldometers.info/world-population/nigeria-population/

3.1.2 Status of Basic Corporate Registrations

The table below shows responses from sampled respondents on statuses of basic registration for their businesses.

Table 6: Statuses of Basic Registrations

SN	Survey Question	YES	NO
1.	Is your business registered with CAC (either business name or incorporation)?	52.25	47.75
2.	Is your business registered with SMEDAN?	41.98	58.02
3.	Have you registered any trademarks or patents for your businesses?	28.33	71.67
4.	Have you registered a domain name for your business?	41.33	58.67
5.	Does your business have a running website?	30.32	69.58
6.	Do you have a valid corporate bank account?	69.51	30.49

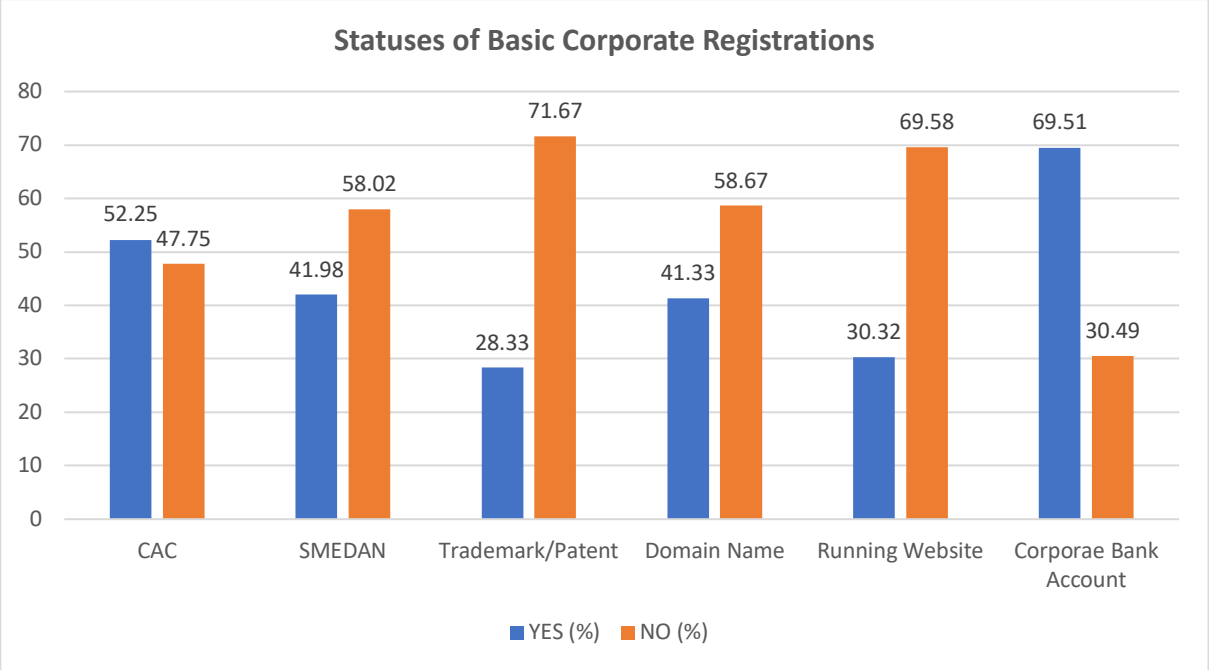

Figure 12: Statuses of Basic Registrations

The analysis shows that more than half (over 50%) of the businesses sampled are registered with the Corporate Affairs Commission (CAC) – mostly under the "Business Name" registration category. About 42% are registered with SMEDAN. Remarkably, 70% have a corporate bank account for business operations – thanks to availability of several commercial and digital banks in Nigeria. Only 30% have a running website and quite worrisome, less than 30% have a registered trademark or patent.

3.1.3 Rate of Startup and Digital Business Formation

The table below shows ages of Startups and digital businesses sampled as well as the trend of digital business launch.

Table 7: Business Age Distribution

Age in Years	Frequency (%)
Less than 1 year	1.79
1 – 2 Years	13.77
3 – 4 Years	25.49
5 – 6 Years	23.58
7 – 8 Years	14.55
9 – 10 Years	8.71
Over 10 Years	12.11
Average	14.29

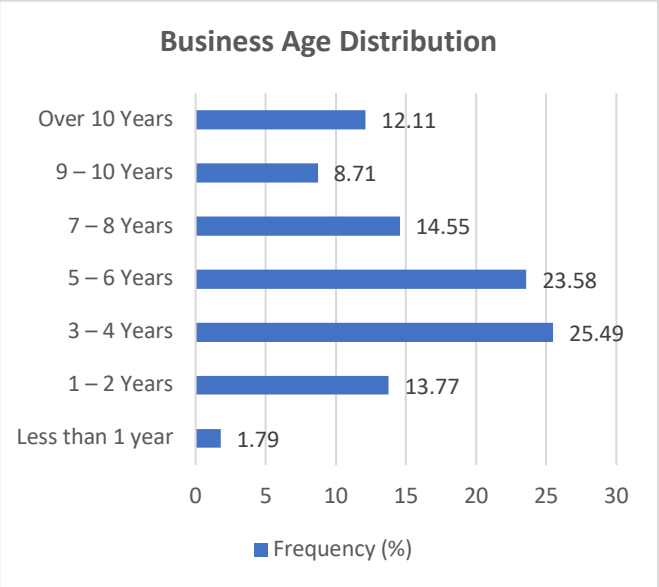

Figure 13: Business Age Distribution

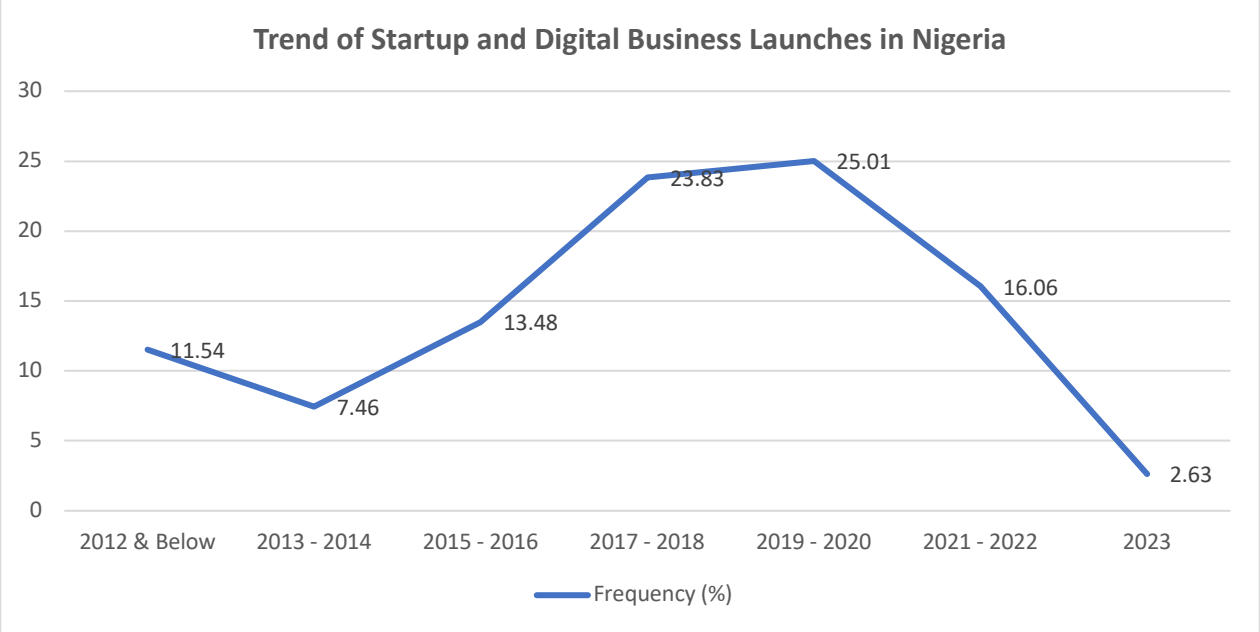

Figure 14: Trend of Startup and Digital Business Launch in Nigeria

*The trend shows a **decline in the rate of Startup and digital business launches** in Nigeria in the last four (4) years i.e. from 2019/2020. This decline can be attributed to several macroeconomic factors such as high inflation rate, high cost of living, high foreign exchange rate, emigration of skilled professionals, difficult access to funding and problem of insecurity. The average rate of Startup and digital business launch in Nigeria in the last 10 years is estimated at **14.3%.***

3.1.4 Ownership Structure

The table below shows the ownerships structure of digital businesses and startups in Nigeria.

Table 8: Ownership Structure (Number of Owners)

Number of Owners	Frequency (%)
1	34.46
2	15.45
3	19.99
4	16.91
5 & Above	13.19

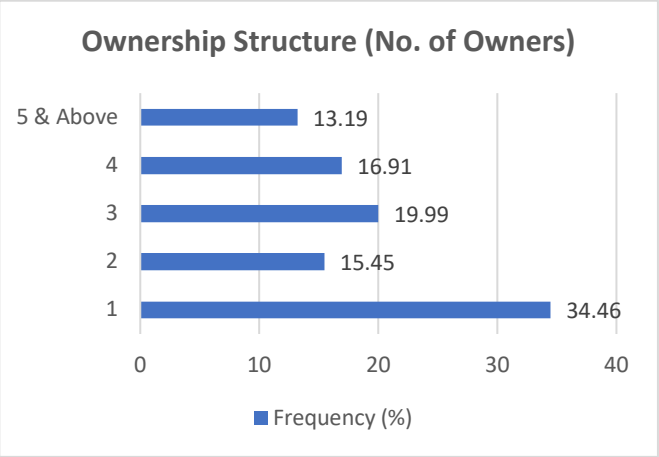

Figure 15: Ownership Structure (Number of Owners)

65% of Nigerian digital businesses sampled are formed as partnerships having at least two (2) owners; 35% are sole proprietorships.

3.1.5 Number of Product and Service Offerings

The table and chart below show a distribution of the average number of distinct products and services offered by Nigerian entrepreneurs and businesses.

Table 9: Number of Distinct Product and Service Offerings

Number of Distinct Product & Service Offering	Frequency (%)
1	14.04
2	10.12
3	22.76
4	18.82
5 & Above	34.26

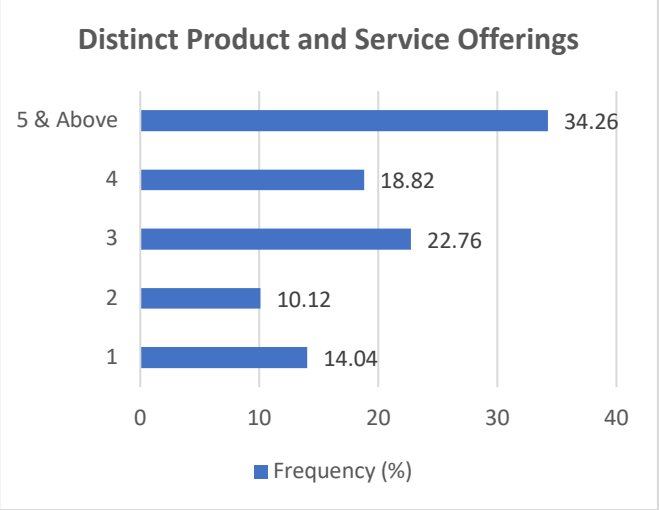

Figure 16: Number of Product and Service Offerings

Notably, about 76% of sampled businesses offer a minimum of three (3) distinct products and services.

3.1.6 Funding and Investment Received Since Inception

The table below shows the funding and investment received by sampled business since their inception.

Table 10: Funding and Investment Received Since Inception

Funding Received Since Inception	Frequency (%)
None	34.09
Less than N10million	34.20
N10m – N19.99m	16.63
N20m – N29.99m	8.60
N30m – N39.99m	3.70
N40m – N49.99m	1.29
N50m & Above	1.02

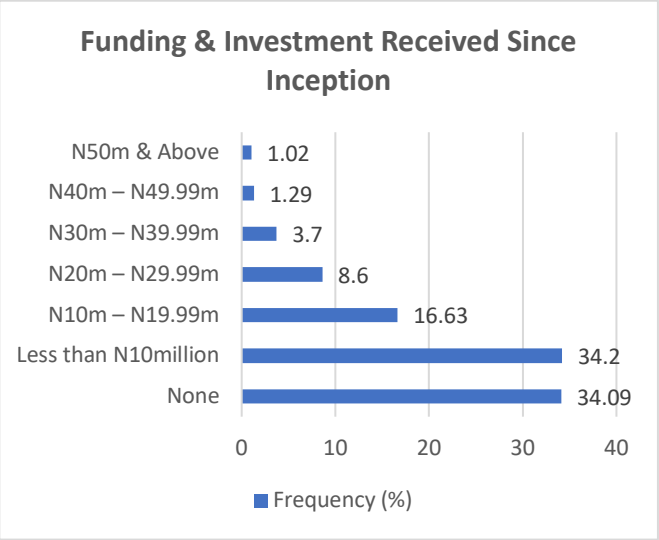

Figure 17: Funding and Investment Received Since Inception

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*34% of Nigerian entrepreneurs and businesses sampled have **never received any form of funding**; Less than 35% have received **below N10million** in funding since their inception.*

As of 2020 (pre-COVID-19 era), the financial gap for Nigerian MSMEs was estimated at N617.3 billion annually[3]. The National Bureau of Statistics revealed that: *"5.3 percent of businesses (up to 21.6 percent for SMEs) had access to bank credit even with 40 percent of operators having personal banking relationships."*[4]

[3] PwC (2020), *PWC's MSME Survey Report – Nigeria;* online available at: https://www.pwc.com/ng/en/assets/pdf/pwc-msme-survey-2020-final.pdf; p15
[4] NBS (2017), *National Survey of MSMEs;* online available at: https://smedan.gov.ng/images/NATIONAL%20SURVEY%20OF%20MICRO%20SMALL%20&%20MEDIUM%20ENTERPRISES%20(MSMES),%20%202017%201.pdf; p xvii

3.1.7 Average Monthly Revenue

The analysis below shows the trends of average monthly revenue of sampled businesses.

Table 11: Average Monthly Revenue

Average Monthly Revenue	Frequency (%)
Zero	0.84
below N200,000	33.98
N200,000 - N399,999	31.25
N400,000 - N599,999	19.06
N600,000 - N799,999	7.73
N800,000 - N999,999	3.57
N1,000,0000 & Above	3.57

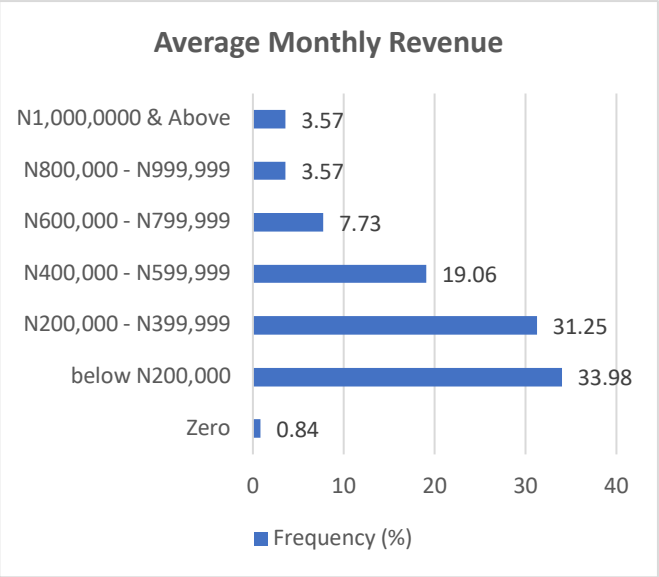

Figure 18: Average Monthly Revenue

About 34% of sampled business earn below N200,000.00 monthly; about one-third earn from N200,000 and above but less than N400,000; only 3.6% of sampled business earn at least N1million monthly.

3.1.8 Support Initiatives for Digital Entrepreneurship & Businesses in Nigeria

Some notable initiatives have been put in place to foster the growth and development of digital businesses in Nigeria; some of these are enumerated in the sections below.

3.1.8.1 Formulation of Enabling Regulations

The table below summarizes key policies and legislations that have positive impacts and support for the digital entrepreneurship and business landscape in Nigeria.

Table 12: Enabling Policies and Legislations for Digital Entrepreneurship and Businesses in Nigeria

SN	Enabling Policy/Legislation	Key Drivers	Purpose
a.	National Digital Economy Policy and Strategy (NDEPS) 2020 -2030	Minister of Communications, Innovation and Digital Economy NCC, NITDA	*Serves as the major driving policy for Nigeria's digital revolution. The policy has eight (8) pillars: development regulations, digital literacy, skill development, solid infrastructure, soft infrastructure, service infrastructure, digital societies and emerging technologies, and Indigenous development.*
b.	Nigeria Digital Innovation, Entrepreneurship and Startup Policy (NDIESP) 2021	NITDA, ONDI, OIIE	*Leveraging digital technology for socioeconomic growth and development through advancing human capital, unlocking access to capital, enabling infrastructure, boosting demand, and promoting innovative entrepreneurship.*
c.	National Policy for the Promotion of Indigenous Content in the Nigerian Telecommunications Sector (NPPIC) 2021	FMoCDE, NCC, NITDA	*Promotion of development and patronage of indigenous content in the Nigerian telecommunication and ICT sector.*
d.	Nigeria Startup Act (2022)	National Council for Digital Innovation and Entrepreneurship (NCDIE); National Assembly; Nigeria's Startup Eco-system.	*Legislation aimed at ensuring that Nigeria's laws and regulations are clear, planned and work for the tech ecosystem to ensure the creation of an enabling environment for the growth of the ecosystem, as well as the attraction and protection of investment in tech startups.*
e.	National Policy on Micro, Small and Medium Enterprises (MSMEs) 2015 - 2025	SMEDAN	*To facilitate and sustain a vibrant MSME sub-sector that will be the major driver of national economic growth and employment.*
f.	Nigeria Finance Act 2019	Ministry of Finance; Federal Inland Revenue Service (FIRS)	*Amongst other things, the Act ensures to exempts early-stage startups with revenue below 25 million naira from paying*

			company income tax and only requires those with revenues above 100 million naira to pay the standard rate of 30 percent.
g.	Mobile Money Regulatory Framework 2021 Payment Service Bank Regulatory Framework (revised 2021)	Central Bank of Nigeria	*Promote access to financial services for underserved and unserved areas; improve financial inclusion.*
h.	Nigeria Data Protection Regulation (NDPR) 2019	National Information Technology Development Agency (NITDA)	*Guidelines for data privacy protection in Nigeria, spanning across data collection, processing, and storage.*

3.1.8.2 Funding, Special Interventions and Strategic Support

Some notable funding and special interventions for digital entrepreneurship and businesses in Nigeria are enumerated below.

a. Continuous implementation of the NDEPS (2020 - 2030) by the Federal Ministry of Communications, Innovation, and Digital Economy, NCC, NITDA, etc.

b. Facilitation of Broadband penetration by NCC which is pivotal for universal availability and access to telecommunications services in Nigeria needed for socioeconomic growth and development. Broadband is a key enabler for digital businesses to thrive. In Nigeria, Broadband penetration rose from 6% in 2015 to 47.01% in July 2023, representing a 683.5% rise in broadband penetration in the last 8 years[5].

c. The Universal Service Provision Fund (USPF) was established by the Federal Government of Nigeria (in 2003 and started operations in 2006) to facilitate the achievement of national policy goals for universal access and universal service to information and communication technologies (ICTs) in rural, un-served and under-served areas in Nigeria. The Fund is managed to facilitate the widest possible access to affordable telecommunications services for greater social equity and inclusion for the people of Nigeria[6]. The number of underserved and unserved clusters reduced from 207 in 2013 to 97 in 2022, representing a 53.14% reduction in the number of underserved and unserved clusters in Nigeria[7].

d. Federal Government Investment in Digital and Creative Enterprises (I-DICE), launched in March 2023, is an initiative of the Federal Government of Nigeria to promote entrepreneurship and innovation in the digital technology and creative industries in the context of efforts to create jobs, especially for young people. I-DICE responds to specific

[5] NCC (2023), *Industry Statistics – Broadband Penetration;* online available at: https://ncc.gov.ng/statistics-reports/industry-overview
[6] USPF (2023), *Welcome to the Universal Service Provision Fund (USPF)*; online available at: https://www.uspf.gov.ng/
[7] USPF (2023), *Clusters of ICT Gaps;* online available at: https://www.uspf.gov.ng/clusters-of-ict-gap

gaps in Nigeria's technology and creativity ecosystem and is designed to address constraints in these industries including access to risk capital and innovation ecosystem capacity challenges faced by startups. The total Program cost is estimated at $618 million, out of which the African Development Bank is providing $170 million; the Agence Française de Dévelopement, €100 million ($116 million); and the Islamic Development Bank $70 million in co-financing. The Bank of Industry (BOI) will provide $45 million as FGN's Counterpart contribution to be availed through loans for qualifying startups. This financing is expected to leverage further equity investments from the private sector and institutional investors to the tune of $ 217 million.[8]

e. The Central Bank of Nigeria (CBN) launched the MSME Development Fund (MSMEDF) in 2013 with a share capital of N220 billion with the objectives of enhancing access by MSMEs to financial services; increasing productivity and output of microenterprises; increasing employment and creation of wealth; and Engendering inclusive growth[9].
f. The Federal Government MSME survival fund was a short-term COVID-19 support initiative for MSME. It was launched in 2020 with the aim of providing a conditional grant to support vulnerable micro and small enterprises in meeting their payroll obligations and safeguard Jobs in the MSMEs sector. The scheme was estimated to save not less than 103 million jobs across the country and specifically impact on over 35,000 individuals per state[10].
g. SMEDAN Matching Fund programme designed to disburse N1.2billion in its first phase (2023) to agri-businesses. The intervention delivers credit as a promotional mechanism to enhance enterprise output, competitiveness and job creation. Prospective beneficiaries can access loans between N500,000 and N2.5 million[11].
h. Over 3million MSMEs to benefit from the recently launched Skillnovation programme by the Federal government. It has been described as a transformative initiative that will usher in a new era of digital empowerment for Nigerians[12].
i. The Federal Government's pledge of N125 billion in August 2023 to energize numerous Small and Medium-sized Enterprises (SMEs) to driver of economic growth[13].

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[8] AfDB (2023), *Frequently Asked Questions on the iDICE Project*, online available at: https://www.afdb.org/en/news-and-events/frequently-asked-questions-idice-project-59933; published on 22nd March, 2023.
[9] CBN (2023), *Micro, Small and Medium Enterprises Development Fund (MSMDF);* online available at: https://www.cbn.gov.ng/msme/
[10] Pan African Institute (2020), *Federal Government MSME Survival Fund;* online available at: https://panafricaninstitute.org/msme-survival-fund.html
[11] SMEDAN (2023), *SMEDAN, JAIZ Bank to Disburse 1.2 billion to MSMEs;* online available at: *https://dailytrust.com/smedan-jaiz-bank-to-disburse-n1-2bn-matching-fund-for-msmes/;* published on 5th July, 2023.
[12] State House (2023), Over 3M MSMEs to Benefit as Nigeria Launches FG/ALAT Skillnovation; online available at: https://statehouse.gov.ng/news/over-3m-msmes-to-benefit-as-nigeria-launches-fg-alat-skillnovation/; published on: 29th September, 2023.
[13] ACCI (2023), *ACCI lauds FG over N125bn proposed grants to SMEs;* online available at: https://tribuneonlineng.com/acci-lauds-fg-over-n125bn-proposed-grants-to-smes; published on 3rd August, 2023.

j. Y-Combinator (YC) is arguably the best Startup accelerator in the world. Since its first Nigerian investment in 2015/2016, Y-Combinator has invested in 55 Nigerian companies (out of 97 African companies)—denoting that 55% of YC's African investments are in Nigeria as of August 2022[14]. Y-Combinator invests $500,000 in every selected company on standard terms.

k. Several research grants are also available to innovators and inventors from the Academia community. Notably, in 2020, the National Research Fund (NRF) managed by the Tertiary Education Trust Fund (TETFund) earmarked N9 billion to support 128 research projects. NCC has committed over N500million to Nigerian tertiary institutions in research grants for various telecoms-based research innovations with a vision of commercializing viable prototypes once developed[15].

l. In 2020, NCC committed to the construction of Digital Industrial Parks across the six (6) geopolitical zones. These digital parks would boost digital skills acquisition among youths, promote innovations, provide jobs for the teaming Nigerian youth and ultimately support the overall digital transformation agenda of the federal government[16].

m. Several capacity building initiatives and training programmes (for men, women, children, disabled, academia, etc.) aimed at improving digital literacy, skills, social inclusion. NITDA, NCC, Digital Bridge Institute, SMEDAN, etc have been key players in this sphere.

n. Provision of Digital Learning Platform for micro, small and medium enterprises (MSME) owners via a public-private partnership initiative driven by NCC, SMEDAN, and Sapphital Learning Limited. The project aims to equip entrepreneurs and startups with the necessary digital skills to navigate the increasingly digitised world[17]. The platform is online available at: https://smedigitalacademy.com/

o. National Social Investment Programmes such as YouWin (which stands for Youth Enterprise with Innovation in Nigeria. The programme is a joint product of four government ministries: The Federal Ministry of Finance, Ministry of Communication and Technology, Ministry of Education and Youth Development, and the Ministry of Women Affairs);
The N-Power Programme (a direct intervention to tackle youth unemployment and re-energize public service delivery in four key sectors: Education, Agriculture, Health and Vocational Training); and the Government Enterprise Empowerment Programme (GEEP)

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[14] Y Combinator (2022), *Fact Check: Paystack was the First YC-backed startup from Nigeria…;* online available at: https://www.benjamindada.com/paystack-first-y-combinator-startup-nigeria/; published on 22nd August, 2022; author: Johnstone Kpilaakaa.
[15] NCC (2022), *NCC grants Nigerian Universities N500million for R&D;* online available at https://www.vanguardngr.com/2022/07/ncc-grants-nigerian-universities-over-n500m-for-rd/
[16] NCC (2021), *ICT Parks as Boost for Digital Economy*; online available at: https://www.thisdaylive.com/index.php/2021/07/15/ict-parks-as-boost-for-digital-economy; published on 15th July, 2021
[17] SMEDAN (2023), *NCC, SMEDAN Collaborate on Small and Medium Enterprises Academy;* online available at: https://guardian.ng/business-services/ncc-smedan-collaborate-on-small-and-medium-enterprises-academy/; published on 21st December, 2021

designed to facilitate access to credit to poor and vulnerable people, including persons living with disabilities. [Source: National Social Investment Programme (NSIP) – online available at: https://nsip.gov.ng/].

p. Innovation and Competition promotion programmes such as boot camps, hackathons, etc. For example, in 2020, NCC awarded N9 million to three (3) startups (i.e. N3 million each) who emerged as winners from 56 contestants in its COVID-19 virtual hackathon competition themed "*Adaptable Digital Solutions for Addressing the Present and Future Impacts of Pandemic and Epidemic Diseases from Technology Hubs, Startup and Innovation Digital SMEs in Nigeria*"[18]. Similarly, in 2021, NCC awarded N20 million to four startups (i.e. N5 million each) that emerged as winners in its IoT code camp and hackathon[19].

q. The new strategic plan (2023 – 2027) of the Federal Ministry of Communications, Innovation and Digital Economy focuses on 5 pillars viz. knowledge; policy; infrastructure; trade; and innovation, entrepreneurship and capital[20].

[18] NCC (2020), *NCC presents N9 million grants to Digital Solutions Winners";* online available at: https://authorityngr.com/2020/09/02/ncc-presents-n9m-grantsto-digital-solutions-winners/

[19] NCC (2021), *NCC awards N20m grant to four startups*; online available at: https://tribuneonlineng.com/ncc-awards-n20m-grant-to-four-startups/; published on 8th November, 2021.

[20] FMoCDE (2023), Accelerating our Collective Prosperity through Technical Efficiency; online available at: https://drive.google.com/file/d/1fFtsDMTWoMWd0TXAcTeSRlUfjbOXZNhN/view?pli=1

The figure below summarizes key interventions for digital entrepreneurship and businesses championed by the Nigerian Communications Commission (NCC).

Figure 19: Key Initiatives by NCC to Promote Digital Entrepreneurship and Businesses in Nigeria

3.2 Perception of Entrepreneurs about the Nigerian Business Environment

The condition of the Nigerian digital business environment is far from copacetic as it has for long been plagued by several unfavourable conditions, which hover around policy implementation, regulations, infrastructure, access to funding, cybersecurity and macroeconomic factors.

The table and figure below show an analysis of the perceptions of Nigerian entrepreneurs about the Nigerian business environment.

Table 13: Perception of Entrepreneurs about the Nigerian Business Environment

SN	Survey Question: How would you rate the following in Nigeria?	5 Very Good	4 Good	3 Average	2 Poor	1 Very Poor
a.	Access to Investors and Funding	8.23	16.38	23.91	25.43	26.05
b.	Access to Customers	8.52	27.86	33.25	25.61	4.76
c.	Availability and Access to infrastructure	10.21	18.00	26.70	31.42	13.67
d.	Policy Implementation for growth & development of digital entrepreneurship	7.91	16.87	22.70	31.00	21.53
e.	Ease of running a business (operational costs)	7.48	17.21	25.61	31.00	18.70
f.	Ease of Company Registration	8.74	22.21	34.85	22.74	11.45
g.	Tax regulation for startups and entrepreneurs	6.39	14.97	25.12	37.01	16.52
h.	Level of Competition	9.16	24.45	32.91	24.89	8.59
i.	Social Media domain	8.57	23.35	35.30	27.92	4.87
j.	Cybersecurity	7.79	20.20	20.74	24.01	27.28

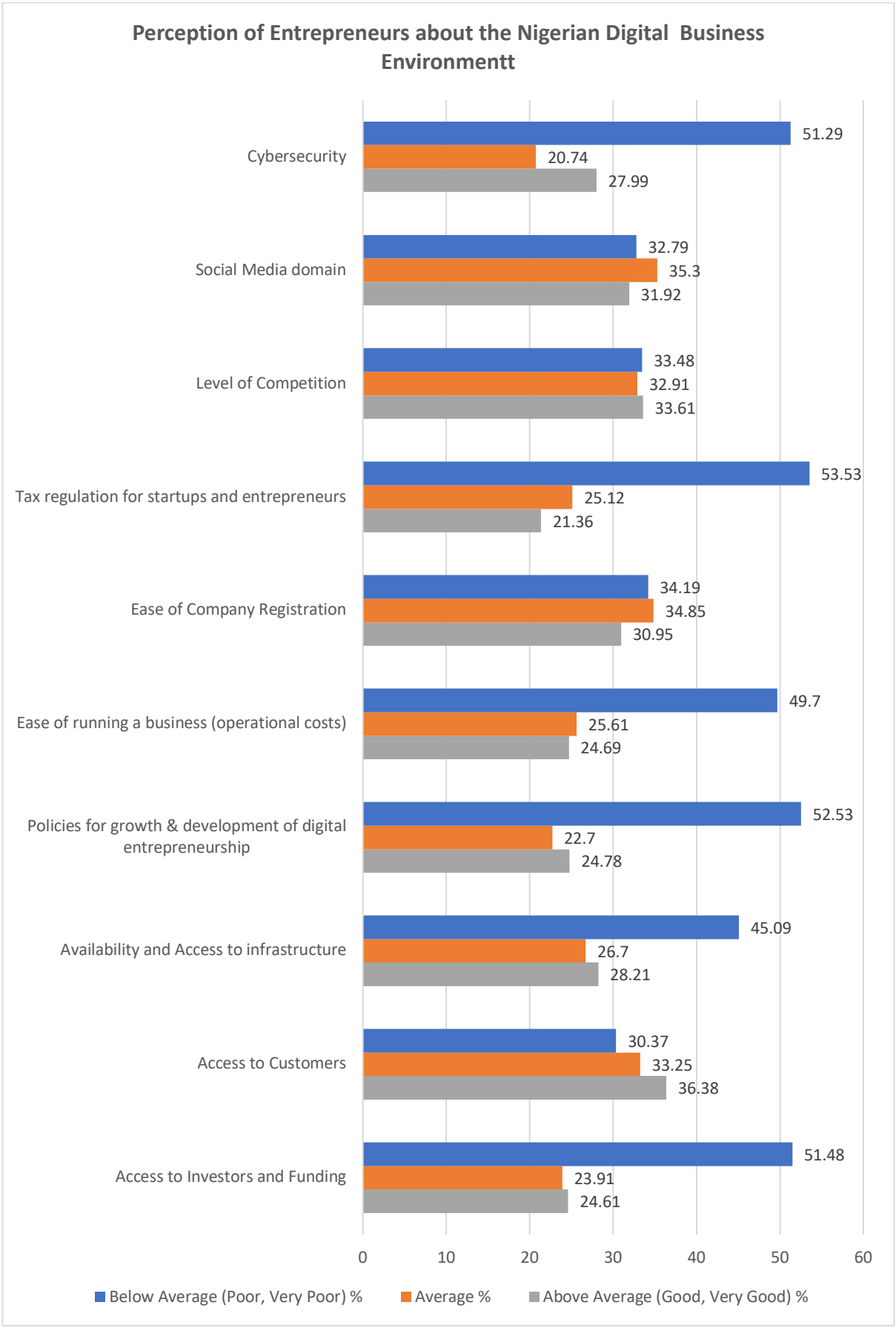

Figure 20: Perception of Entrepreneurs about the Nigerian Business Environment

Our survey revealed that over 40% of the sampled entrepreneurs rated the following aspects of the Nigerian digital business environment as below average:

a. Tax regulations for startups and entrepreneurs
b. Access to funding and investors
c. Policy implementation for growth of digital entrepreneurship
d. Cybersecurity
e. Ease of running a business (operational costs)
f. Availability and access to infrastructure

These aforementioned aspects are the bane of many digital entrepreneurs and businesses in Nigeria.

Conversely, the survey also revealed that over 30% of the sampled entrepreneurs rated the following aspects of the Nigerian digital business environment as above average:

a. Access to customers
b. Level of competition
c. Social media domain
d. Ease of company registration

The figure below shows the top performing and underperforming aspects of the Nigerian business environment.

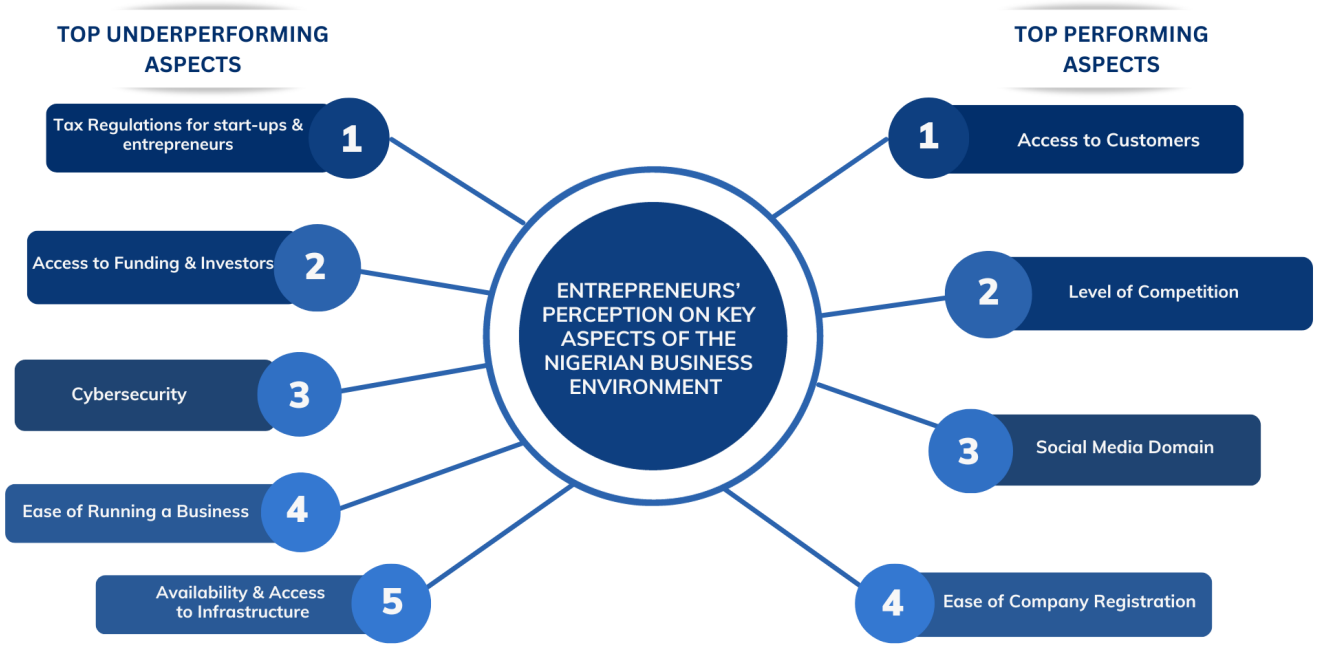

Figure 21: Entrepreneurs' Perception on Aspects of the Nigerian Business Environment

3.3 Challenges Faced by Digital Entrepreneurs and Businesses

Analysis of the survey data suggests a direct relationship between the poor-performing aspects of the Nigerian digital business environment and the challenges faced by digital entrepreneurs and businesses. The unfavourable conditions in the digital business ecosystem culminate in barriers to successful and sustainable digital businesses in Nigeria. Worryingly, the Global Startup Ecosystem Report (GSER) 2023, showed that "*after two years of moving up in the Index, Nigeria dropped three spots to 64th position globally, resulting from a difficult year in funding*"[21].

Synonymously, Nigeria dropped 23 positions (from 69th in 2022 to 93rd in 2023 from 121 countries) in the Global Soft Power Index (an index that measures a country's capacity to attract investment and effectively promote its products and services)[22].

The table and figure below show the tabular and graphical analysis from our field survey.

Table 14: Severity of Challenges faced by Digital Entrepreneurs and Businesses

SN	Challenge	Very Severe	Severe	Moderate	Mild	Very Mild
a.	Access to Funding	25.77	33.59	26.78	10.69	3.17
b.	Electricity Supply	12.99	43.21	22.55	17.75	3.49
c.	Internet Access and Speed	9.88	28.60	40.48	15.59	5.45
d.	Restrictions on Social Media	7.81	27.28	27.62	25.75	11.55
e.	Poor National Infrastructure (roads, railway, water, etc)	30.71	25.48	22.37	16.12	5.32
f.	High Import duties and Tariffs	29.72	26.52	23.11	15.81	4.83
g.	Insecurity	31.53	24.62	22.06	15.69	6.10
h.	Inflation Effects	34.26	24.93	22.18	13.85	4.78
i.	Access to Foreign Exchange	26.66	29.68	22.81	15.41	5.45
j.	Buying Power and Patronage	20.46	36.24	23.57	15.13	4.60
k.	Mentorship & Advisory Issues	8.72	32.71	35.89	17.39	5.30
l.	Operational and Running Costs	24.89	33.43	23.49	13.59	4.60
m.	Competition	17.29	41.02	24.56	13.17	3.96
n.	Digital Literacy Issues	11.66	32.46	37.03	13.76	5.07
o.	Business Management Issues	20.01	35.06	24.00	16.47	4.46
p.	Low trust score for digital businesses by consumers	30.12	26.15	23.95	15.54	4.24
q.	Multiple Taxation	29.13	26.95	24.88	15.34	3.71
r.	Cybersecurity Issues	31.20	25.72	20.30	14.97	7.92

[21] Startup Blink (2023), *Global Startup Ecosystem Report 2023;* online available at: https://www.startupsg.gov.sg/public/2023-06/Global%20Startup%20Ecosystem%20Index%202023-StartupBlink.pdf ; p43

[22] Brand Finance (2023), *Global Soft Power Index 2023,* online available at: https://brandirectory.com/softpower/

Peoples Gazette (2023), *Nigeria Ranks 93rd on Global Soft Power Index;* online available at: https://gazettengr.com/nigeria-ranks-93rd-on-global-soft-power-index/

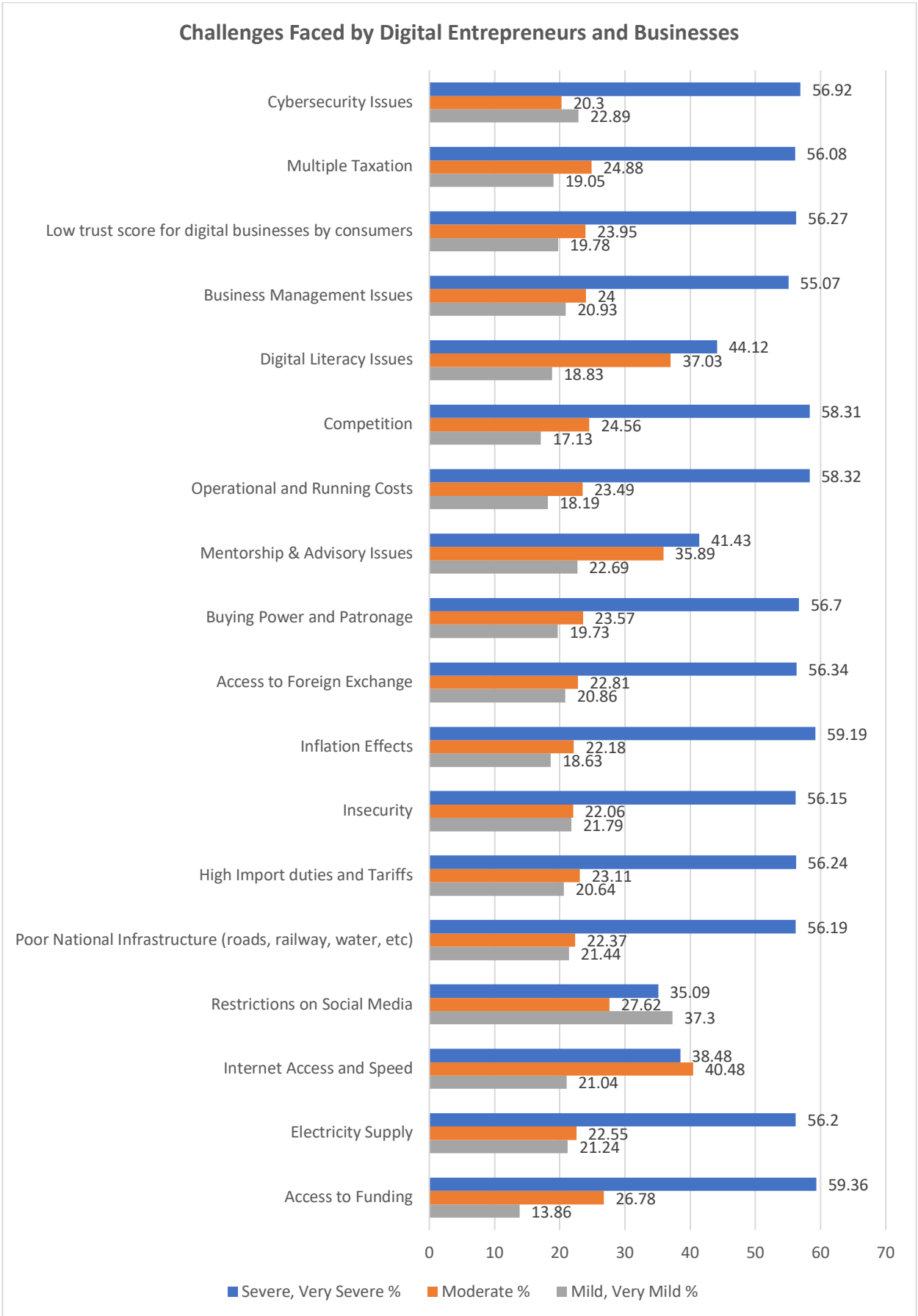

Figure 22: Challenges faced by Digital Entrepreneurs and Businesses in Nigeria

The analysis shows that over 55% of respondents rated the following (in order of most severity) as the top challenges faced by digital entrepreneurs and businesses in Nigeria:

a. Access to funding
b. Inflation effects
c. Operational and running costs
d. Competition
e. Cybersecurity issues
f. Buying power and patronage
g. Access to foreign exchange
h. Low trust score for digital businesses by consumers
i. High import duties and tariffs
j. Electricity supply
k. Poor national infrastructure (roads, railway, water, etc.)
l. Insecurity
m. Multiple taxation
n. Business management issues

3.4 Reasons for Startup Failure in Nigeria

A myriad of factors influence and affect Startups' ability to thrive and succeed in Nigeria. The average Nigerian digital Startup business has to deal with issues such as access to funding, regulations, multiple taxation, macroeconomic factors like inflation, foreign exchange rate, and interest rate, as well as business management challenges not limited to leadership, financial management, innovation, customer management, etc.

The tabular and graphical analysis of reasons for Startup failure are shown below.

Table 15: Reasons for Startup Failure in Nigeria

SN	Reason for Startup Failure in Nigeria	Very High	High	Average	Low	Very Low
a.	Lack of patronage; Low Profit margin	17.74	39.74	31.22	7.36	3.94
b.	Wrong choice of product/service	12.70	33.66	31.23	16.75	5.66
c.	High operational/running cost	34.05	28.07	22.29	10.41	5.19
d.	Lack of good national infrastructure	33.73	27.87	21.33	12.16	4.91
e.	Poor Business Management & Leadership	27.64	30.33	23.81	12.78	5.44
f.	Lack of Funding	34.91	26.86	20.65	12.78	4.80
g.	Funds Mismanagement	23.73	32.62	24.03	12.88	6.74
h.	Stiff Competition	28.28	32.04	22.42	12.84	4.42
i.	Lack of Innovation	30.79	27.55	23.27	11.88	6.51
j.	Problem of Insecurity	32.84	27.87	19.82	12.91	6.46
k.	Incompatible Founders	27.23	30.92	25.11	11.64	5.10
l.	Unfavourable government Policies	35.29	27.00	21.23	11.79	4.68
m.	Cybercrime, Fraud, etc	34.46	27.92	20.76	12.30	4.57
n.	Economic Instability	36.20	26.15	18.50	10.23	8.92

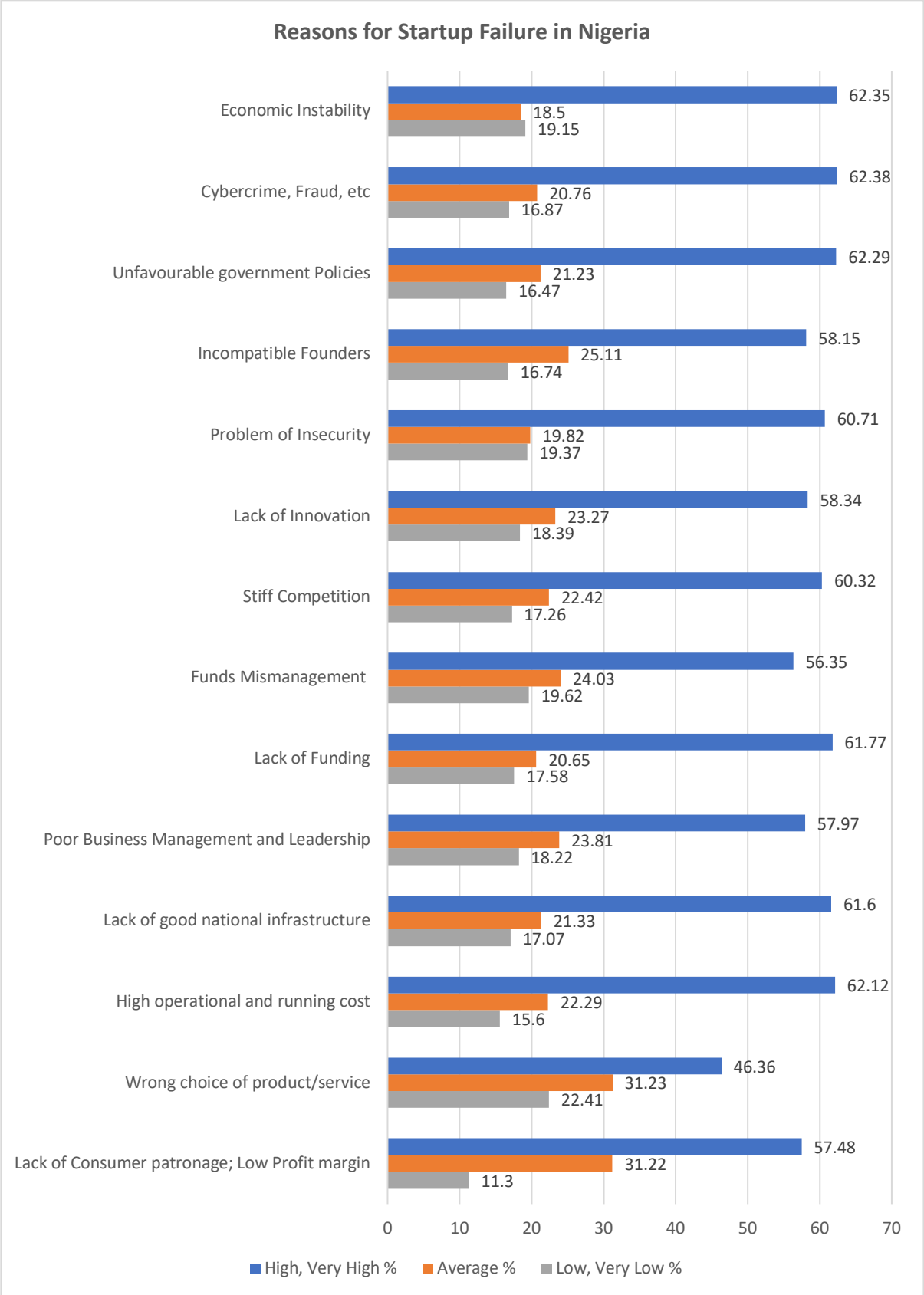

Figure 23: Reasons for Startup failure in Nigeria

The table below summarizes responses from interview sessions with some of the key stakeholders sampled on the reasons for Startup failure in Nigeria.

Table 16: Qualitative Feedback on why Startups Fail

SN	Respondent	Feedback on Reasons for Startup Failure in Nigeria
a.	*Engr. Zainab Abdulmalik,* *North Central Zonal Office,* **Small and Medium Enterprises Development Agency of Nigeria (SMEDAN)**	- *Lack of management skills* - *No proper research before venturing into a business* - *Poor marketing* - *Funding Issues*
b.	*Mr. Oguntade Oladapo*, *Unit Head, Innovation and Entrepreneurship,* **Office for Nigerian Digital Innovation (ONDI)**	- *Lack of funding* - *Poor business plan* - *Wrong product-market fit* - *Poor commercialization plan*
c.	*Dr. Ibrahim Mohammed Gadafi,* *Department of Entrepreneurship Studies*, **National Open University of Nigeria (NOUN)**	- *Cost of infrastructure* - *Taxes* - *Cybersecurity*
d.	Commercial Department, **National Board for Technology Incubation (NBTI)**	- *Running costs* - *Maintenance costs* - *Network failure by service providers*
e.	*Director, Industrial Development Department,* **Federal Ministry of Industry, Trade and Investment**	- *Poor digital and infrastructural facilities* - *No access to sector-specific funding/grants* - *Insufficient ICT incubation centres* - *Inconsistent government policies*
f.	*Office of the National President,* **Nigeria Association of Chambers of Commerce, Industry, Mines and Agriculture (NACCIMA)**	- *Funding gaps* - *Inadequate skill/professionals* - *Harsh business environment* - *Cybersecurity issues*
g.	*National Monitoring and Evaluation Department,* **Federal Ministry of Budget and National Planning**	- *Funding and Startup capital for small businesses* - *Multiple taxation*
h.	*President,* **Nigeria Computer Society (NCS)**	- *Absence of funding* - *Inadequate infrastructure, especially electricity* - *Cost of voice and data in communications*

i.	*Mr. Tony Ofili,* *Planning, Research and Statistics Department,* **National Population Commission (NPC)**	- *Lack of funding and capacity building for skilled workforce* - *Poor marketing of products and services* - *Starting with the wrong product* - *Conceiving a short-term plan in place of a long-term plan* -
j.	Mr. Olumuyiwa Bashiru *Managing Partner,* ***Skillfield Associates Services***	- *Macroeconomic environment & policies* - *Infrastructure deficiencies* - *Funding and investment crisis* -
k.	**Nigerian Investment Promotion Commission (NIPC)**	- *Poor Management* - *Lack of Finance* - *Accountability* - *Lack of Focus*
l.	**Federal Ministry of Youth and Sports Development**	- *Lack of infrastructure like energy/power-supply* - *Inadequate knowledge of the sector*

Our analysis shows that: notably, over 56% of sampled respondents rated the following (in order of impact) as the top causes of Startup failure in Nigeria:

a. Cybercrime, fraud, etc.
b. Economic instability
c. Unfavourable government policies
d. High operational/running costs
e. Lack of funding
f. Poor national infrastructure
g. Problem of insecurity
h. Stiff Competition
i. Lack of innovation
j. Incompatible founders
k. Poor business management and leadership
l. Lack of customer patronage
m. Funds mismanagement

Figure 24: Top Reasons for Startup Failure in Nigeria

The top five causes of Startup failure in Nigeria are cybercrime, economic instability, unfavourable government policies, high operational/running costs and lack of funding.

The Nigeria MSME report of 2022 (by SMEDAN) revealed that the total number of Nigerian MSMEs dropped by 2 million between 2017 and 2021[23]. This decline within a four-year period was attributed to the COVID-19 effect and macroeconomic factors such as the rise inflation rate, interest rate and foreign exchange rate.

Data from CBN shows that the inflation rate Nigeria rose from 11.98% in December 2019 to 25.80% as of August 2023[24]. This indicates a 115.36% rise in the inflation rate in about four years.

Similarly, the official exchange rate for the United States Dollar (USD) rose from N360.20 in 2018 to an average of N770.00 as of August 2023[25], indicating a 113.89% rise in the official foreign exchange rate for the USD in Nigeria.

The United States Government, in September 2023, opined that "*Nigeria lacks the macroeconomic framework to address its challenges of foreign exchange instability*.[26]"

Our engagement and interview sessions with tech hubs, Startup incubators, investors, government MDAs, etc revealed that an average of 6 in 10 Nigerian Startups fail within the first one to five years; this implies an average Startup failure rate of 60% in Nigeria.

Six in ten Nigerian Startups (60%) fail within the first one to five years of commencing business operations.

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[23] SMEDAN (2022), *The Nigeria MSME Report 2022;* online available at https://smedan.gov.ng/wp-content/uploads/2022/07/Kippa-MSME-Report.pdf; p7
SMEDAN (2022), *MSMEs drop by 2 million in four years – SMEDAN;* online available at: https://punchng.com/smedan/

[24] CBN (2023), *Inflation Rates;* online available at: https://www.cbn.gov.ng/rates/inflrates.asp

[25] CBN (2023), *Exchange Rates*; online available at: https://www.cbn.gov.ng/rates/exchratebycurrency.asp

[26] Daily Post (2023), *Nigeria Lacks the Macroeconomic Framework to attract Foreign Direct Investment*; Remark by US Deputy Secretary of Treasury, Wally Adeyemo; online available at: https://dailypost.ng/2023/09/19/nigeria-lacks-macroeconomic-framework-to-attract-foreign-direct-investments-us/; published on 19th September, 2023.

3.5 SWOT Analysis of Digital Entrepreneurship & Businesses Landscape in Nigeria

The table below shows a SWOT analysis of the digital entrepreneurship and business landscape in Nigeria.

Table 17:SWOT Analysis of Digital Entrepreneurship and Business Landscape in Nigeria

Strengths	Weaknesses
a. Large youthful population of entrepreneurs. b. Strong social media presence. c. Good teledensity indices (115.70% as of July 2023).[27] d. Honeypot for sponsorship of tech-based innovations by international VCs. e. Healthy competition. f. Large customer base. g. Ease of registering a business. h. Strong presence of technology hubs, incubators and accelerators. (there were at least 98 hubs, incubators and accelerators in Nigeria as of 2022).[28] i. Presence of enabling policies e.g. NDEPS (2020 -2030), NDISEP, Nigeria Startup Bill, etc. j. Job creation- MSMEs accounts for 84% of jobs in Nigeria.	a. Slow implementation of enabling policies. b. Access to funding. c. Poor national infrastructure. d. Cost of data e. Cost of ICT assets/toolkits. f. Unharmonized tax regime. g. Ease of doing business. h. Cybersecurity issues. i. Digital literacy issues. j. Low awareness on available MSME opportunities. k. Digital divide. l. Social inclusion.
Opportunities	**Threats**
a. Consumer-based and innovation-driven products and services. b. Improved connectivity and data rates from the rollout of 5G network and expansion of 4G/LTE network. c. Synergy between stakeholders in the digital entrepreneurship ecosystem.	a. Economic instability. b. High inflation rate (24.08% as of July 2023 and 28.92% as of December 2023).[29] c. High interest rate (18.75% as of July 2023 and).[30] d. Problem of insecurity. e. Unstable and high foreign exchange rate: 1$ = N775 as of August 2023 and N1,500 as of February 2024.[31]

[27] NCC (2023), *Industry Statistics*, online available at: https://ncc.gov.ng/statistics-reports/industry-overview
[28] JICA (2022), *Ecosystem Report: Nigeria Startup Scene;* online available at: https://www.jica.go.jp/Resource/nigeria/english/office/topics/gh13tc000000sz4y-att/220328_01.pdf
[29] CBN (2023), *Inflation Rates (Percent);* online available at: https://www.cbn.gov.ng/rates/inflrates.asp
[30] CBN (2023), *CBN Increases Interest Rate to 18.75%;* online available at: https://businessday.ng/business-economy/article/cbn-raises-interest-rate-to-18-75-says-fx-market-will-stabilise/
[31] CBN (2023), *Exchange Rates;* online available at: https://www.cbn.gov.ng/rates/ExchRateByCurrency.asp?CurrencyType=$USD

3.6 Benchmarking of ICT Innovation Activities, Adoption Practices and Impacts

The Study shall benchmark and present ICT innovation activities and adoption practices from other developing countries and consider the impact of ICT innovation activities in those countries in recent times**.** The countries selected for benchmarking are Kenya, South Africa and India.

3.6.1 Reasons for Choice of Country Selection for Benchmarking

The key reasons for selection of these countries for the benchmarking are enumerated in the table below.

Table 18: Reasons for Choice of Countries for Benchmarking

SN	Country	Key Reasons for Country Selection
a.	Kenya	a. Kenya is one of Africa's fastest growing economies with several emerging markets. b. It is the largest economy in the East African sub-region. c. Strong Tech hub and digital entrepreneurship presence (especially in Nairobi). d. Recently launched a 5 years digital economy acceleration programme (2023 – 2028)
b.	South Africa	a. Most developed Startup ecosystem in Africa. b. Within the top 3 innovative countries in Africa for the last three years; only second to Mauritius. c. Most technologically advanced country in Africa for over a decade. d. Very healthy GDP per capita indices.
c.	India	a. Third largest economy in Asia. b. Large human capital capacity due to its population. (India is the most populous country in the World, Nigeria is the 6th)[32]. c. Within the top 40 most innovative countries in the World. d. Strong Government-Diaspora programme for knowledge and technology transfer.

[32] United Nations (2023), *Countries in the world by population (2023)*; online available at: https://www.worldometers.info/world-population/population-by-country/

3.6.2 Key ICT Innovation and Adoption Initiatives

The following sections enumerates the key ICT innovation and adoption initiatives in Kenya, South Africa and Nigeria.

3.6.2.1 Kenya

Kenya has been actively pursuing various ICT initiatives aimed at fostering economic growth, improving governance, and enhancing service delivery. Some of its notable ICT innovation and adoption initiatives include:

a. **Kenya Digital Economy Acceleration Project 2023 – 2028**: This is Kenya's blueprint for its digital economy agenda; Its implementation has been focused on expanding access to high-speed internet, improving the quality and delivery of education and selected government services, and building skilled Kenyans.
b. **Konza Technopolis**: Konza Technopolis, often referred to as "Africa's Silicon Savannah" is a flagship project aimed at creating a sustainable, world-class technology hub and major economic driver for Kenya.
c. **National Optic Fibre Backbone Infrastructure (NOFBI)**: This project aims to expand broadband access throughout Kenya by laying down a national fibre optic cable network. This initiative is part of Kenya Vision 2030.
d. **Digital Literacy Program**: Formerly known as the "Laptops for Schools" project, this initiative aims to introduce digital learning in primary schools by providing tablets to pupils as early as Class one i.e. Primary one.
e. **Huduma Centres**: These are one-stop service centres where Kenyan citizens can access various public services such as civil registrations, business registrations, tax PIN application, general information, etc. The initiative is aimed at streamlining and improving public service delivery. There are over 50 of such centres around Kenya.
f. **eCitizen Portal**: This is an online platform that provides various government services, such as applying for passports, driving licenses, and business permits.
g. **Ajira Digital Program**: This initiative aims to introduce young people to online work, and provide the necessary tools and training to enable them to take advantage of digital job opportunities.
h. **Universal Service Fund (USF)**: Managed by the Communications Authority of Kenya, the USF aims to promote ICT access in underserved areas of the country.

Sources:

Kenya Ministry of ICT, Communications and Digital Economy (2023); https://ict.go.ke/

Kenya ICT Authority (2020); *ICT Authority Strategic Plan (2020 – 2024);* online available at: https://cms.icta.go.ke/sites/default/files/2021-12/downloads_9.pdf

3.6.2.2 South Africa

Following the launch of the South Africa in the Digital Age (SADA) in 2019, most of the ICT innovation and adoption initiatives in South Africa have been geared towards advancing digital transformation across various sectors. Some of the notable initiatives include:

a. **South Africa in the Digital Age (SADA) Initiative**: This was launched in 2019 to promote inclusive growth for all South Africans in the digital age. SADA aims to address the human capital challenges of South Africa in preparation for the Fourth Industrial Revolution (4IR).

b. **SA Connect Phase 2**: This is South Africa's broadband policy, which aims to provide universal broadband access and connect over 42,000 government facilities across South Africa.

c. **Digital Terrestrial Television (DTT) Migration**: This initiative is aimed at migrating broadcasting services from analog to digital across all nine provinces. This migration is expected to free up valuable spectrum, which can be used for mobile broadband services.

d. **e-Government Programme**: This includes the development of online platforms and portals for various government services to foster improved service delivery, reduced costs, and increased transparency.

e. **Data Must Fall Campaign**: This is a civil society-driven campaign that calls for the reduction of data costs in South Africa. The campaign has led to increased scrutiny of data pricing by mobile operators and regulatory interventions to reduce costs.

f. **Cybersecurity Initiatives**: Recognizing the importance of cybersecurity, the South African government has been working on various initiatives, including the establishment of a cybersecurity hub. Its Cybercrime Act was proclaimed in December 2021.

g. **4th Industrial Revolution (4IR) Commission**: This commission is tasked with developing, implementing, monitoring and steering South Africa to harness the opportunities of the 4th Industrial Revolution. Key strategies include infrastructure, regulations, manufacturing, research, innovation, etc.

h. **Public Wi-Fi Initiatives**: Free Wi-Fi zones have been rolled out across various municipalities and provinces in South Africa (such as Tshwane, Johannesburg, Cape Town) to increase internet access for residents.

Source:

Genesis Analytics (2019); *South Africa in the Digital Age (SADA): Pathway to Digital Work;* online available at: https://genesis.imgix.net/uploads/files/Pathways-to-Digital-Work-SADA-Strategy-Primer-full-report.pdf

3.6.2.3 India

Recent ICT innovation and adoption initiatives in India are aimed at promoting digital inclusion, improving governance, and driving economic growth and development. Some of the notable initiatives include:

a. **Digital India**: This is a flagship program aimed at transforming India into a digitally empowered society and knowledge economy by 2030. It encompasses various initiatives, including digital infrastructure development, e-governance, and digital literacy.
b. **Unified Payments Interface (UPI):** Developed by the National Payments Corporation of India (NPCI), UPI is a real-time payment system that facilitates interbank transactions using mobile phones. It has revolutionized digital payments in India.
c. **Aadhaar Digital Identity Programme**: This is a unique identification project, where Indian residents are provided with a unique 12-digit number linked to their biometric and demographic data. It serves as digital identity for various services, including banking, mobile connectivity, and subsidies. Over 1.2 billion residents have been enrolled.
d. **BharatNet Rural Broadband Initiative**: This is India's ambitious project to connect all of India's rural and remote areas with high-speed broadband internet using optical fiber.
e. **e-NAM (National Agriculture Market)**: This is a pan-India national electronic trading portal completely funded by the Central Government and implemented by a consortium of small Agribusiness farmers.
f. **DigiLocker Platform**: This is an e-government platform and a key programme under the Digital India initiative. The DigiLocker platform is aimed at creating paperless governance, and reducing the need for physical paper by leveraging the apps.
g. **SWAYAM Free Online Education Platform**: An online education initiative that aims to bridge the digital divide for students who have hitherto remained untouched by the digital revolution and have not been able to join the mainstream of the knowledge economy. SWAYAM is funded and supported by the Indian central government. It has about 200 partnering institutes and over 37million enrolled students.
h. **National Digital Health Mission (NDHM)**: Launched in 2020, this initiative aims to develop the necessary health IT infrastructure to support the integration of digital health services across the country.
i. **Smart Cities Mission**: This is an urban renewal and retrofitting program to develop 100 cities across the country, making them citizen-friendly and sustainable, with ICT as one of the core components. A total of 5,909 from 7,978 projects i.e. (74%) have been completed as of August 2023.
j. **Cyber Surakshit Bharat Initiative**: This was launched in 2018, in collaboration with the IT industry and academia, this initiative aims to continuously spread awareness about cybercrime and building capacity for safety measures for Chief Information Security Officers (CISOs) and frontline IT staff across all government departments.

k. **Atal Innovation Mission (AIM)**: This is an initiative by the National Institution for Transforming India (NITI) to promote a culture of innovation and entrepreneurship, which includes establishing Atal Tinkering Labs (ATL) in schools across India to inculcate a problem-solving mindset among students. India has more than 8,700 ATLs in 34 states and union territories spanning 722 districts. Over 70% of ATLs are in government schools.

l. **PM-WANI (Wi-Fi Access Network Interface):** Launched in 2020, this initiative aims to proliferate Wi-Fi hotspots in public spaces, thereby expanding internet access.

Sources:

Ministry of Electronics and Information Technology (MEIT), India (2023); https://www.meity.gov.in/

Government of India (2020), *India's Export of ICT-Enabled Services;* online available at: https://unctad.org/system/files/non-official-document/tbd_ede_wg2021c02_India_en.pdf

ITU (2020), Advancing innovation in India's ICT industry – and beyond; online available at: https://www.itu.int/hub/2020/04/advancing-innovation-in-indias-ict-industry-and-beyond-malcolm-johnson/

3.6.2.3 Summary of Key ICT Innovation and Adoption Initiatives

The table below shows the recent key ICT innovation and adoption initiatives in the selected countries.

Table 19: Key ICT Innovation and Adoption Initiatives in Nigeria, Kenya, South Africa and India

Nigeria	The NDEPS (2020 - 2030) is Nigeria's blueprint for transition to a digital economy. It features 8 pillars: Development Regulations; Digital Literacy; Skill Development; Solid Infrastructure; Service Infrastructure; Soft Infrastructure; Digital Societies and Emerging Technologies, as well as Indigenous Development. Recent initiatives such as ICT parks, digital literacy and skills trainings, broadband penetration, etc. are driven by the NDEPS.
Kenya	Kenya Digital Economy Acceleration Project 2023 – 2028 is in consonance with its National ICT strategy (2020 – 2024). The initiative focuses on rapid ICT and telecoms infrastructure growth and development, broadband penetration, digital migration, e-Learning, skills development, new and emerging technology adoption.
South Africa	The South Africa in the Digital Age (SADA) initiative was launched in 2019 to promote inclusive growth for all in the digital age. SADA aims to address the human capital challenges of South Africa in preparation for the Fourth Industrial Revolution (4IR). It also leverages strategies that will stimulate government support for a digital South Africa. Other focal areas are digital inclusion, technology for export, and digital job creation.
India	The Digital India initiative was launched in 2015 with the goal of helping India achieve the 17 Sustainable Development Goals (SDGs) by 2030; It is India's digital economy agenda. The initiative focuses on infrastructure growth and development, rural broadband penetration, digital skills development, local content development, financial inclusion and IoT.

3.6.3 Notable Impacts of ICT Innovation and Adoption Initiatives

The notable impacts of the ICT innovation and adoption initiatives are enumerated in the table below.

Table 20: Notable Impacts of ICT Innovation and Adoption Initiatives

Nigeria	a. Increased broadband penetration b. Job creation c. Investments to the ICT and telecoms sector d. Improvements in financial inclusion e. Digital literacy and inclusion f. Promotion of local content g. Diversification of the Economy
Kenya	a. Increased digital literacy b. Improvements in financial inclusion c. Rise in broadband penetration d. Job creation e. Increased Government interventions and support
South Africa	a. Digital literacy and inclusion b. Broadband penetration c. Local manufacturing d. Digital jobs creation e. Specialized programmes for skilled ICT professionals f. Increased government funding for research and development g. Increased readiness for the 4IR
India	a. Increased broadband penetration in rural areas b. Improvements in digital literacy indices c. Promotion of local content d. Improvements in innovation indices e. Sustained export of ICT enabled-services f. Improved financial inclusion
Sources: NCC (2023); *Industry Statistic;* online available at: https://ncc.gov.ng/statistics-reports/industry-overview Kenya ICT Authority (2023); online available at: https://www.icta.go.ke/ Department of Communications and Digital Technologies (2023); *Reports*; online available at: https://www.dcdt.gov.za/documents/reports.html Ministry of Electronics and Information Technology, Government of India (2023); online available at: https://www.meity.gov.in/digidhan	

3.6.4 Comparative Analysis

Table 21: Comparative Analysis of Economies, ICT Innovation and Adoption Activities for Nigeria, Kenya, South Africa and India

Parameters	Nigeria	Kenya	South Africa	India
Socio Economic Attributes				
Continent	Africa	Africa	Africa	Asia
Estimated Population (August 2023)	223 Million	55 Million	60 Million	1.42 Billion
Land Mass	923,768 km²	582,646 km²	1.22 Million km²	3.29 Million km²
Number of International Airports	9	5	22	34
Number of Domestic Airports	26	38	116	103
Number of Sea Ports	6	15	8	12
Mainstay of the Economy	Oil and Gas	Agriculture	Agriculture	Services & Domestic Consumption
GDP (2022)	$477.39 Billion	$113.42 Billion	$405.7 Billion	$3,386.4 Billion
GDP per Capita (2022)	$2,184	$2,099	$6,776	$2,389
Inflation Rate (August 2023)	25.80%	6.7%	4.8%	6.8%
Exchange rate of USD to Local Currency (Sept 2023)	781.31:1	147.50:1	18.75:1	83.27:1
Broadband Penetration (January 2023)	48.2%	32.7%	72.3%	48.7%
MSME Count (2022)	39.7 Million	7.4 Million	2.6 Million	63 Million
Key ICT Initiatives				
Major Digital Economy Enabling Policy	National Digital Economy Policy and Strategy 2020 -2030	Kenya Digital Economy Acceleration Project 2023 – 2028	South Africa in the Digital Age (SADA) 2019	Digital India 2015
Key ICT Programmes and Projects	- National broadband rollout (90% target by 2025), - Telecom & ICT infrastructure development - National Identity Management, - Digital skills development, - Local content development - Cybersecurity - Promotion of Innovation	- National fibre optic broadband infrastructure, - Digital migration, - E-Learning and skills development, - Local Content Programmes - Information Security, etc - New and emerging Technology adoption	- South African in the Digital Age agenda, - Research and Development, - Digital Terrestrial Television (DTT) - South Africa Connect Broadband Rollout (100% target by 2030) - Local manufacturing for export of ICT devices	- Digital Infrastructure Development; - Broadband Rollout for rural areas - Transition and adoption of new and emerging technologies e.g. AI, Blockchain, IoT, etc - Acceleration of local content development - Financial Inclusion

Impacts of ICT Adoption				
ICT Sector Contribution to GDP (2022)	16.51%	7.5%	2.6%	13%
Job Creation Trend	2.2 Million jobs created between 2020 and 2022	Total of 1.9 Million jobs in 2022 (638,000 in 2019)	Slight increase in job creation in the last two years	Abundant Job opportunities 5.4 Million in 2022 4.4 Million in 2019
Social Media Users	31.6 Million	10.55 Million	25.8 Million	470.1 Million
Financial inclusion (2022)	64%	83.7%	90%	56.4%
Digital Skill Gap Index (DSGI) 2023	103rd from 134	70th from 134	84th from 134	56th from 134
Global Startup Ecosystem Report 2023 Rank	64th from 100	62nd from 100	53rd from 100	21st from 100
Global Soft Power Index (2022)	93rd from 121	100th from 121	40th from 121	28th from 121
Global Innovation Index (2023)	109th from 132 (up by 5 positions from 2022)	100th from 132 (down by 12 positions from 2022)	59th from 132 (up by 2 positions from 2022)	40th from 132 (Same position from 2022)
Notable ICT Startups	Flutterwave, Paystack, Kuda Bank, Moniepoint etc.	Zanifu, LipaLater, Ace Mobility, Kotani Pay, etc.	Pineapple, FloatPay, Naked Insurance, Porcupine Union, etc.	Boat, PayTm, Meesho, OLA, Udaan, etc.
Major ICT Ecosystem Challenges				
Major challenges	- Macroeconomic factors - Policy Implementation - Infrastructure Deficiency - Emigration of Skilled Workers	- Human capital issues (shortage of skilled manpower) - Infrastructure Deficiencies	- Communication Costs - Connectivity Problems - Shortage of Specialized Manpower	- Infrastructure Deficiency in rural areas - Shortage of Specialized Manpower for local ICT jobs

Data Sources:

ITU (2019); *Digital Innovation Profile – South Africa;* online available at: https://www.itu.int/en/ITU-D/Innovation/Documents/Publications/Brochure%E2%80%93DIP%20South%20Africa.pdf https://www.itu.int/en/ITU-D/Innovation/Documents/Publications/Brochure%E2%80%93DIP%20South%20Africa.pdf

World Bank (2019), *South Africa: Digital Economy Diagnostics;* online available at https://documents1.worldbank.org/curated/en/464421589343923215/pdf/South-Africa-Digital-Economy-Diagnostic.pdf

WIPO (2023); *Global Innovation Index: Innovation in the Face of Uncertainty;* Online available at: https://www.wipo.int/edocs/pubdocs/en/wipo-pub-2000-2023-en-main-report-global-innovation-index-2023-16th-edition.pdf

Wiley (2021), *Digital Skill Gap Index (DSGI) -2021;* online available at: https://dsgi.wiley.com/global-rankings/

Genesis Analytics South Africa (2019); *South Africa in the Digital Age (SADA);* online available at: https://genesis.imgix.net/uploads/Pathways-to-Digital-Work-SADA-Strategy-Primer-full-report.pdf

Privacy Shied Framework (2020), *India – Information and Communication Technology;* online available at: https://www.privacyshield.gov/ps/article?id=India-Information-and-Communication-Technology

Quartz (2020), *India's IT industry Created More Jobs than in 2019;* online available at: https://qz.com/india/1801699/indias-it-industry-created-more-jobs-in-2019-than-a-year-ago

Tralac (2022), *The Micro and Small Medium Enterprises Development in Kenya;* online available at: https://www.tralac.org/blog/article/15863-the-micro-and-small-medium-enterprises-development-in-kenya.html

Web Manager Blog (2023), Promoting ICT in Nigeria: Discover 8 Key Government Initiatives and Players; online available at: https://webmanager.ng/blog/promoting-ict-government-initiatives-players/

The following key points were deduced from the benchmarking analysis:

a. Policy formulation and dedicated implementation are key drivers of the transition to a digital economy.
b. National infrastructure is vital for a mature ICT ecosystem and a thriving digital business landscape.
c. Broadband penetration is a major enabler for ICT growth and development.
d. Macroeconomic factors can greatly inhibit the rate of growth and development of the ICT ecosystem.
e. Digital literacy is a determinant for use and adoption of ICT.
f. The ICT sector has huge potential for job creation and job sustenance.
g. Financial inclusion promotes the adoption of digital products and services.
h. The ICT sector has a huge potential for diversification of the economy.
i. Skilled human capital is an essential component that drives the digital economy agenda of any nation.

4. Conceptual Framework for Sustainable Digital Entrepreneurship and Business Model Development in Nigeria

4.1 Business Models

A business model is an aggregation of a company's strategic plan on how to create, deliver and capture value, which should be measurable. A business model is guided by answers to critical questions such as:

a. What do you offer to customers?
b. Who are your target customers (segments)?
c. How is the value proposition created?
d. Why is it profitable?[33]

Defining a business model helps entrepreneurs and businesses to have a sense of purpose and direction, motivate leadership, engage effectively with customers, attract investors, recruit and motivate the right staff.

There are three main areas of focus in a business model: **value proposition**, **value delivery**, and **value capture**. The proposition outlines who the customers are and what the business will offer. The delivery details how to organize the business to deliver on the proposition. The capture is a hypothesis on how the proposition and delivery will align to return value back to the business[34]. The figure below shows the three focus areas.

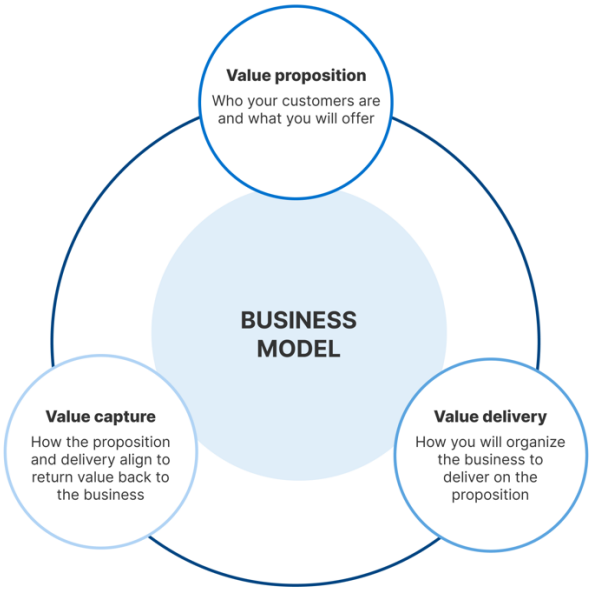

Figure 25: Focus Areas in a Business Model
Image Source: https://www.aha.io/roadmapping/guide/product-strategy/what-are-some-examples-of-a-business-model

[33] Business Model Innovation Lab (2023), *Discussing Business Model Innovation with Prof. Felix Hofmann;* online available at: https://fourweekmba.com/business-model-innovation-felix-hofmann/
[34] Aha (2023), *what is Business Model (plus, how to define yours);* online available at: https://www.aha.io/roadmapping/guide/product-strategy/what-are-some-examples-of-a-business-model

4.1.1 Digital Business Models

Unlike traditional businesses, a digital business is driven by technology, and focuses on its use to drive business progress and performance.

Digital business model refers to a business strategy that utilizes technology to create and sustain value (financial, operational and competitive advantages). Advancements in ICT and the evolution of consumer behaviour have resulted in a paradigm shift on how businesses operate; today, there is a conscious effort to use technology wherever possible to drive operational efficiency.

"In recent years, Nigeria has witnessed an unprecedented surge in digitalization, with mobile network access assuming a pivotal role. The proactive investment in telecom infrastructure has paved the way for the widespread adoption of 4G technology, and the nation is stepping into the 5G era"[35].

Digital business models help businesses overcome some of the prevalent operational challenges that plague traditional businesses such as customer engagement, marketing, product management, sales projections, location-barrier, etc. The figure below summarizes the benefits of a digital business.

Figure 26: Benefits of a Digital Business

Image Source: *Sydle (2021), Digital Businesses: What Are They and How Do You Manage Them?; online available at:* https://www.sydle.com/blog/digital-businesses-6182d1bd3885651fa241cb66

[35] Ericcson (2023), *Unleashing Sustainable Digital Transformation in Nigeria;* online available at: https://www.ericsson.com/en/blog/1/2023/unleashing-sustainable-digital-transformation-in-nigeria

A Forbes (2023) publication recognized the following as seven of the most successful business models in the digital era: Advertising-Support, E-commerce, Freemium, Marketplace/Platform, Subscription, Aggregator or Sites and Crowd Funding.[36]

The table below contains a synopsis of these popular digital business models and examples of Nigerian businesses that operate these models.

Table 22: Digital Business Models, Synopsis and Examples of Popular Nigerian Businesses using such Models

SN	Digital Business Model	Description	Example of Popular Nigerian Businesses Using the Model
a.	Advertising-Supported	This involves the provision of free content to users and the hosting or presentation of advertisements for other businesses' products and services to their audience.	Blogs, Online Newspapers, Skit-makers, Content-creators, etc.
b.	E-Commerce	This model utilizes the offering of products and services directly to customers through an online platform, usually a web portal.	Jumia, Konga, Jiji, Kara, Slot, Domestic Airlines, etc.
c.	Freemium	This involves offering basic services to customers, for free and then charging a fee for access to premium services.	DSTV, StarTimes, Go-TV, etc.
d.	Marketplace/Platform	This is an extended e-commerce model that allows businesses to setup their online store front to offer products and services to customers thereby leveraging the customer bases of the marketplace.	Jumia, Konga, Jiji, Kara, AutoCheck, Spa Market, etc.
e.	Subscription	This requires customers to pay for access to products and services.	Nollyland, IrokoTV, DSTV, Go-TV, StarTimes, uLesson, etc.
f.	Aggregator or Sites	This model involves the provision of a single portal platform or application where customers can search for, compare and purchase related products and services from different merchants.	Wakanow, Travelbeta, Jiji, Jumia Food, etc.
g.	Crowd-Funding	This involves raising funds/capital through small amounts of money from large number of investors.	PiggyVest, Cowrywise, Alat by Wema, PalmPay, Kuda bank, etc.

[36] Forbes (2023), *The 7 Most Successful Business Models of the Digital Era;* online available at: https://www.forbes.com/sites/bernardmarr/2023/03/14/the-7-most-successful-business-models-of-the-digital-era/?sh=4a76be0f5617

A few Nigerian digital businesses (mostly techpreneurs) favour a variation of the freemium model, where they typically offer their app for free download with zero subscription cost and then charge their customers a transaction or commission fee for usage; examples include BuyPower, ChipperCash, Paystack, Flutterwave, etc.

Digital content creators (such as skit makers, bloggers, etc.) prefer the Affiliate business model where companies pay them to promote products/services on their platform which can reach millions of users, especially via social media.

4.1.2 Business Model Canvas

A business model canvas (BMC) is a strategic management tool that provides a visual representation of a business model. It can be used to document new business models or update existing ones.

A typical business model canvas consists of nine sections namely:

a. **Customer Segments:** This is the first step in a business model canvas creation. It involves determining who the different customer groups for the business and which customers are most important.
b. **Value Propositions:** This defines the different products and services that a business is offering as value to customers.
c. **Channels:** This defines how a business intends to communicate and reach its customers.
d. **Customer Relationships:** This describes the types of relationship between a business and its customers. The goal is to have a strategy for customer acquisition and retention.
e. **Revenue Streams:** This documents the income a company generates from each of its customer segments. Earnings are realized only when the revenues exceed the costs.
f. **Key Resources:** These are the key assets required to make the business model work. They typically include financial, human, physical and intellectual resources.
g. **Key Activities:** This defines the vital things that a business must do to make its business model successful.
h. **Key Partners:** This describes the network of suppliers and business partners required to make the business model work.
i. **Cost Structure:** This represents all the costs incurred to implement a business model.

The figure below shows a business model canvas with the numbered steps on how to populate the different sections.

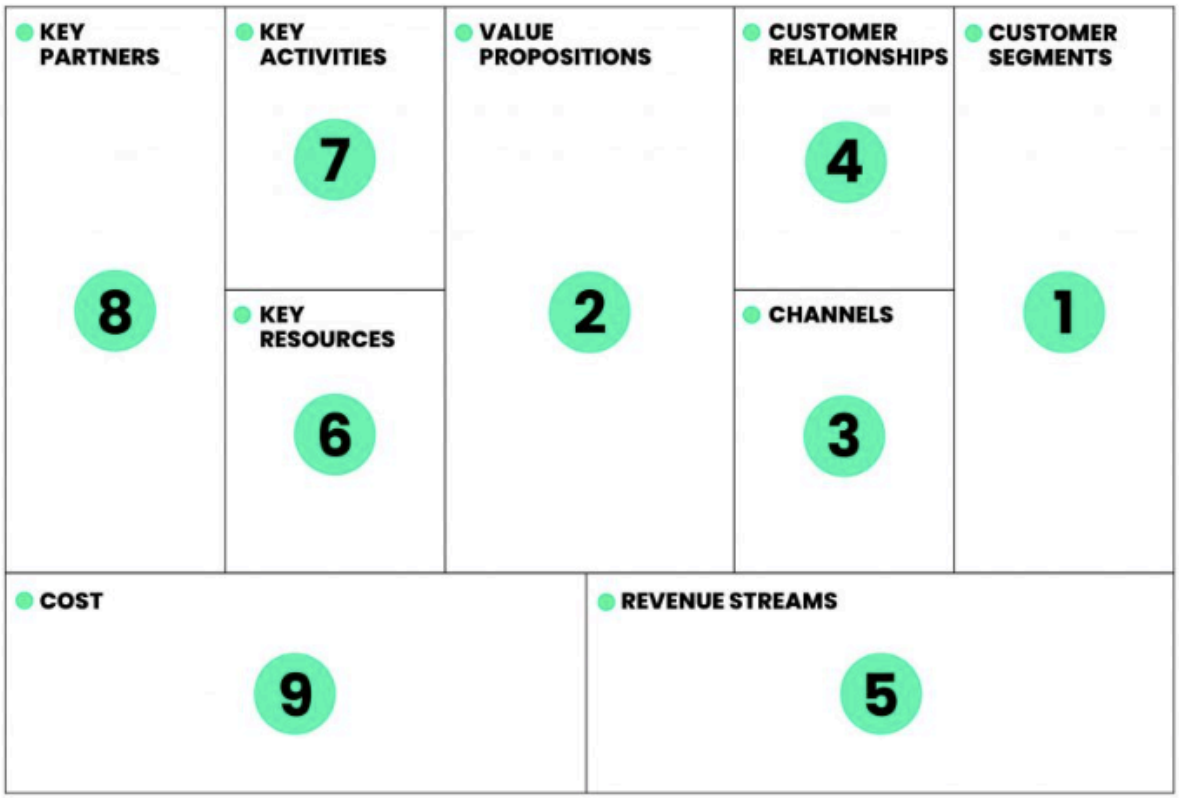

Figure 27: Business Model Canvas Template with Steps to Populate the Canvas

Image Source: The Power Business School (2023); *The 9-step business model canvas explained*; online available at: https://www.thepowermba.com/en/blog/business-model-canvas

Several questions must be answered by digital entrepreneurs and business managers to effectively populate their business model canvas. The table below enumerates they key questions for each segment of the business model canvas.

Table 23: Critical Questions to Answer in Developing a Business Model

SN	BMC Component	Critical Questions
1.	Customer Segments	• *Who are we creating value for?* • *Who are our most important customers?*
2.	Value Propositions	• *What value do we deliver to the customer?* • *Which one of our customer's problems are we helping to solve?* • *Which customer needs are we satisfying?* • *What bundles of products and services are we offering to each Customer Segment?*
3.	Channels	• *Through which Channels do our Customer Segments want to be reached?* • *How are we reaching them now?* • *How are our Channels integrated?* • *Which ones work best?* • *Which ones are most cost-efficient?* • *How are we integrating them with customer routines?*
4.	Customer Relationships	• *What type of relationship does each of our Customer Segments expect us to establish and maintain with them?* • *Which ones have we established?* • *How costly are they?* • *How are they integrated with the rest of our business model?*
5.	Revenue Streams	• *For what value are our customers willing to pay?* • *For what do they currently pay?* • *How are they currently paying?* • *How would they prefer to pay?* • *How much does each Revenue Stream contribute to overall revenues?*
6.	Key Resources	• *What Key Resources do our Value Propositions require?* • *What Key Resources do our Distribution Channels require?* • *What Key Resources do our Customer Relationships require?* • *What Key Resources do our Revenue Streams require?*
7.	Key Activities	• *What Key Activities do our Value Propositions, Distribution Channels, Customer Relationship and Revenue Streams require?*
8.	Cost Structures	• *What are the most important costs inherent in our business model?* • *Which Key Resources are most expensive?* • *Which Key Activities are most expensive?*

NOTE:
The questions above have been adapted from a combination of:

a. Feedback from interview/engagement sessions with key respondents.
b. Study of the widely consulted handbook for visionaries and entrepreneurs i.e. Business Model Generation (2010) by Alex Osterwalder & Yves Pigneur

The answers to some of the questions for Value, Channels, Customer Relationships, and the Revenue Streams component require feedback from the target customer group. This implies that entrepreneurs and startups need to conduct some sort of preliminary survey or feasibility study before venturing into business.

4.2 Conceptual Framework for Sustainable Digital Business Model Development

4.2.1 Conceptual Framework Components

The conceptual framework comprises of six (6) components namely:

a. Preliminary Business Analysis,
b. Business Model Creation/Innovation,
c. Business Model Implementation,
d. Business Outputs,
e. Business Performance Evaluation (i.e. feedback system), and
f. Business Outcomes.

The conceptual framework components are a result of aggregation of responses from subject matter experts, findings from field survey exercise, and review of relevant documentations, reports, etc.

4.2.2 The Conceptual Framework Design

The conceptual framework is modelled around a feedback control system to assure sustainability of entrepreneurship and businesses that implement the model. The figure below shows the conceptual framework for sustainable entrepreneurship and digital business model development.

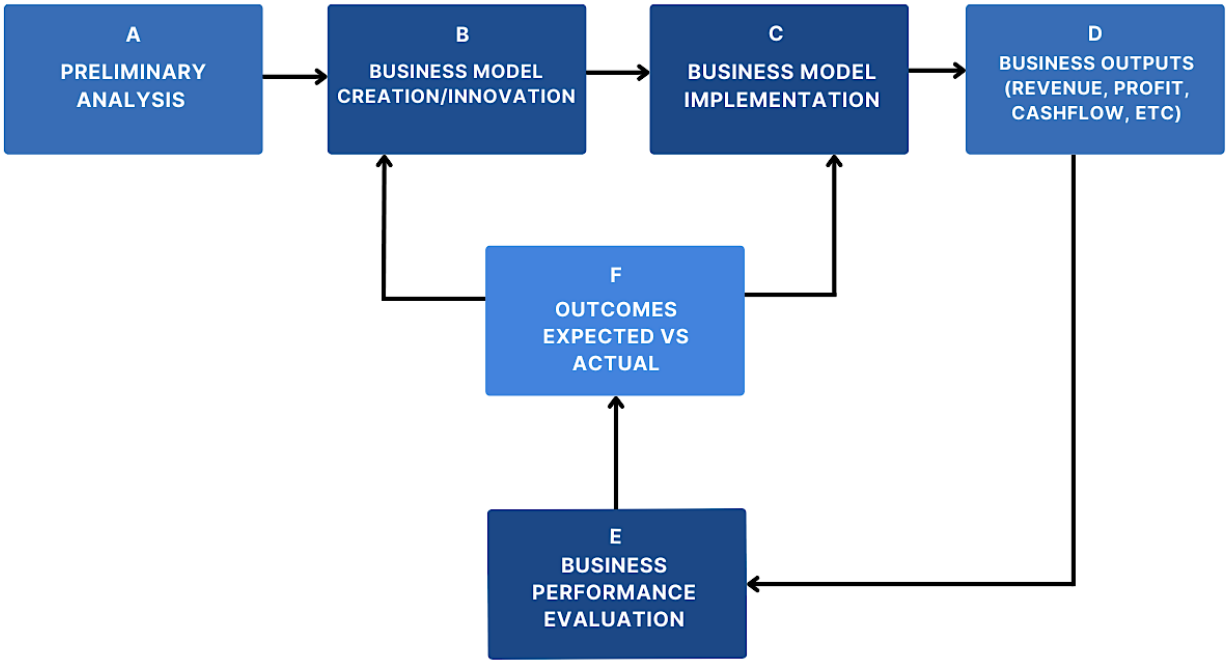

Figure 28: Conceptual Framework for Sustainable Digital Business Model Development

The details of the conceptual framework are enumerated below.

a. **Preliminary Analysis**: This involves assessing the intended business environment, value, customers, competitors, etc. It also involves determining who the partners are in the business as well as requirements for basic business registration, intellectual property registration, setup costs, etc. The result of the preliminary analysis should determine if the business will be viable and scalable. Entrepreneurs should not venture into businesses just by perception that the business will work – many Nigerian digital Startups make this mistake.

b. **Business Model Creation/Innovation:** This involves creation or update of the business model in line with the findings of the preliminary analysis. The output of this stage is a new or updated business model canvas. Entrepreneurs are expected to validate their business models to ensure that they are viable.

c. **Business Model Implementation**: This is the action phase of the business lifecycle. It involves implementing the strategies, plans and activities documented in the business model canvas. It also involves the actual running of the businesses. Key activities here involve:
   - Identification of partners and consolidation of business partnerships
   - Business registration or incorporation
   - Intellectual property registration (for creatives),
   - Legal documentations and sign-offs (Agreements, Non-Disclosures, etc),
   - Setup book keeping and financial accounting mechanisms,
   - Product design, development and production of minimum viable product,
   - Product marketing and sales, etc.

   Basically, an entrepreneur must constantly build or offer products and services that customers will derive value from to remain in business.

d. **Business Outputs:** This refers to outputs of the business model implementation such as revenue, cash flow, value creation, etc. It is important for entrepreneurs to note that for a start (within first six months to one year), cash flow is more important than profit – this is a mistake that most Startups often make in their first year of business. Another mistake that many digital Startups make in Nigeria is "grant-focus" – this is a scenario where digital businesses are operated with the goal of just obtaining financial grants as against creating sustained valued; many of the founders in this scenario stop innovating when they receive grants for their business.

e. **Business Performance Evaluation:** This is an assessment of how well the business is performing in line with the business model developed. This stage of the business lifecycle should be performed quarterly. Our survey revealed that over 70% of the interviewed entrepreneurs do not want to be accountable for their businesses, there is a poor culture of book keeping which results in financial mismanagement.

f. **Business Outcomes:** This is the result of the business performance evaluation. It shows empirical evidence of actual business performance in comparison to the expected/project business performance. Digital business owners are expected to take crucial business decisions based on the business outcomes recorded periodically. For instance, if a digital business is underperforming, the business managers may consider updating the business model (i.e. business model innovation) to address the gaps identified from the performance evaluation; however, if the business is performing as expected, the business managers may just continue with business model implementation but with innovation and customer retention in mind. The figure below shows a flowchart of the framework.

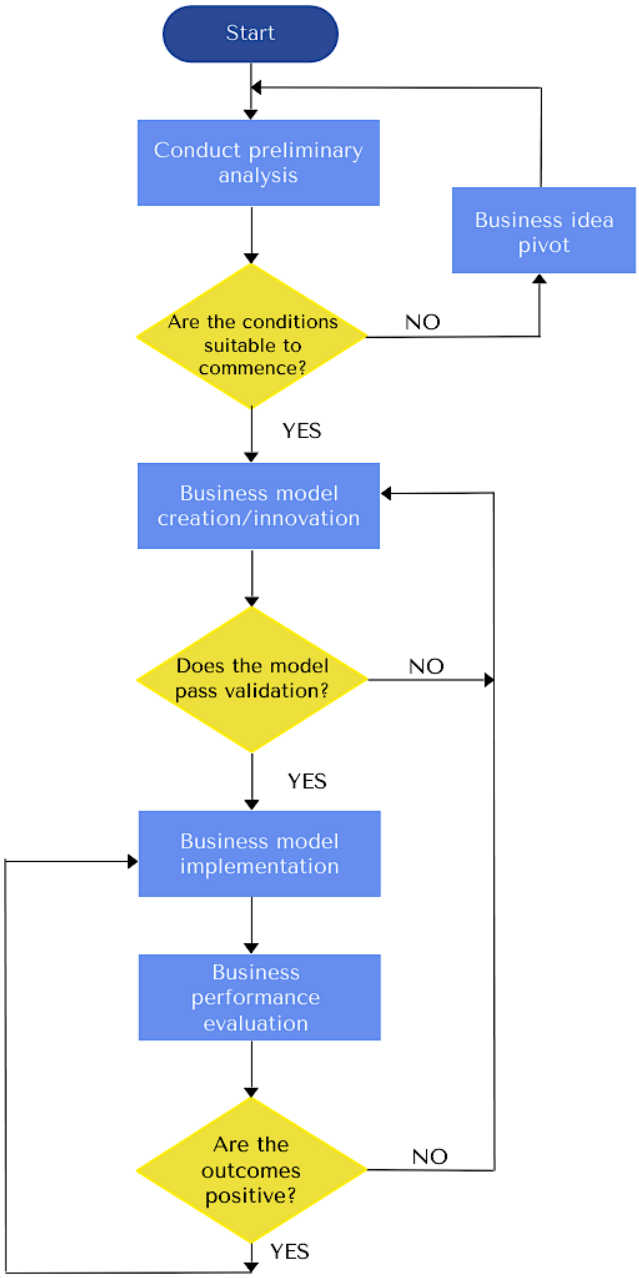

Figure 29: Flowchart of the Conceptual Business Model Implementation Process

The figures below show sample business model canvas of some popular digital businesses who have attained global recognition.

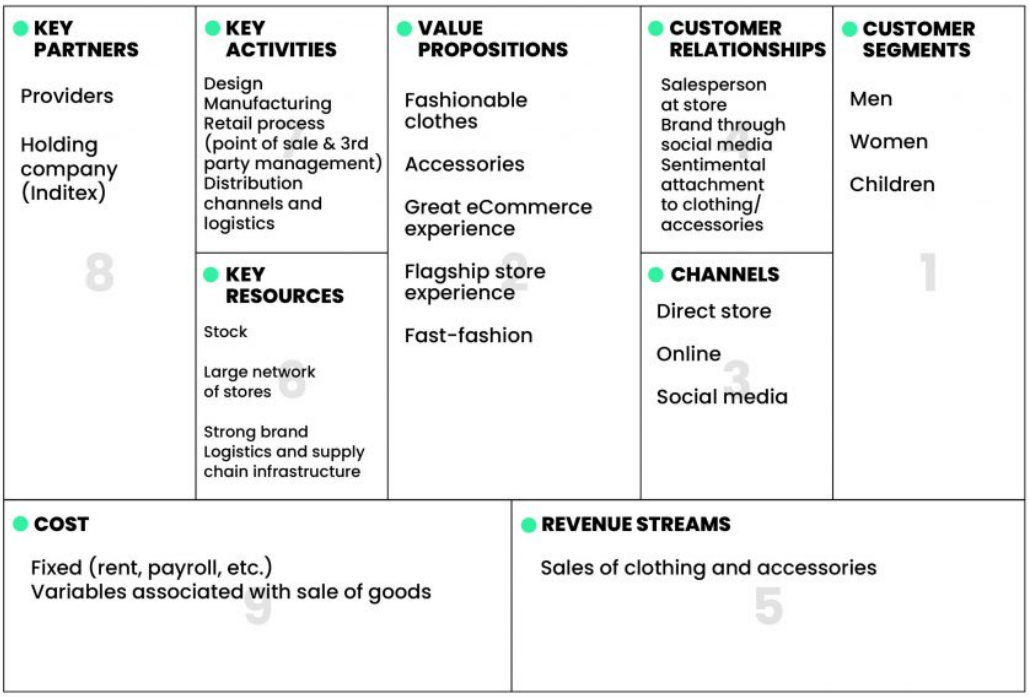

Figure 30: Sample Business Model Canvas for an Online Fashion Store
Image Source: The Power MBA (2023); online available at:
https://www.thepowermba.com/en/blog/business-model-canvas

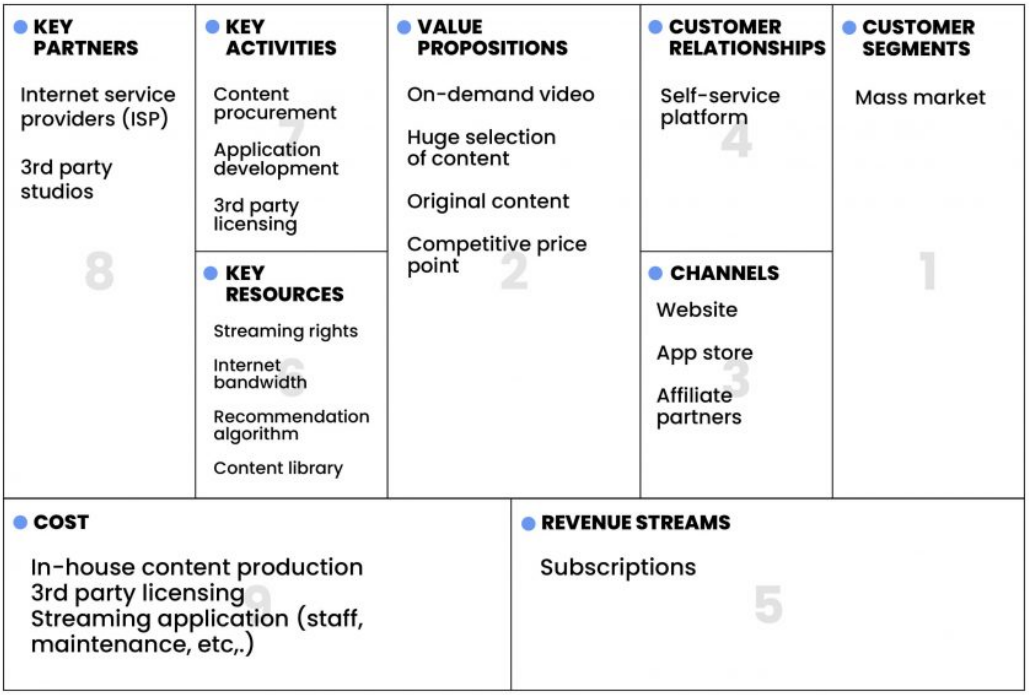

Figure 31: Sample Business Model Canvas for a Video Streaming Business
Image Source: The Power MBA (2023); online available at:
https://www.thepowermba.com/en/blog/business-model-canvas

4.2.3 Constraints in Business Model Development in Nigeria

The field survey revealed that although most entrepreneurs have an informal business model or paradigm that they abide by, only 3 in 10 digital businesses (i.e., 30%) sampled had a documented business model.

It was widely observed that bookkeeping is seldom practiced among Nigerian MSMEs. The figure below shows the constraints of business model development and implementation for digital businesses in Nigeria.

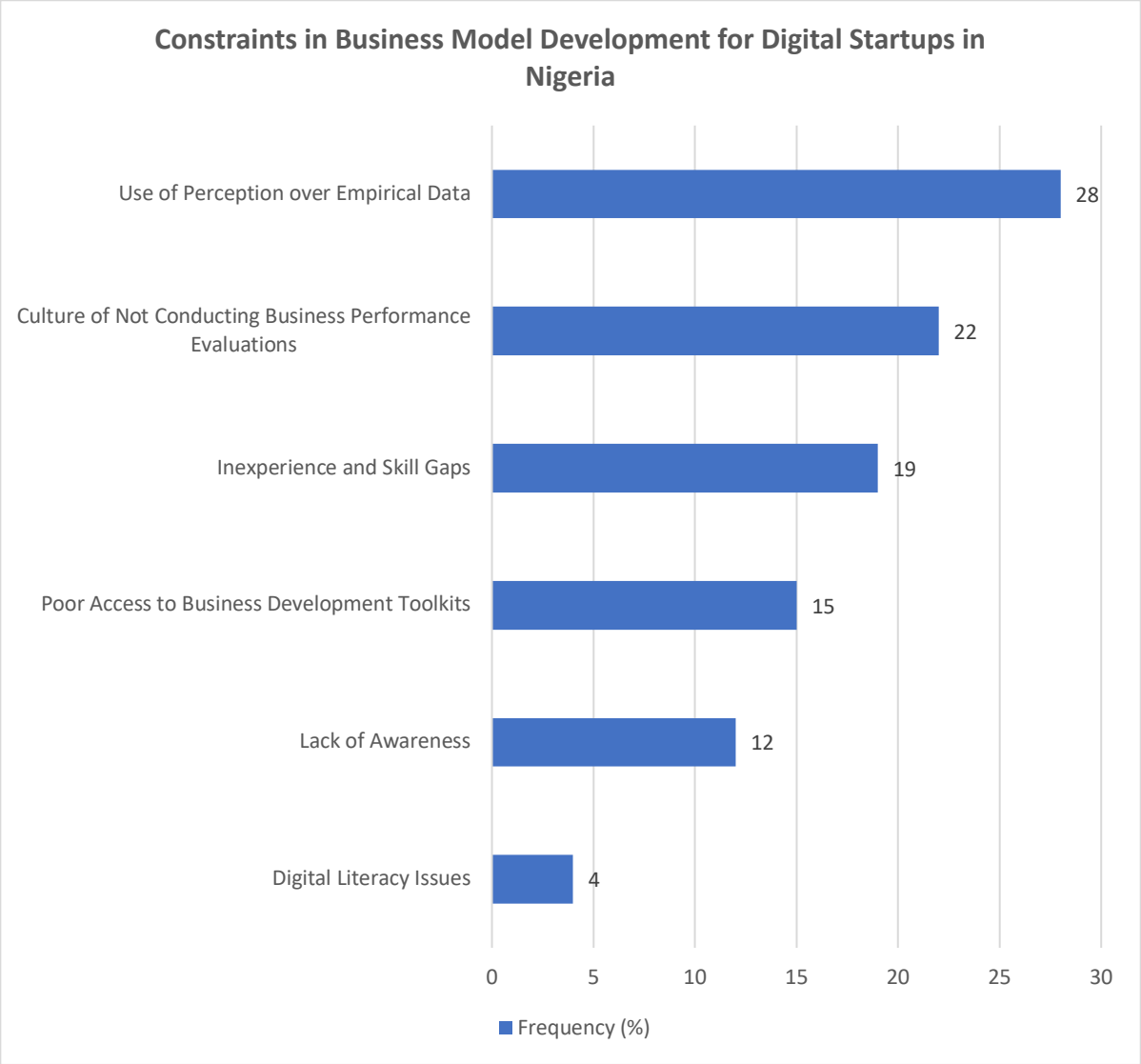

Figure 32: Constraints in Digital Business Model Development in Nigeria

The use of perception over empirical data topped the list of constraints faced by digital Startups in business model development. Other constraints include Culture of Not Conducting Periodic Business Performance Evaluation, Inexperience and Skill Gaps, Poor Access to Business Development and Management Toolkits, and Lack of Awareness.

4.3 Conceptual Framework for a Supportive Ecosystem for Digital Entrepreneurship & Businesses in Nigeria.

A sustainable digital business model cannot thrive in a defective business environment; this implies that the business environment needs to have the right enablers and drivers for a sustainable business model to work.

The World Bank launched a set of digital business indicators in 2017 to measure the laws, regulations, and bureaucratic processes that affect digital businesses. "*The initiative aims to advocate a research agenda that will develop the best regulatory and policy practices for governments seeking to promote the digital economy, particularly from the lens of doing business*"[37]. The digital business indicators include:

a. Connectivity,
b. Data privacy and security,
c. Logistics, payment, and
d. Digital market regulations.

The table below contains an array of feedback from some of the key respondents on measures that will ensure the growth and sustainability of digital entrepreneurship and startups in Nigeria.

Table 24: Feedback on Measures that will ensure Growth and Sustainability of Digital Entrepreneurship and Startups in Nigeria

Question: What measures will ensure the growth and sustainability of digital entrepreneurship and Startups in Nigeria?		
SN	Respondent	Feedback/Responses
a.	*Engr. Zainab Abdulmalik,* *North Central Zonal Office,* **Small and Medium Enterprises Development Agency of Nigeria (SMEDAN)**	- *Training and retraining of Startups by international resource* - *Constant mentoring* - *Post-training evaluations after empowerment* - *Synergy between government MDAs to assist Startups* - *Support in repackaging of products and services for the global market* - *Digital transformation of businesses*
b.	*Mr. Oguntade Oladapo*, *Unit Head, Innovation and Entrepreneurship,* **Office for Nigerian Digital Innovation (ONDI)**	- *Increased access to funding* - *Create and organize business support service programs* - *Enhance Infrastructure sharing* - *Favourable government policies*
c.	*Dr. Ibrahim Mohammed Gadafi,* *Department of Entrepreneurship Studies*, **National Open University of Nigeria (NOUN)**	- *Reduction in cost of Startup businesses* - *Reduce and eliminate multiple taxes*

[37] World Bank (2017); *Digital Business Indicators;* online available at: https://www.worldbank.org/en/research/brief/digital-business-indicators

		- *Investment in cybersecurity architecture*
d.	Commercial Department, **National Board for Technology Incubation (NBTI)**	- *Low Start-up Cost* - *Low Running Cost* - *Low Maintenance Cost* - *Improve Network Efficiency by Service Providers*
e.	*Director, Industrial Development Department,* **Federal Ministry of Industry, Trade and Investment**	- *Bridging digital & infrastructural facilities gap* - *Sector-specific funding/grants or schemes* - *Modern ICT incubation centres* - *Consistent national policy for ICT/Startups*
f.	*Office of the National President,* **Nigeria Association of Chambers of Commerce, Industry, Mines and Agriculture (NACCIMA)**	- *Demonstrate funding and access* - *Encourage digital skills all levels* - *Business climate should be made friendly* - *Digital identity should be enhanced and protected*
g.	*National Monitoring and Evaluation Department,* **Federal Ministry of Budget and National Planning**	- *Resolve Multiple Taxation* - *Implementation of government policies in the telecoms sector*
h.	*The National President,* **Nigeria Computer Society (NCS)**	- *Government motivation and support* - *Stable electricity and ease of communication* - *Access to data*
i.	*Mr. Tony Ofili,* *Planning, Research and Statistics Department,* **National Population Commission (NPC)**	- *Granting of loan facilities* - *Create incentives such as tax relief* - *Avoidance of over-regulation activities*
j.	Mr. Olumuyiwa Bashiru *Managing Partner,* ***Skillfield Associates Services***	- *Improved access to capital* - *Improved patronage and engagement MDAs and foreign markets* - *Improved infrastructure and ease of doing business indices*
k.	**Nigerian Investment Promotion Commission (NIPC)**	- *Creativity* - *Responsiveness to opportunities* - *Tolerance to risk* - *Leadership and ability to take advantage*
l.	**Federal Ministry of Youth and Sports Development**	- *Regular power supply* - *Training of youth on digital entrepreneurship* - *Provision of Startup fund either as loan or grant*

The figure below shows the developed conceptual framework for a supportive digital entrepreneurship and business ecosystem in Nigeria.

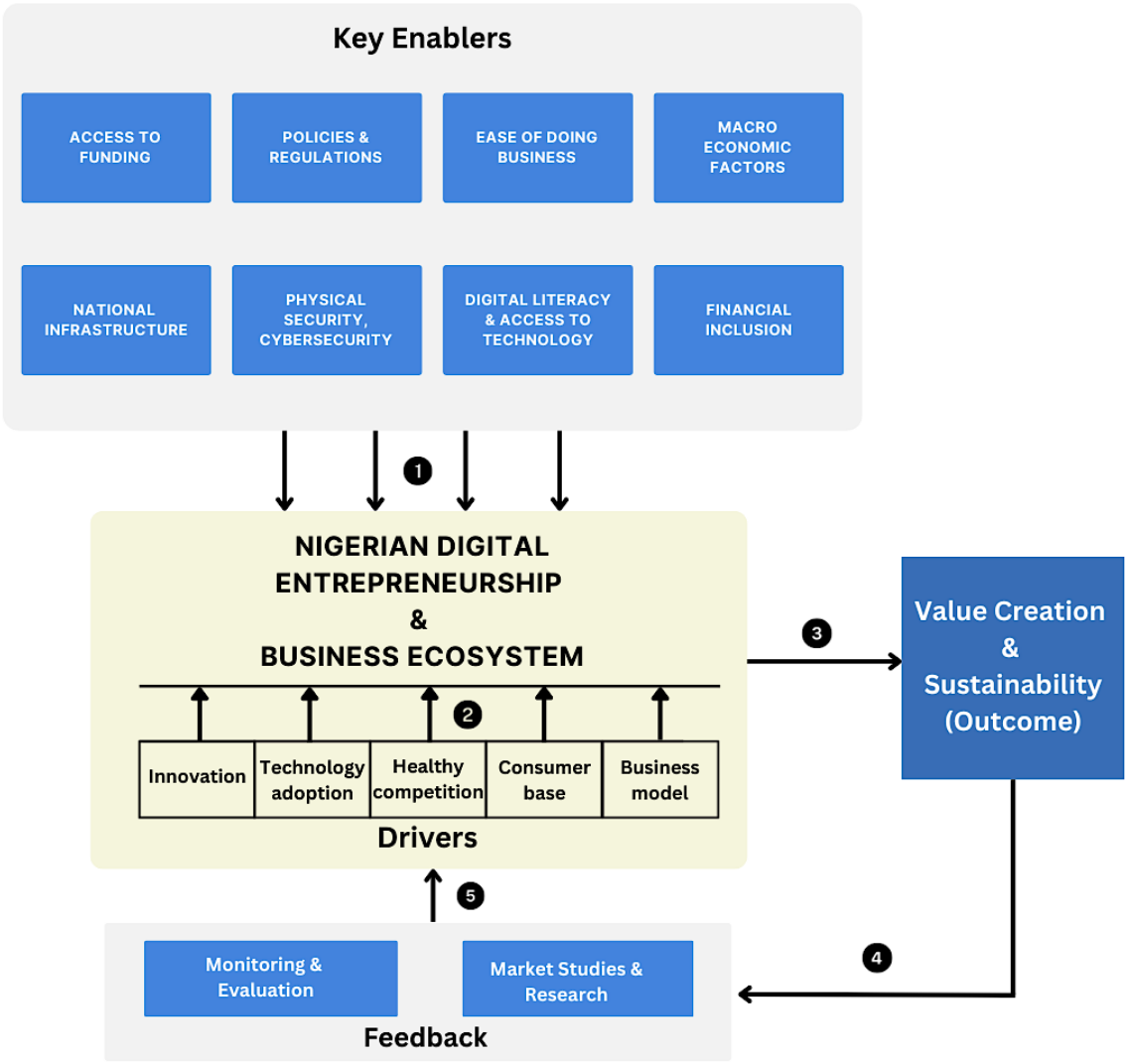

Figure 33: Conceptual Framework for a Supportive Ecosystem for Digital Entrepreneurship and Businesses and StartUps

The conceptual framework for a supportive ecosystem consists of key enablers, business drivers, outcome and a feedback mechanism. It suggests that key enablers and business drivers are necessary inputs required in the Nigerian digital entrepreneurship and business ecosystem for sustained value creation (i.e. outcome) by entrepreneurs and businesses. Periodic assessment of the business environment in the form of monitoring & evaluation, market studies & research, etc. (i.e. feedback mechanism) are also necessary to determine how to adjust the key enablers and business drivers for continuous and improved value creation.

Key enablers refer to factors external to a business that have effects or impacts on business operations. **The key enablers and actors are shown below**:

Table 25: Key Enablers and Actors for a Supportive Digital Entrepreneurship Ecosystem

SN	Key Enabler	Major Actors
1.	Access to funding	Federal Government, State governments, CBN, Ministry of Finances, Bank of Industry, Financial Institutions, etc.
2.	Policies and Regulations	Government MDAs, National Assembly, etc.
3.	Ease of Doing Business	Presidential Enabling Business Environment Council (PEBEC), National Economic Summit Group (NESG), etc.
4.	Macroeconomic Factors	Federal Government, Nigerian Economic Summit Group (NESG), Nigeria Governors Forum, Government MDAs, etc.
5.	National Infrastructure	Federal Government, State and Local Governments, Government MDAs, etc.
6.	Physical and Cybersecurity	Federal Government, State and Local Governments, Government MDAs, Telecoms Service Providers, Law Enforcement Agencies, etc.
7.	Digital literacy and Access to Technology	Government MDAs, Telecoms Service Providers, Tech hubs, ICT Parks, ICT Companies, Academia and Research Institutions, NGOs, etc.
8.	Financial Inclusion	CBN, Ministry of Finance, Financial Institutions, Telecoms Service Providers, etc.

Business drivers are the inputs and activities that drive the operational and financial results of a business. They are mostly internal to the business. **The business drivers include:**

a. Innovation
b. Technology Adoption
c. Healthy Competition
d. Consumer base
e. Business model

4.4 Role of the Telecoms Sector in Supporting Digital Entrepreneurship and Businesses

The roles of the telecommunications industry in supporting digital entrepreneurship and businesses in Nigeria are enumerated below:

a. Facilitation of broadband penetration.
b. Ensure the availability and accessibility of telecommunications services.
c. Institution of strong cybersecurity measures to protect telecoms consumers.
d. Creation of awareness on use and adoption of digital technologies.
e. Proactive regulation of the telecommunications industry.

5. Conclusion and Recommendations

5.1 Observations

The following observations were made during project implementation:

a. There is a very low level of digital literacy in many rural areas across the country.
b. Financial inclusion is a key enabler for digital entrepreneurship and businesses.
c. The proliferation of digital banks in Nigeria has helped many digital businesses execute effectively and transact with customers irrespective of location.
d. Social media platforms like Instagram, Facebook, Twitter, TikTok, and others are practical tools that entrepreneurs and digital firms (particularly in cities) use for customer engagement and advertorials.
e. The problem of insecurity in the North-East, North-West and South-East geopolitical zones is greatly affecting many businesses in these regions.
f. Poor national infrastructure greatly inhibits the logistics value chain for digital businesses.

5.2 Conclusion

The transition to a digital economy is essential to preparing for the fourth industrial revolution. Broadband penetration in Nigeria has been on a steady rise in the last five years and has promoted socioeconomic growth and development in the country. Many indigenous businesses have metamorphosed into digital enterprises through the use of digital technologies and the Internet.

Digital businesses in Nigeria are plagued by different challenges such as macroeconomic factors, national infrastructure issues, insecurity, internal capacity problems, etc., hence the need to adopt a sustainable digital entrepreneurship and business model that can assure the success and survivability of digital businesses in Nigeria.

The developed conceptual framework for sustainable digital business model development is guaranteed to help Nigerian digital entrepreneurs and businesses succeed and evolve into global enterprises.

5.3 Recommendations

The recommendations are grouped by stakeholders/actors for implementation. These are enumerated below.

5.3.1 Recommendations for Government

a. Implementation of a robust macroeconomic framework to checkmate the unfavourable macroeconomic effects such as rising inflation rate, foreign exchange rate, etc.
b. Accelerate the provision of national infrastructure such as electricity, water supply, transportation systems, security, etc.
c. Increase funding for MSMEs.

d. Improve the government's commitment to policy implementation, monitoring and evaluation.
e. Streamline regulations, reduce and harmonize taxes for MSMEs. China and India recently (post-COVID-19) implemented a short-term tax reduction regime to support MSMEs.
f. Creation of a mentorship programme/framework for digital businesses and Startups to harness the wealth of experience of business professionals across different sectors who can act as mentors and business advisors. The programme delivery can be virtual or physical or a combination of both.
g. Strengthen the government-diaspora linkage to facilitate human capital development, funding, knowledge and technology transfer through special diaspora-sponsored programmes. This strategy is actively used by the Indian and Chinese governments.
h. Strengthen the monitoring framework for government-sponsored Startups and businesses to ensure that business grants are properly utilized for the intended purpose.
i. Facilitate the creation of more digital entrepreneurship centres across the country.
j. Promotion of entrepreneurship education with improved curriculum and strategic support across all levels of education. Nigeria needs to produce more thinkers, innovators, entrepreneurs and problem solvers in readiness for the fourth industrial revolution (4IR).
k. Increase public-private partnerships with tech hubs, accelerators, incubators, etc. to advance capacity building initiatives for digital businesses and Startups across the country.
l. Facilitate access to foreign markets for export.
m. Strengthen synergy with organizations like the National Agency for Science and Engineering Infrastructure (NASENI), Projects Development Institute (PRODA), to facilitate local production.

5.3.2 Recommendations for Digital Businesses, Entrepreneurs and Startups.

a. Ensure to document and validate a proper business model before commencing business operations.
b. Embrace the culture of periodic business performance evaluation.
c. Business decisions should be based on empirical data and not perceptions.
d. Institute a culture of accountability and book keeping.
e. Ensure to know the difference between revenue and profit; cashflow should be considered more important than profit within the first six months to one year.
f. Think big, start small and plan for scale-up.

g. Constantly engage with customers to obtain feedback on products and services as well as customer needs.
h. Practice the "Kaizen" principle of continuous improvements.
i. Leverage new and emerging technologies as they can provide the needed competitive advantage.

5.3.3 Recommendations for Financial Institutions

a. Improve access to funding for MSMEs.
b. Creation of uniquely tailored funding packages for MSMEs.
c. Promote financial inclusion through provision of technology-driven and innovative financial services, especially to rural areas.
d. Creation of a credit-score system for MSMEs to rate and track credit worthiness of MSMEs.
e. Facilitate financial literacy by creating awareness and providing financial education for start-ups and businesses.

5.3.4 Recommendations for Telecoms & ICT Industries (Private Organizations, Service Providers, and Regulators)

a. Encourage the funding of digital Startups and innovation-based research programmes as part of corporate social responsibility (CSR).
b. Continuous broadband penetration and provision of telephony services to rural areas.
c. Provision of incentives and special packages for MSMEs such as ICT interventions, partnership offers, etc.
d. Subsidize the cost of ICT and telecoms services in rural areas.
e. Early transition to new and emerging technologies such as AI, Blockchain, IoT, etc.
f. Facilitate digital literacy initiatives such as trainings and capacity development programmes for consumers, businesses owners and start-ups.
g. Promote innovation and technology adoption among digital start-ups through competition programmes like hackathons, code camps, etc.
h. Encourage the adoption of indigenous technologies, products and services in the ICT and telecoms sector.
i. Facilitate the provision of sandboxing for startups and digital businesses.
j. Provision of digital infrastructure support such as digital toolkits, subsidized cloud hosting services, etc. to digital start-ups.
k. Ensure continuous protection of the Nigerian cyberspace.

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Appendix A: Sample Size Computation

SN	National Population	Value
	Population of Nigeria as of 9th June, 2023	**221,112,102**

Let the Yamane's formula be used to compute sample size as follows:

$$n = \frac{N}{1 + N(e)^2}$$

Where:

n = Sample Size
N = Total Population
e = Precision Level where confidence level is 95%

Using a 1% margin of error and applying the formula:

$$n = \frac{221,112,102}{1 + 221,112,102(0.01)^2} = 10,000$$

Thus, based on the calculation, a total of **10,000** samples will be used.

Appendix B.1: Survey Questionnaire (Category A)

Background and Introduction

The Nigerian Communications Commission (NCC) has engaged Messrs Perazim Development and Planning Limited to conduct a Survey on digital entrepreneurship business model in selected metropolitan cities across Nigeria. The cities include: (i.e. Abuja, Enugu, Kaduna, Kano, Port Harcourt, and Yola).

Please take five (5) minutes of your time to complete this form. Thank you!

Aim and Objectives of the Survey

To obtain feedback from key respondents in the digital entrepreneurship ecosystem that will provide insights on the digital entrepreneurship landscape in Nigeria and aid in the development of a sustainable digital entrepreneurship business model.

Target Respondents: Digital Entrepreneurs and Startups

Instruction: Please, this data collection form should be filled digital entrepreneurs and members of startups who have good knowledge of their digital business.

Section A: Survey Location Details

1.	Enumerator ID:	
2.	Supervisor:	
3.	State of Location:	
4.	LGA of Location:	
5.	Name of City, Town or Village:	
6.	Location Type:	(1) Rural (2) Urban
7.	Enumeration Area ID:	
8.	GPS Location Mapping:	Longitude: _____ Latitude: _____
9.	Available Telecommunication Services:	(1) None (2) Voice Only (3) Data Only (4) Voice & Data
10.	Available Mobile Network Operators (MNO):	(1) MTN (2) Airtel (3) Globacom (4) EMTS (9Mobile)
11.	Name of Respondent:	
12.	Telephone Number of Respondent:	

Section B: Demographic and Socioeconomic Attributes

13. What is your Gender?
(1) Male (2) Female

14. What is your age bracket in years as at your last birthday?
(1) Below 18 (2) 18 -20 (3)21 – 25 (4)26 - 30 (5)31 - 35 (6)36 - 40
(7) 41 - 45 (8) 46 -50 (9)51 – 55 (10)56 - 60 (11)61 - 65 (12) Above 65

15. What is your Marital Status?
(1) Single (Never Married) (2) Married (Monogamous) (3) Married (Polygamous)
(4) Informal/Loose Union (5) Divorced (6) Separated

16. Do you have any disabilities?
(1) Yes (2) No

17. If Yes in SN 5 above, what is your type of disability?
(1) Hearing (2) Visual (3) Speech (4) Cognitive (5) Physical (6) Others

18. What is your highest level of education?
(1) None (2) Nursery School (3) Primary School (4) Secondary School
(5) Tertiary (6) Vocational

19. What is your highest qualification?
(1) None (2) FSLC (3) JSCE (4) SSCE (5) OND (6) HND
(7) Bachelors (8) PgD (9) Masters (10) PhD

20. How old is your business?
(1) Less than 1 year (2) 1 – 2 years (3) 3 – 4 years (4) 5 – 6 years
(5) 7 – 8 years (6) 9 – 10 years (7) Over 10 years

21. How many persons own the business?
(1) 1 (2) 2 (3) 3 (4) 4 (5) 5 and Above

22. What is your area of businesses?
(1) Telecoms (2) Finance (3) Consumer Goods (4) Health
(5) Manufacturing (6) Education (7) Agriculture (8) Mobility
(9) Consumer Services (10) Others Please specify

23. How many person(s) own the business?
(1) 1 (2) 2 (3) 3 (4) 4 (5) 5 and Above

24. What is your average monthly revenue?
(1) below N200,000 (2) N200,000 – N399,999 (3)N400,000 – N599,999
(4) N600,000 – N799,999 (5) N800,000 – N999,999 (6) N1,000,000 and above
(7) Zero

Section C: Basic Registrations

	Question	YES	NO
25.	Is your business registered with CAC (either business name or incorporation)?		
26.	Is your business registered with SMEDAN?		
27.	Have you registered any trademarks or patents for your businesses?		
28.	Have you registered a domain name for your business?		
29.	Does your business have a running website?		
30.	Do you have a valid corporate bank account?		

Section D: Digital Business and Startup Landscape

31. How many distinct product types or service lines does your business offer?
(1) 1 (2) 2 (3) 3 (4) 4 (5) 5 and Above

32. How much funding/intervention have you received since inception?
(1) None (2) Less than N10m (3) N10m – N19.99m
(4) N20m – N29.99m (5) N30m – N39.99m (6) N40m – N49.99m
(7) N50m and above

33. Which one of these groups supports the growth and development of digital entrepreneurship the most in Nigeria?
(1) Friends & Family (2) Individuals (3) Private Businesses (4) NGOs
(5) Tech Hubs (6) Government (7) International Organizations
(8) Venture Capitalists (9) Ohers (Please specify)

34. Do you have a formal adviser or an advisory board for your business?
(1) Yes (2) No

35. How would you rate the survivability of digital businesses and startups in Nigeria?
(1) Very Low (2) Low (3) No Opinion (4) High (5) Very High

36. How impactful has social media been to the growth and development of your business?
(1) Very Low (2) Low (3) No Opinion (4) High (5) Very High

Feedback on the Nigerian Business Environment

SN	How would you rate the following in Nigeria	5 Very Good	4 Good	3 Average	2 Poor	1 Very Poor
37.	Access to Investors and Funding					
38.	Access to Customers					
39.	Availability and Access to infrastructure					
40.	Policies for growth & development of digital entrepreneurship					
41.	Ease of running a business (operational costs)					
42.	Ease of Company Registration					
43.	Tax regulation for startups and entrepreneurs					
44.	Level of Competition					
45.	Social Media domain					
46.	Cybersecurity					

Section E: Challenges faced by Digital Entrepreneurs and Startups in Nigeria

Kindly indicate how the following challenges have impacted your business.

SN	Challenge	Very Severe	Severe	Moderate	Mild	Very Mild
47.	Access to Funding					
48.	Electricity Supply					
49.	Internet Access and Speed					
50.	Restrictions on Social Media					
51.	Poor National Infrastructure (roads, railway, water, etc)					
52.	High Import duties and Tariffs					
53.	Insecurity					
54.	Inflation Effects					
55.	Access to Foreign Exchange					
56.	Buying Power and Patronage					
57.	Mentorship & Advisory Issues					
58.	Operational and Running Costs					
59.	Competition					
60.	Digital Literacy Issues					
61.	Business Management Issues					
62.	Low trust score for digital businesses by consumers					
63.	Multiple Taxation					
64.	Cybersecurity Issues					

Section E: Reasons for Failure of Digital Businesses in Nigeria

Kindly indicate how the prevalence of the following factors have influenced and led to the failure of startups and digital businesses in Nigeria.

SN	Factor	Very High	High	Average	Low	Very Low
65.	Lack of Consumer patronage; Low Profit margin					
66.	Wrong choice of product/service					
67.	High operational and running cost					
68.	Lack of good national infrastructure					
69.	Poor Business Management and Leadership					
70.	Incompatible Founders					
71.	Lack of Funding					
72.	Funds Mismanagement					
73.	Stiff Competition					
74.	Lack of Innovation					
75.	Problem of Insecurity					
76.	Incompatible Founders					
77.	Unfavourable government Policies					
78.	Cybercrime, Fraud, etc					
79.	Economic Instability					

Section F: Suggestions and Recommendations

80. What are your suggestions and recommendations for creating a sustainable business model for digital entrepreneurs in Nigeria?

Appendix B.1: Survey Questionnaire (Category B)

Background and Introduction

The Nigerian Communications Commission (NCC) has engaged Messrs Perazim Development and Planning Limited to conduct a Survey on digital entrepreneurship business model in selected metropolitan cities across Nigeria. The cities include: (i.e. Abuja, Enugu, Kaduna, Kano, Port Harcourt, and Yola).

Please take five (5) minutes of your time to complete this form. Thank you!

Aim and Objectives of the Survey

To obtain feedback from key respondents in the digital entrepreneurship ecosystem that will provide insights on the digital entrepreneurship landscape in Nigeria and aid in the development of a sustainable digital entrepreneurship business model.

Target Respondents: Government MDAs, private organizations, tech hubs, venture capitalists, NGOs, Academic & Research Institutions, Media Agencies, etc.

Instruction: Please, this data collection form should be filled digital entrepreneurs and members of startups who have good knowledge of their digital business.

Section A: Survey Location Details

1.	Enumerator ID:	
2.	Supervisor:	
3.	State of Location:	
4.	LGA of Location:	
5.	Name of City, Town or Village:	
6.	Location Type:	(1) Rural (2) Urban
7.	Enumeration Area ID:	
8.	GPS Location Mapping:	Longitude: _____ Latitude: _____
9.	Available Telecommunication Services:	(1) None (2) Voice Only (3) Data Only (4) Voice & Data
10.	Available Mobile Network Operators (MNO):	(1) MTN (2) Airtel (3) Globacom (4) EMTS (9Mobile)
11.	Name of Respondent:	(1) Government MDA (2) Industry Regulatory (3) Private organization (4) Tech hub (5) Academia (6) Venture capitalists (7) Investor (8) Research Institution (7) Media Agency (8) Industry Association (9) Others
12.	Type of Respondent	
13.	Telephone Number of Respondent:	

Section A: Rating of the Nigerian Business Environment

Kindly rate the following as regards the Nigerian business environment for digital entrepreneurs and startups.

SN	How would you rate the following in Nigeria	5 Very Good	4 Good	3 Average	2 Poor	1 Very Poor
14.	Access to Investors and Funding					
15.	Access to Customers					
16.	Availability and Access to infrastructure					
17.	Policies for growth & development of digital entrepreneurship					
18.	Ease of running a business (operational costs)					
19.	Ease of Company Registration					
20.	Tax regulation for startups and entrepreneurs					
21.	Level of Competition					
22.	Social Media domain					
23.	Cybersecurity					

24. What are the top causes of failure and collapse of digital businesses and startups in Nigeria?

_____

_____

_____

_____

25. What measures will ensure the growth and sustainability of digital entrepreneurship and startups in Nigeria?

_____

_____

_____

_____

26. What components or indices should be considered in developing a robust and sustainable business model for digital entrepreneurship in Nigeria?

_____

_____

_____

_____

_____

Appendix C: Demographic & Socioeconomic Attributes of Respondents

1. Location Type Distribution

Table 26: Location Type Distribution

Location Type	Frequency (%)
Rural	9.61
Urban	90.39
Total	**100.00**

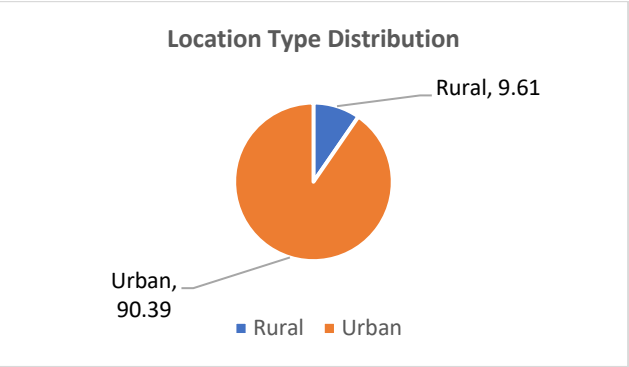

Figure 34:Location Type Distribution

2. Gender Distribution

Table 27: Gender Distribution

Gender	Frequency (%)
Male	67.34
Female	32.66
Total	**100.00**

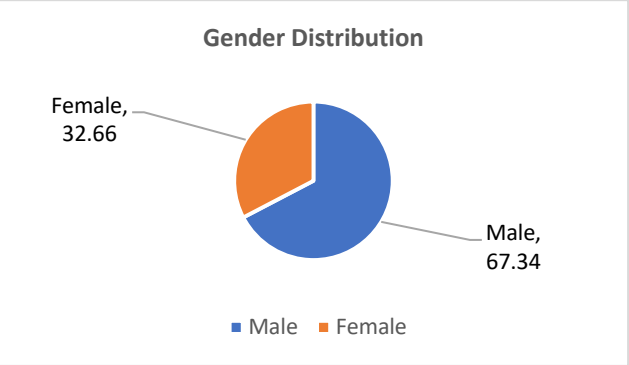

Figure 35:Location Type Distribution

3. Age Distribution

Table 28: Age Distribution

Age Bracket (Years)	Frequency (%)
Below 20	1.42
21 - 25	4.37
26 - 30	10.48
31 - 35	15.45
36 - 40	17.08
41 - 45	14.16
46 - 50	13.20
51 - 55	10.56
56 - 60	7.10
61 - 65	4.04
Above 65	2.13
Total	**100.00**

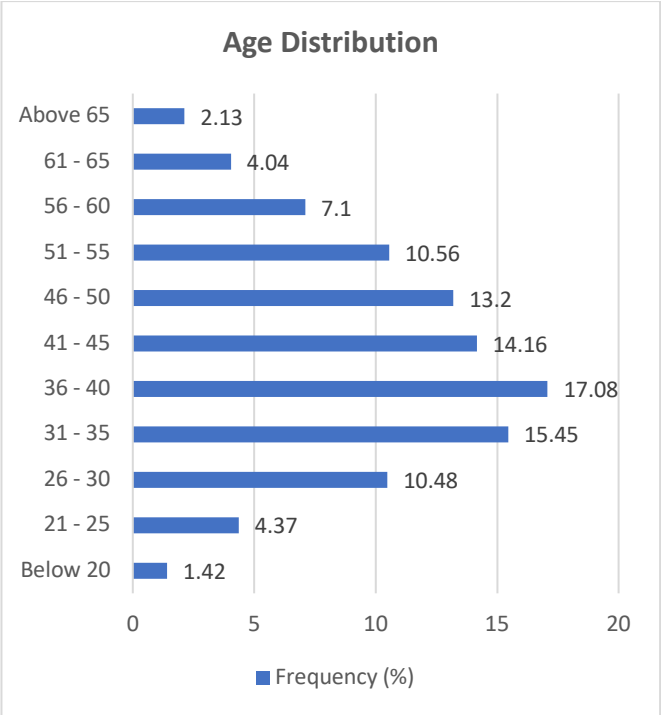

Figure 36:Age Distribution

4. Marital Status Distribution

Table 29: Marital Status Distribution

Marital Status	Frequency (%)
SINGLE (NEVER MARRIED)	17.44
MARRIED (MONOGAMOUS)	58.48
MARRIED (POLYGAMOUS)	12.25
INFORMAL/LOOSE UNION	4.63
SEPARATED	3.74
DIVORCED	3.46
Total	**100.00**

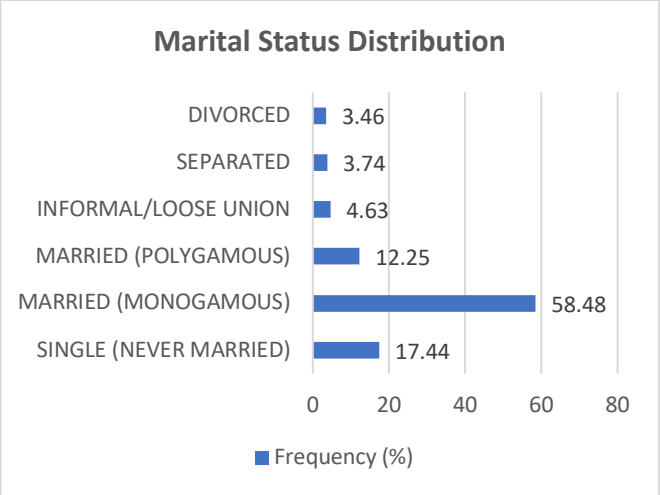

Figure 37:Age Distribution

5. Highest Level of Formal Education Distribution

Table 30: Highest Level of Formal Education Distribution

Level of Education	Frequency (%)
None	1.66
Nursery Education	0.17
Primary Education	2.07
Secondary Education	16.93
Vocational Education	10.42
Tertiary Education	68.04
Total	**100.00**

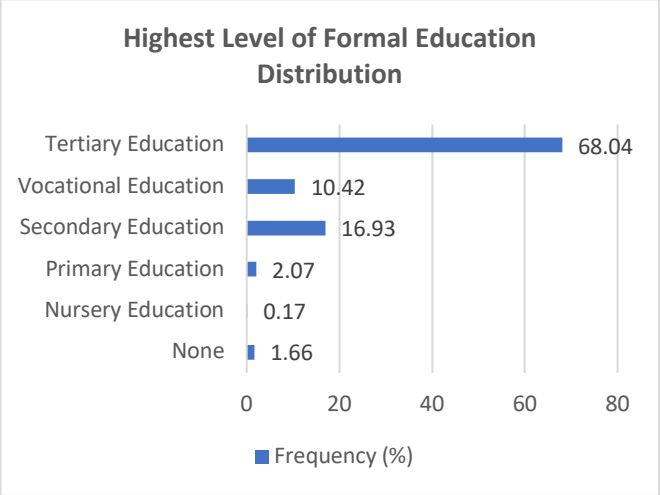

Figure 38:Highest Level of Formal Education Distribution

6. Highest Educational Qualification Obtained Distribution

Table 31: Highest Qualification Obtained Distribution

Qualification	Frequency (%)
NONE	4.45
FSLC	5.85
JSCE	3.01
SSCE	14.15
OND	8.75
HND	21.25
BACHELORS	27.97
MASTERS	11.39
PhD	3.18
Total	**100.00**

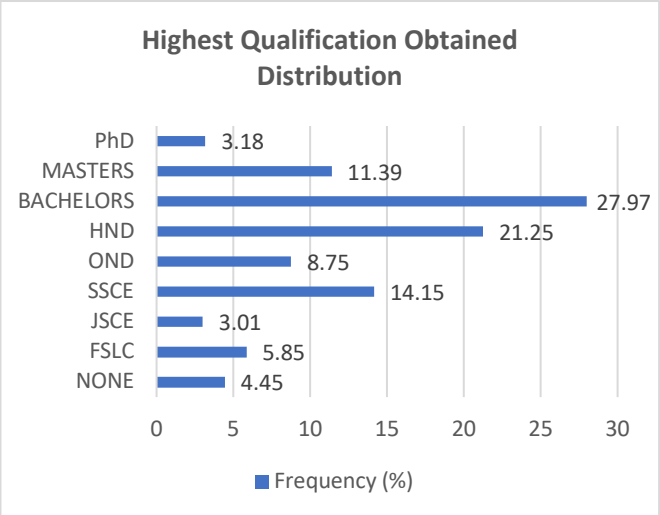

Figure 39:Highest Level of Formal Education Distribution

7. Respondents with Physical Disabilities

Table 32: Respondents with Physical Disability

Physically Disabled?	Frequency (%)
NO	97.16
YES	2.84
Total	**100.00**

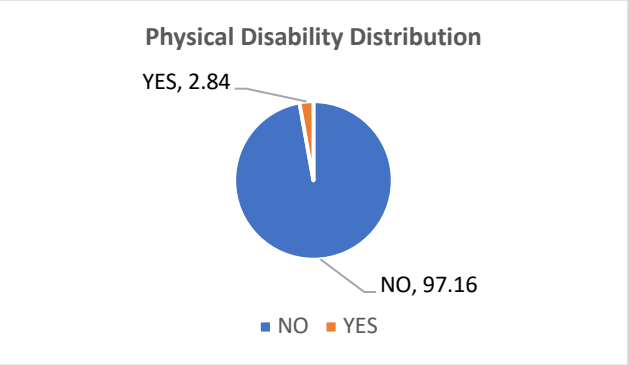

Figure 40:Physical Disability Distribution

8. Available Telecommunications Services Distribution

Table 33: Available Telecommunications Services

Type of Telecommunication Service	Frequency (%)
NONE	0.09
VOICE ONLY	2.42
DATA ONLY	0.86
VOICE & DATA	96.63
Total	**100.00**

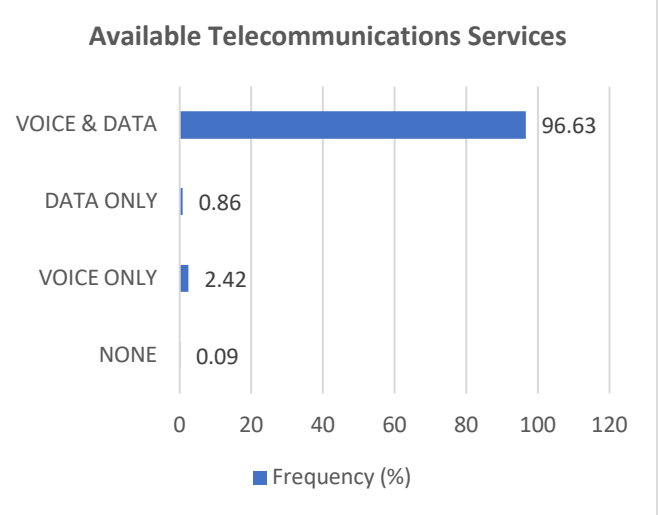

Figure 41:Available Telecommunications Services Distribution

9. Available Mobile Network Operators (MNOs) Distribution

Table 34: Available Mobile Network Operators (MNOs) Distribution

Mobile Network Operator	Frequency (%)
NONE	0.17
AIRTEL	94.66
EMTS (9 MOBILE)	88.06
GLOBACOM	93.73
MTN	98.27

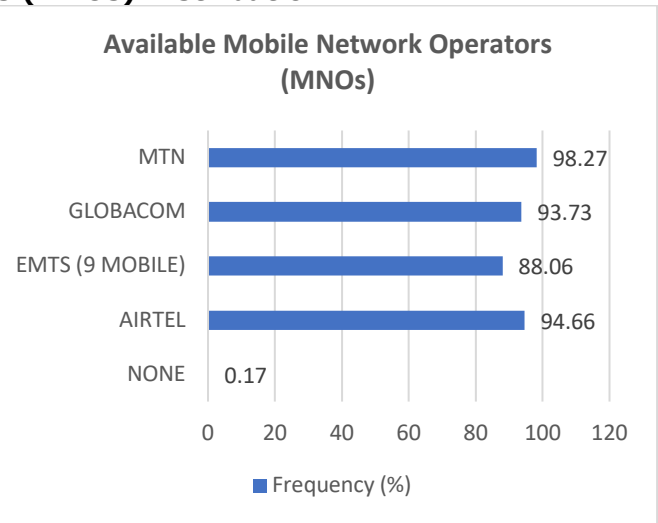

Figure 42:Available Mobile Network Operators (MNOs) Distribution

Appendix D: List of Sampled Government MDAs

SN	Government MDA	Address
1.	Federal Ministry of Communications, Innovation and Digital Economy	3F7X+C8H, Constitution Ave, Central Business District 900103, Abuja, Federal Capital Territory
2.	Federal Ministry of Finance	816 Ahmadu Bello Way, Central Business Dis 900103, Abuja, Federal Capital Territory
3.	Central Bank of Nigeria (CBN)	intelligent Building, Sani Abacha Way, Central Business Dis 900103, Abuja, Federal Capital Territory
4.	Federal Ministry of Budget and National Planning	National Planning Commission, Room 214, 2nd Floor, Plot 421 Constitution Ave, Central Business Dis, Abuja
5.	Nigerian Association of Chambers of Commerce, Industry, Mines and Agriculture (NACCIMA)	Plot 701B, Central Business District, Opp. Central Mosque, Abuja.
6.	Federal Ministry of Industry, Trade and Investment	23, Old Federal Secretariat, Durumi 900103, Abuja, Federal Capital Territory Area 1, Off Commerce Plaza, Old Federal Secretariat Complex, Garki 900211, Abuja, Federal Capital Territory
7.	National Information Technology Development Agency (NITDA)	28, Port Harcourt Crescent, Off Gimbiya Street, P.M.B 564, Area 11, Garki, Abuja, Nigeria
8.	Small and Medium Enterprise Development Agency of Nigeria (SMEDAN)	35, Port Harcourt Crescent, Off Gimbiya St, Abuja
9.	National Board for Technology Incubation (NBTI)	No. 10, Zambezi Crescent Maitama Garki Abuja
10.	Nigerian Internet Registration Association (NiRA)	28, Port Harcourt Crescent, Off Gimbia Street, Area 11 Garki, Abuja, Nigeria.
11.	Federal Ministry of Youth and Sports Development	New Federal Secretariat Complex, Phase II, Block D (2nd Floor), Shehu Shagari Way, Abuja
12.	Nigerian Economic Summit Group (NESG)	4th Floor, Unity Bank Tower Plot 785, Herbert Macaulay Way, Abuja, Nigeria.
13.	Nigerian Investment Promotion Commission (NIPC)	Plot 1181 Aguiyi Ironsi St, Wuse 904101, Abuja, Federal Capital Territory
14.	National Population Commission (NPC)	No. 1, Masaka Close, Off Olusegun Obasanjo Way, Wuse Zone 7, Abuja, Nigeria
15.	Office for Nigeria Digital Innovation (ONDI)	4th Floor, National Center for Artificial Intelligence and Robotics Building, Wuye 900108, Ankuru, Federal Capital Territory
16.	Nigerian Computer Society (NCS)	Plot 1321, Aderemi Adesoji, Gudu, 900110, Abuja, Federal Capital Territory

Contact Us

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