



# Digital Disparities and COVID-19 Pandemic among Agrifood NMSMEs: A Zero-Sum Game?

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## Abstract

This research investigates the digitalisation experiences among agrifood Nano, Micro, Small, and Medium Enterprises (NMSMEs) during and after the COVID-19 pandemic. We analysed primary data collected from different agrifood NMSMEs at diverse levels of socioeconomic status. From a static standpoint, our research shows the free entry and exit of agrifood NMSMEs in the digital space. However, and dynamically, these NMSMEs are endemically skewed along the following borders - digital tools adoption, the timing of digital engagement, professional association memberships, geographies, gender, education, and income borders, thereby deepening digital disparities among the NMSMEs. Based on the analysed data, we recommended a 'positive-sum' 5XAACS framework as a deliberate digital uptake programming intervention for strengthening agrifood NMSMEs while reversing the adverse effect of digital inequalities and the COVID-19 pandemic.





## 1.0 Introduction

The SARS-CoV-2 (COVID-19) pandemic posed an epidemic with monumental significance to Nigerian small businesses and the entire economy. The triple financial, economic, and health-related COVID-19 brought extraordinary hardships to most Nigerian businesses. The lockdown policy destroyed tourism, Trade in Services (TiS), supply chain disruption, and trade collapse. The lockdown policies implemented to contain the spread of the COVID-19 virus and its variants impacted differently and widely agrifood NMSMEs. The spread of COVID-19 seemingly accelerated the adoption of existing and new digital infrastructures as households, businesses, and governments complied with the lockdown policy. A few million employees worked remotely from home, fostering behavioural change towards digitalisation. The social distancing and lockdown economic policies due to the COVID-19 pandemic further reveal the sine-qua-non contribution of digital tools to businesses' accountability and decision-making processes with a focus on replication, tracking, transportation, and verification (Goldfarb, Avi, and Tucker, 2019).

Furthermore, digital readiness inequalities and agrifood trade potentials disparities, especially among the minority and rural-based nano, micro, small and medium enterprises (NMSMEs), undermine Nigeria's capacity to take full advantage of the digitalisation, intelligent technologies, innovation, and other scientific breakthroughs. In response to overcoming these challenges while strategising to deepen agrifood trade, rapidly bring NMSMEs back better, and help NMSMEs adapt to the 'new reality' that urgently requires a post-pandemic,

systemically digitalised agrifood trade programme, the Federal Government revised its National Policy Framework on Micro, Small, and Medium Enterprises (MSMEs) in response to these challenges. At the same time, the Bank of Industry (BoI) secured a US\$1 billion syndicated loan to support Micro, Small, and Medium Enterprises (MSMEs) in resolving inherent challenges confronting vulnerable minority agrifood operators.

The presentation structure of the study is as follows: Section 1.0 introduces this research by articulating the (i) introduction and problem statement, (ii) rationale and policy relevance, (iii) research questions, (iv) research design, and (v) study plan. The second section of this research discusses the study background focusing on digital tools being deployed by agribusinesses. Despite the available number of studies on the implications of COVID-19 for agrifood trade and the role of digital technologies, huge limitations exist. Thus, the third section of this research will discuss existing literature and theoretical underpinning on how digitalisation - agrifood trade nexus in both the pre-and post-COVID-19 periods.

The fourth section of this research presents the data collection methodology. Section five will focus on articulating the questionnaire as a tool for data collection and the basis for the empirical analysis and findings. The collected data will be analysed, and its results will be provided in section five. The sixth section concludes the research and proposes some policy recommendations along with areas of future research.



## 1.1 Rationale and Policy Relevance

This study appears to be the first to begin examining the contribution of digitalisation to Nigeria's agrifood exports during the COVID era. In other words, the specific effect of digitalisation on NMSMEs' agrifood export during and since COVID-19 has received little research and policy attention. In fact, despite NMSMEs being a strategic policy priority for realising inclusive development in Nigeria, limited research has shed light on the impact of digitalisation in shaping the future of NMSMEs in Nigeria. This study's policy recommendations and findings will deepen agricultural trade and public health decision-makers in creatively re-strategising

novel approaches to spatial market access opportunities for domestic and foreign markets.

The policy relevance of how specific digital tools deepen agrifood export aims to focus on: Would NMSMEs be ready to undertake training to improve the utilisation of digital tools to enhance their export intensity? This study deepens our understanding of how digitalisation can strengthen the role of NMSMEs in the regional and global value chain as the African Continental Free Trade Agreement (AfCFTA) implementation evolves in Nigeria.

## 1.2 Research Objectives and Questions

Nigerian NMSMEs' sub-optimal level of agrifood exports and performance could be addressed through well-purposive agribusiness digitalisation programming interventions. This study explores the digitalisation experiences among agrifood MSMEs during and after the COVID-19 pandemic. An increasing volume of studies and data shows that the role of digital technology is crucial in socioeconomic transformation and bringing economies back better in the post-pandemic era. In other words, mobile technologies are rapidly being deployed to enhance agrifood trade potentials. Leveraging mobile and digital health technologies is one of the effectively critical strategies adopted in Nigeria's strategy to curb the spread of COVID-19 and its adverse effect on agrifood and the entire economy. In particular, Artificial Intelligence (AI), big data, 5G, robotics, and other ICTs provide solutions for patient treatment, frontline protection, risk reduction, communications, and improved quality of living under lockdown. In addition, mobile technologies, GPS, Bluetooth, cellphone masts, and AI-powered big data analytics enhance traceability, business interoperability, and productivity. However, preserving personal privacy using mobile technology is critical to maintaining public trust<sup>1</sup> and protecting vulnerable MSMEs.

In particular, GPS, Bluetooth, cellphone masts, and AI-powered big data analytics are deployed for data collection, which helps authorities improve efforts and accelerate business productivity. Thus, Nigerian farmers, agriprenuers, and other agrifood supply chain actors are strategically placed to enhance preparedness if AI is effectively deployed to up their games. Based on this background, the questions that this research endeavours to answer are as follows:

- » What digital tools are available and accessible to micro, small-scale agribusiness owners in Nigeria?
- » Which of these tools is being adopted by (or are the most prominent among) Agrifood export farmers, and for what purpose?
- » Which digital tools are more prominent among these Agrifood export farmers?
- » Based on these Agrifood exports farmers' experiences, identify and document the gains and pains of the adopted digital tools and the possible ways to address the challenges.
- » Have COVID-19-related policies impacted NMSMEs' performance differently based on the digital tools availability per state or on the digital tools choices by NMSMEs?

<sup>1</sup>One of the challenges is preserving personal privacy and maintaining public trust while using digital technologies

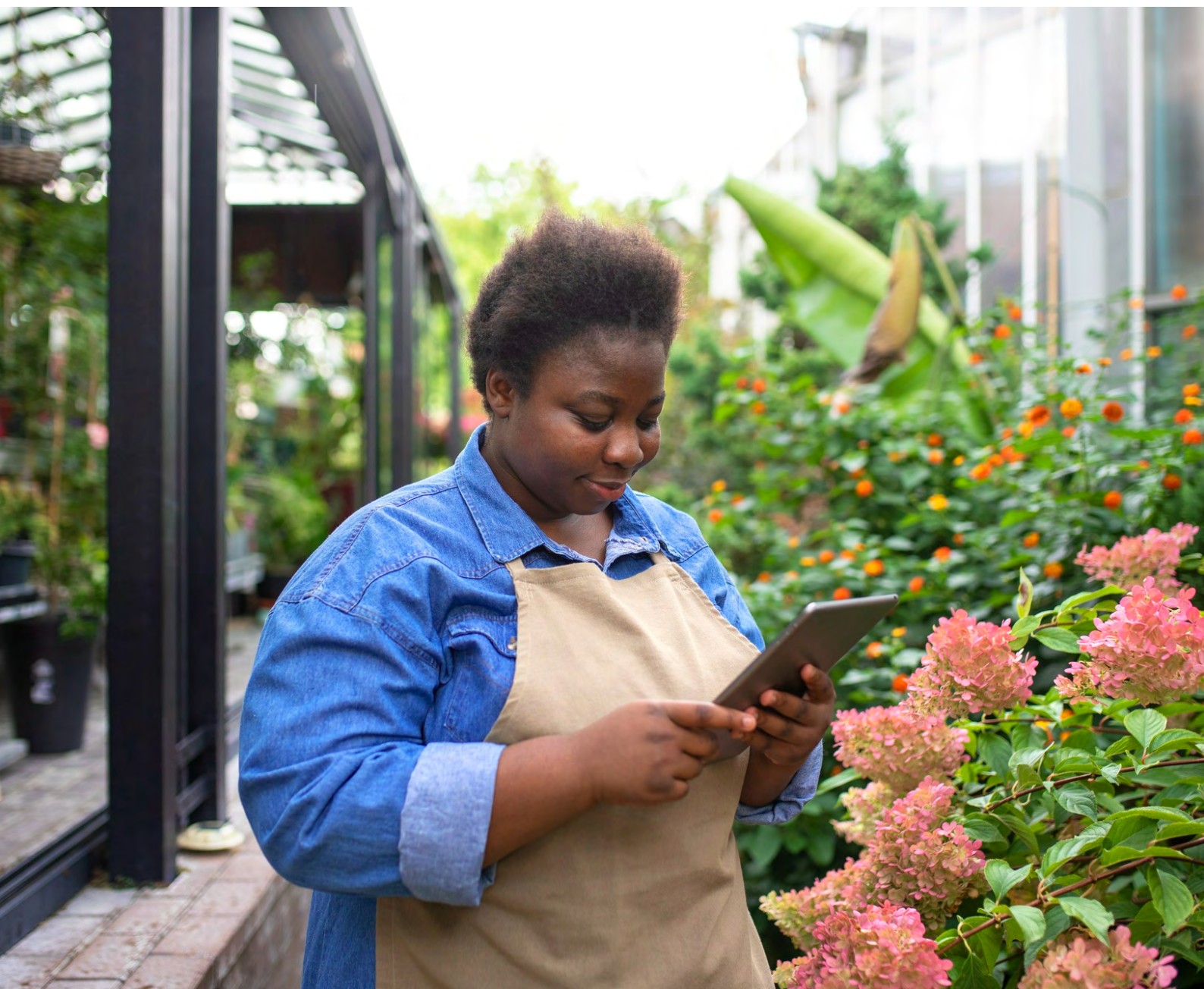
### 1.3 Research Design

Based on the research objectives, this research deploys an appropriate design in which the degree of accessibility and intensity of usage of digital tools in the agrifood sector. Consequently, a questionnaire was designed and administered among its targeted population – (NMSMEs) across the 36 States, including the Federal Capital Territory. The aims of the questionnaire are:

- » To present the heterogeneous characteristics of Nigerian agrifood

NMSMEs in their experiences of adopting digital tools towards deepening their respective agribusinesses.

- » To enhance our understanding of the underlining factors prevailing the adoptions and how government can intervene to redress such constraints are yet to be well researched and documented.



## 2.0 Study Background: Relevant Digitalisation Policy and Digital Tools Being Implemented in Nigeria with Greater Emphasis on Agriculture

The COVID-19 pandemic exposed the world's agricultural vulnerabilities and disturbed food systems, farmer livelihoods, and resilience, particularly in the global south. The decline in wages and food supply disruptions caused by restrictions in travel within and across borders, closure of market facilities, limits on group gatherings, and curfews have led to severe poverty, food insecurity, and inequality. As a result of these safety measures to curb the spread of COVID-19, agricultural markets across the globe experienced unprecedented disruptions, including pre-production, production, processing, and marketing, thereby reducing their ability to access inputs, financial services, aggregate produce and sell their produce (Payne & Wills, 2021).

For example, restrictions reduced the availability of input supplies, which led to fluctuating prices, limited access to hired labour, and reduced opportunities for marketing. Farmers and actors within the agricultural value chain have been pushed to make difficult decisions and seek better ways to enhance their livelihood activities in response to these abrupt disruptions. One such option is the use of digital tools for agribusiness. The need for digital tools heightened with measures to contain the spread of COVID-19. Though COVID-19 provided the opportunity to scale digitalisation and financial inclusion, it also threatened national financial inclusion efforts.

Furthermore, the emergence of new businesses has forced traditional players to reinvent themselves in order not to disappear. The needs of both farmers and buyers are evolving speedily, which means that agribusinesses

need to transform their businesses to meet the changing needs of their customers to stay afloat. This means that alternative digital tools are replacing conventional agribusiness activities. This is based on the recognition that the digital economy has been estimated to be worth \$30 trillion (about \$92,000 per person in the US) with the possibility of generating 123 million jobs by 2030 (Ibanga, 2021) and equivalent to 15.5 percent of global GDP, with two and half times faster than global GDP in the last 15 years (World Bank, 2022).

Standard digital tools for agribusinesses range from those designed to provide agronomic advice to farmers (such as the Akilimo) developed by the African Cassava Agronomic Initiative (ACAI) of the International Institute of Tropical Agriculture); to those developed to facilitate commercial activities.

- i. According to Raithatha (2020), three broad categories of digital solutions in developing countries (Nigeria inclusive) are based on utility. These are:
- ii. Access to markets – These include digital solutions for procurement and agricultural e-commerce.
- iii. Access to assets – These include using digital solutions to remotely control intelligent farming equipment like drones, tractors, and tracking devices.
- iv. Access to services – These include digital solutions to access information on market prices, agronomic advice, certification standards, and weather and climate services.

Table 1.0: Digital tools for agribusinesses

S/N	Digital tools	Description
1	Rice Advice	It is a crop management support tool. It is a free app that can be downloaded and used on an Android phone. It provides farm-specific advice on rice management. AfricaRice developed this app.
2	Akilimo	This was developed by the African Cassava Agronomy Initiative (ACAI) of the International Institute of Tropical Agriculture (IITA). It is also an advisory tool that provides site-specific recommendations to the farmer in order for them to intensify their cassava-based cropping systems.
3	IITA herbicide calculator	This was developed by the Cassava Weed Management Project of the International Institute of Tropical Agriculture (IITA). It was developed to prevent herbicide abuse, i.e., over-dosing and/or under-dosing herbicides. It is a mobile application.
4	Cassava seed tracker	This web app was developed by the International Institute of Tropical Agriculture (IITA). It provides information on access to quality cassava-stem cutting of improved varieties.
5	Cassava e-market	This was developed by the International Institute of Tropical Agriculture (IITA). It is an online market for cassava and cassava-related commodities.
6	GoSeed tracker	It was developed by the Business Incubation Platform of the International Institute of Tropical Agriculture (IITA). It tracks cassava seed production in real-time. It is a platform that facilitates exchange between cassava seed producers and service producers.
7	Cassava matters	This is a website and an online knowledge bank for information related to cassava issues. This was also developed by the International Institute of Tropical Agriculture (IITA).
8	Nuru	This was developed by the International Institute of Tropical Agriculture (IITA) and Pennsylvania State University, USA. It is used to diagnose two crucial viral diseases of cassava (cassava mosaic disease and brown streak disease).
9	Zenvus	It measures and analyses specific soil parameters such as temperature, nutrients, and vegetative health.
10	Agrikore	This is a platform that all actors in the agricultural value chain can do business in a trustworthy environment.
11	Hello Tractor	It allows for efficiency in tractor contracting business.
12	Group chat	Such as WhatsApp, telegram, etc.
13	Agricultural investment platforms	e.g., Crowdyvest, Farmcenta, Agrorite, etc., for sourcing agricultural produce.

Source: NITDA (2020) and African Harvesters (2020)

Table 1.0 further provides a succinct description of some of the digital tools in Nigeria. Some digital tools, such as Cassava Matters on YouTube and Nuru, are available in several languages to adapt to the local context (African Harvesters, 2020). Some of these digital tools are free and can be used offline, such as the RiceAdvice and Nuru. Despite this opportunity presented by digital tools, challenges are still faced, especially in access

to technology by female smallholders, thereby widening the gender gap (Gecheo, Undated). Additionally, there is a lack of understanding about the actual use of these digital tools (Baumuller, 2016; Steinke et al., 2020), inappropriate policies that facilitate the use of these tools, and low capacity of the farmers to use the technologies (Aker, Ghosh and Burrell, 2016; Ayim et al., 2020 and Munthali et al., 2018).



### 3.0 Relevant Literature and Theoretical Underpinnings

Theoretically and practically, the economics of digitalisation focus on telecommunications - internet and software industries, networking and pricing, regulation and competition policy of ICT, Intellectual Property Rights, innovation and standards, networks and pricing, ICT and marketing, net neutrality, advertising, privacy, e-commerce, and two-sided platforms. Extant literature on the market-changing potential of digitalisation needs to include a few fundamental contributions.

First, digitalisation poses far-reaching positive and adverse implications for NMSMEs and fragile economies, especially during and in the post-COVID-19 era (Trittin-Ulbrich et al., 2021; P. C. Verhoef et al., 2021). While the literature to date has mainly considered the positive opportunities associated with digital

technologies at the commodities-demand-by-consumers interface, its dark side impact on agrifood NMSMEs has yet to be criteria examined in detail. Ideological perspectives on digitalisation and data governance are becoming increasingly geopolitical. For instance, the American approach largely maximises data usage, while the European policy protects data usage in their respective national approaches to controlling data. Our work relates to the recent literature investigating digitalisation's impact on small agribusinesses during and after the COVID-19 pandemic. Survey data were collected and analysed based on the literature review of previous studies related to digitalisation and small agrifood businesses during the COVID-19 pandemic.

## 4.0 Data Sources and Collection Methodology

This exploratory study presents empirical evidence from its 'Digitalisation and Agrifood trade' research survey administered by the Nigerian Economic Summit Group (NESG). The survey aims to generate vital information which will solely be used for the digitalisation experiences of nano, micro, and small agrifood businesses during and after the COVID-19 pandemic. The questionnaire provided an in-depth insight into the role of digitalisation in fostering agrifood export during and after the COVID-19 pandemic era. A copy of the questionnaire is accessible online.<sup>2</sup>

The exploitative nature of our research dictates the adoption and administration of

questionnaires. It is pertinent to note that a pretest survey was conducted to reduce questionnaire errors. Finally, during the research's first draft reporting stage, the work-in-progress was presented at a NESG Policy Seminar to receive inputs from policymakers and businesses. A summary of the survey is provided in Table 2.0. Table 2.0 shows that the survey instrument was administered online between 4 August and 30 August. The sampling method was the convenience and snowballing type. The nature of the questions was multiple choice, box-checking, and open-ended. Twenty-one agrifood businesses completed and submitted the questionnaire.



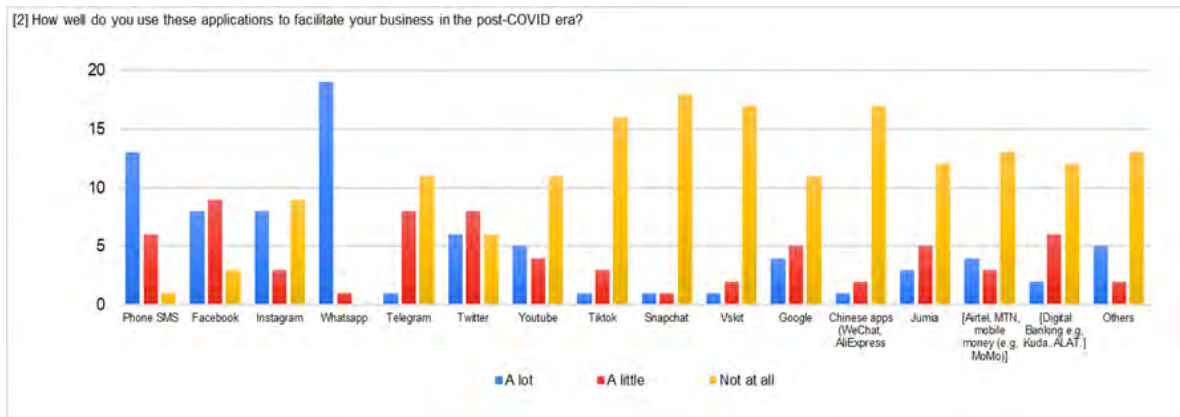
<sup>2</sup>Access the questionnaire at: <https://docs.google.com/forms/d/e/1FAIpQLScnoFm9Ncg71WRw9Vj8vQtPfQEPRYsIDGwuLRIYAo7wCPYwiA/viewform>

Table 2.0: A Summary of Agrifood MSMEs Responses from the Administered Questionnaires

Digital tools	Description
Platform:	Online
Sampling Method:	Convenience and snowball sampling
Question types:	Multiple choices, checking boxes, and open-ended
Start date:	August 4th, 2022
Close date:	August 30th, 2022
Total responses:	20
Analysis:	20 (After review and cross-checking)

Source: Authors' Data Collection

Figure 1.0: Use of Digital Applications to Facilitate Agrifood Businesses in the post-COVID-19 Era



Source: Authors' Data Collection



Table 3.0 Exploratory Presentation of Survey Data (I)

Variables	Description
Respondents' Ages	81 percent (25 - 54 years (prime working age); 6 percent (15 – 24 years); 6 per cent (55 – 64 years); 7 percent (the elderly – 65 years and over).
Respondents' Businesses' Ages	0 - 14 years (79 percent); 15 – 24 years (5 percent); 25 - 54 years (16 percent)
Business Annual Income Level ( $\leq 2.5m$ )	50 percent ( $\geq 2.5m$ ), 40 percent ( $< 1m$ ); 10 percent ( $1m \leq x \leq 1.5m$ )
Gender (Male, Female)	75 percent (male); 15 percent (female); 10 percent (prefer not to say)
Education (PhD, Masters vs Bachelor's, Dip)	68 percent (Ph.D., Masters) vs. 32 percent (Tertiary education (Diploma, Bachelor; secondary or high school)
Business location (Both Urban, Rural)	47 percent (online & physical location), 42 percent (urban), 5 percent (rural), 5 percent (online businesses)
Business Sizes – Medium, Small, Micro;	42 percent for small businesses, 42 percent for medium sized; 16 percent for nano and micro businesses
Commerce/Industry type (secondary, etc.)	33 percent for primary (farming, livestock); 28 percent for secondary (value addition and processing); 17 percent for tertiary (facilitation services); 22 percent for quaternary (intellectual services industry);
State of Operations	Lagos (26.1 percent), Abuja (30.4 percent); and; Kano (8.7 percent), 4.3 percent for each of Ekiti, Rivers, Cross River, Abia, Port Harcourt, Rivers, Taraba and Anambra
CAC Registration	Registered (80 percent), In progress (15 percent), Not yet (5 percent)
Good understanding of digitalisation	Registered (80 percent), In progress (15 percent), Not yet (5 percent)
Shallow awareness of digital solutions	>90 percent
Post-COVID-19 usage of digital tools	Only aware of group chat but not rice advice, Akilimo, cassava e-market, etc.
Post-COVID-19 usage of digital tools	Diverse, but primarily for meetings, information management

Source: Authors' Data Collection



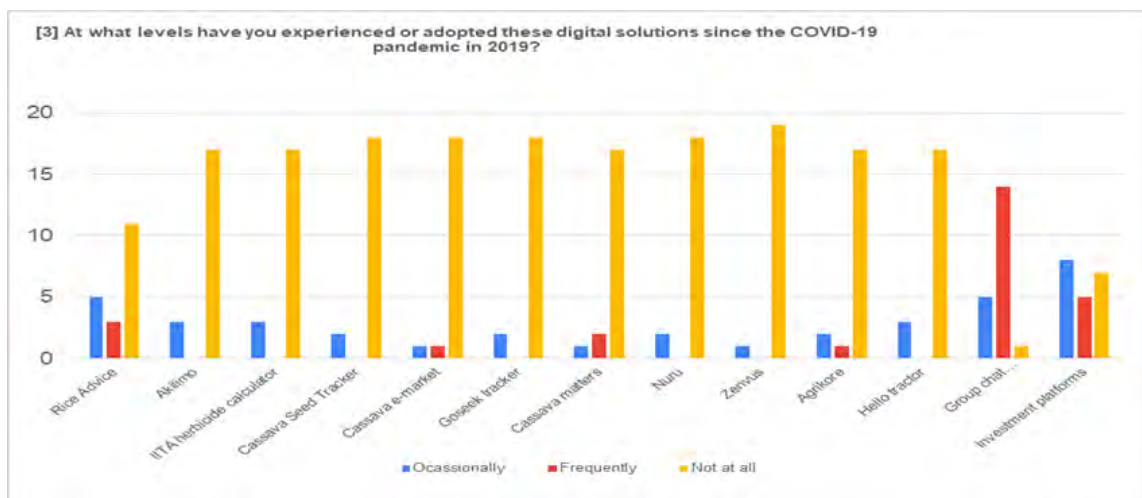
## 5.0 Empirical Analysis Results, Findings, and Discussions: Zero- or Positive-Sum Game?

Following the logic of the survey responses, the most relevant and crucial findings based on the research objectives were presented in this section. These findings cut across what the smallholder agrifood MSMEs perceived as opportunities, strengths, required government interventions, challenges, and future threats. Table 3.0 presents the variables and summary or descriptive statistics. According to Table 3.0, 81 percent of the agrifood NMSMEs are owned and managed by Nigerians in their prime working age (25 – 54). 79 percent of the agribusiness are 0 - 14 years, while 16 percent of the businesses are older than 25 years. The fact that 50 percent of the business runs on less than N2.5 million annual income buttresses the point that the research focuses on NMSMEs. Men own 75 percent of Nigerian small businesses, and about 68 percent of the respondents have doctoral and master’s degrees. 47 percent of these small businesses are located online and operate a physical office. About 42 percent of these businesses existed in urban communities, compared to 5 percent in rural areas. 90 percent of businesses are

aware of digitalisation but largely unaware of digital solutions other than using group chat apps to communicate market prices and input information (see Figures 1.0 and 2.0). 42 percent of businesses are small, and 42 percent are medium, while micro businesses are barely 16 percent of the sample. 33 percent of the businesses operate in agribusiness.

A snapshot of our descriptive statistics shows that many of these NMSMEs are adopting digital tools to enhance their productivity, income and export capabilities. However, a closer look at the ongoing evolution of agribusiness NMSMEs’ digital capacities reveals a starkly high level of inequalities, thereby deepening the existing zero-sum game in the landscape. Our research shows that from a static standpoint, there is free entry and exit of NMSMEs in the digital space. However, and dynamically, these NMSMEs are endemically skewed along the following categories - digital tools adoption, association memberships, geographical location, gender, education, and incomes.

Figure 2.0: Experiences with the Adoption of Digital Solutions since the COVID-19 Pandemic in 2019

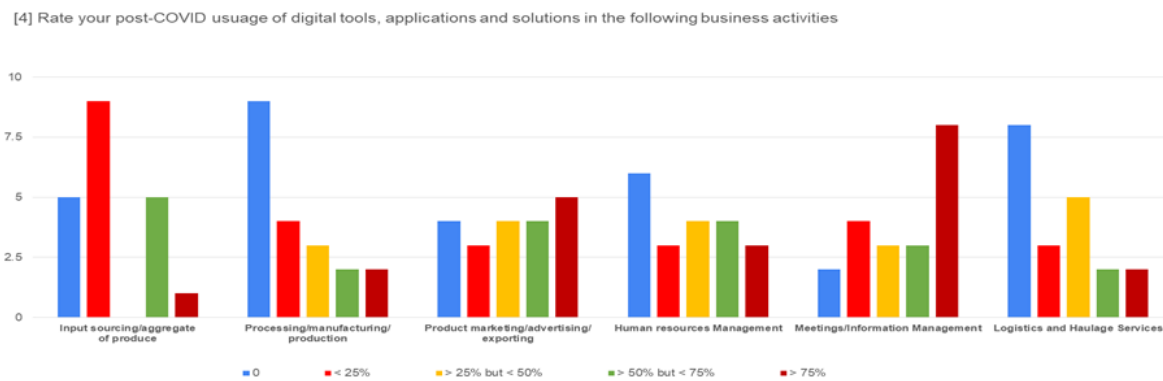


Source: Authors' Data Collection

Table 4.0 shows that 30 percent are aware of agrifood digitalisation policy while a notable 55 percent need to be aware of such government interventions. Invariably, the survey data reveal digitalisation disparities among agrifood MSMEs in Nigeria. Furthermore, though 67 percent – 89 percent of these agrifood

enterprises are generally confident that digital tools will enhance their market access, about 80 percent of these agribusinesses have yet to apply for digitalisation-related business support or finance from government digitalisation programmes.

Figure 3.0: Agrifood MSMEs Rating of COVID-19 usage of digital tools, applications, and solutions.



Source: Authors' Data Collection

Consequently, as much as 84 percent of agribusinesses are willing to participate in digital

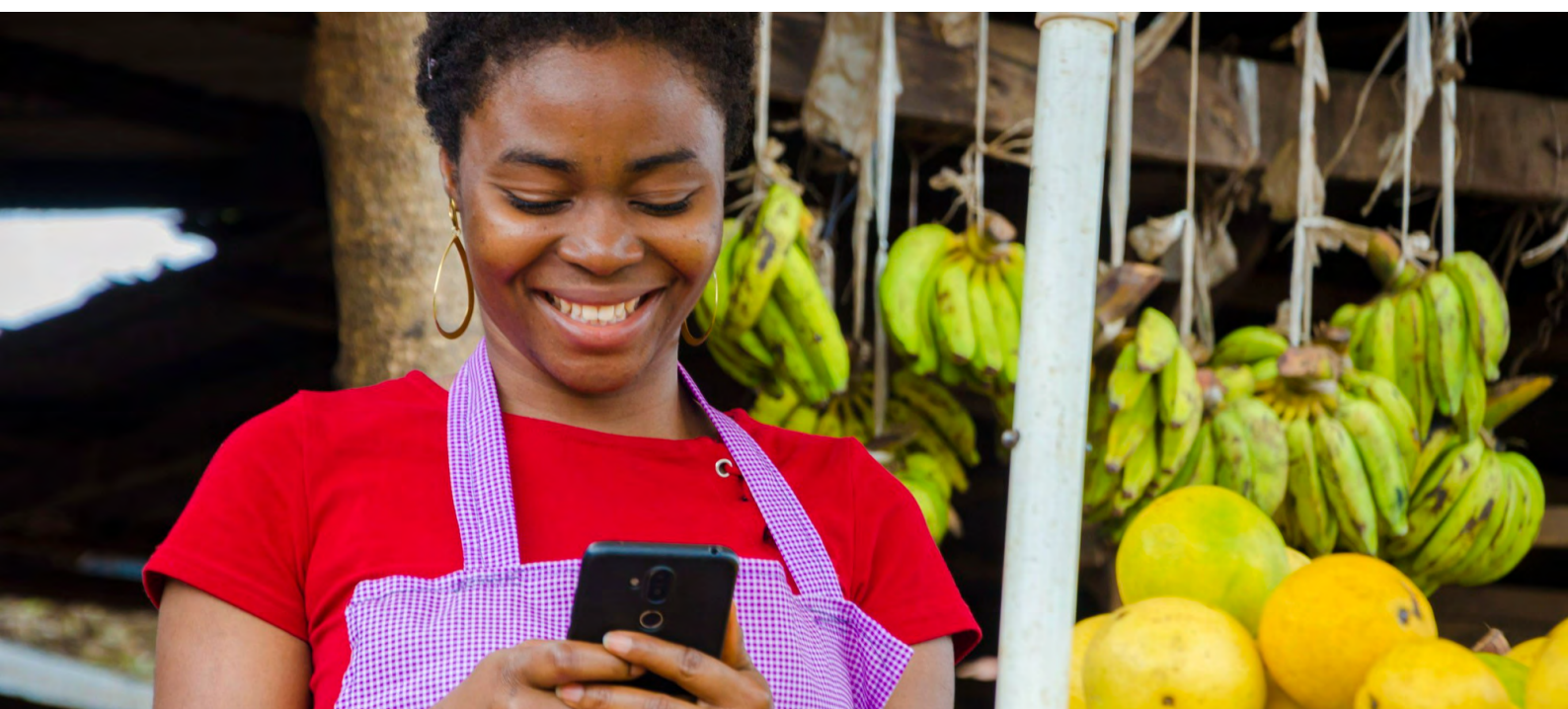
solutions and training towards enhancing their agrifood export intensities.



Table 4.0 Exploratory Presentation of Survey Data (II)

Variables	Description
Awareness of agrifood digitalisation policy	Yes (30 percent), No (55 percent), Uncertain (15 percent);
Mention government or private-sector digitalisation interventions	GES, NATIP, PEDI, Ministry of Communications and Digital Economy, E-wallet, Warehousing receipt system, etc.
Post-pandemic agrifood challenges	Finance (31.4 percent); Market access (21.6 percent), Information inadequacy (17.6 percent), Business incubation shortage (13.7 percent), no government support (15.7 percent).
Application to digitalisation-related business support or finance from government or enterprises	No (80 percent), Yes (15 percent), Maybe (5 percent)
Digital tools will foster market access	Most confident (67 percent), slightly confident (22 percent), not confident (11 percent)
Digital tools and businesses' future prosperity	Most confident (78 percent), slightly confident (11 percent); not confident (11 percent)
Post-COVID use of digital tools for business growth	Yes (90 percent), Maybe (5 percent); No (5 percent)
Participate in digital solutions for export-intensity training	Yes (84 percent), Maybe (16 percent); No (0 percent)
National and global digital platforms for market access – to facilitate business	Limited to Facebook, Instagram, Twitter, LinkedIn, Jumia, WhatsApp
Professional Associations' Membership	NACCIMMA, NEPC, LCCI, MAN, Institute of Agribusiness, CIBN, IOD, FADAMA, None

Source: Authors' Data Collection





## 6.0 Forward-Looking Policy Recommendations towards a Positive-Sum Game

As the Nigerian government endeavours to harness digital technologies and platforms to accelerate socioeconomic transformation, its digitalisation strategies pose diversified and dynamic effects on the agrifood value chain and sector in the post-COVID-19 era. The synthesis of our research findings reveals that the impact of the COVID-19 pandemic on agrifood NMSMES since 2020 should reshape Nigeria's NMSMES' digitalisation strategies to make them positive- rather than zero-sum, thereby accelerating agrifood NMSMES capacities after the COVID-19 pandemic lockdown period. In this regard, the positive-sum policy recommendations should systemically transition Nigeria's agrifood NMSMES, where about 70 per cent of the agribusinesses are

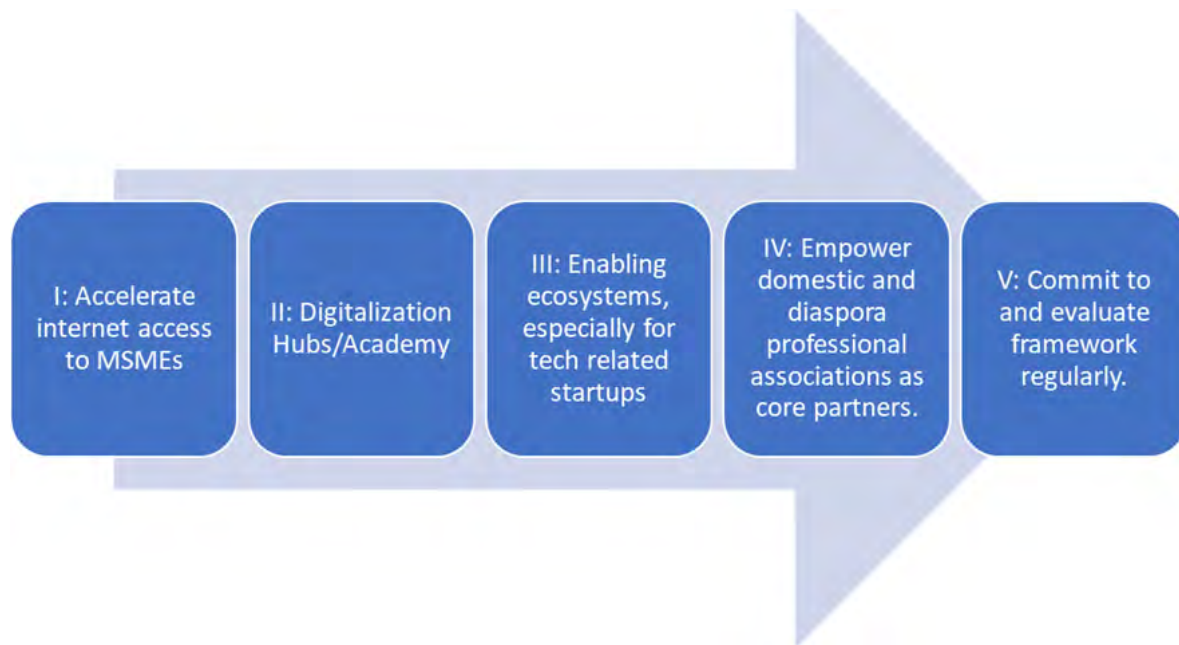
uninformed about government agrifood digitalisation-related policies or programmes. This requires leveraging existing digitalisation frameworks to transition from the current static state of digitalisation towards agrifood NMSMES deepening through positive-sum 5XAACS digitalisation intervention. 5XAACS implies five agrifood academies, associations, and communities within a local government system.

Some partners for implementing 5XAACS include the MasterCard Foundation, the World Bank's Ease of Doing Business Programme, the Central Bank of Nigeria, the Ministry of Communication and Digital Economy, the Federal Government, agencies like Small,

Medium, and Enterprises Development Agency (SMEDAN). For instance, in 2000, MasterCard Foundation's \$500 million 'Young Africa Works Programme' built youth capacities and technical skills in digitalisation, agriculture, and creative sectors, collaborating with Babban Gona as the agricultural training and income generation

model for young people. Figure 4.0 provides a schema on the stages of implementing a 5XAACS intervention, providing a toolkit, insights, roadmap, and expertise for deploying digital technology for NMSMEs' market access and expansion.

Figure 4.0: Stages of 5XAACS Implementation



Source: Authors' Design



## 6.1 Research Limitations and Areas of Future Studies

The research limitation relates to our plans to conduct an impact analysis study of resilient strategies for fostering increased digitalisation of small agrifood businesses, especially during a global health epidemic. Thus, future research will investigate Nigeria's SMEs' agrifood exports by improving their competitiveness. Consequently, this research will discuss the state of digitalisation in agrifood exports, the challenges they face, and what we can recommend to stakeholders to improve their export intensity and global market access.

Furthermore, what evidence-based policy options could NMSMEs, and states learn from adopting successful digital tools for enhancing agrifood export intensity and diversity? By how much would a digitalisation intervention enhance agrifood exports in Nigeria? In this research, we will investigate post-COVID-19 digitalisation policies and agrifood MSMEs' access to markets. How does this policy affect

digital trade-tech adoption and ultimately influence MSMEs' market access across the agrifood value chain at the states and national levels? To verify this, future research will design a theoretical model and test its implications using a unique database collected by the National Bureau of Statistics (NBS), Central Bank of Nigeria (CBN), the International Trade Centre (ITC), the World Bank, World Trade Organisation and the Small and Medium Enterprises Development Agency (SMEDAN).

With a difference-in-differences (DID) design, we will investigate if NMSMEs' greater exposure to digitalisation will enhance extra market access per 1 million MSMEs – after a digitalisation-related intervention is experienced. In other words, this study will estimate a DID model with location and year-fixed effects while reflecting differential pre-COVID-19 government digitalisation capabilities within and across selected states.





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## 8.0 Annex

Copy of questionnaire administered among MSMEs - <https://docs.google.com/forms/d/e/1FAIpQLScnoFm9Ncg71WRw9VJ8vQtPfQEPRYsIDGwuLRIYAo7wCPYwiA/viewform>





ON AIR

The NESG Radio is a weekly syndicated podcast that keeps Nigerians informed through curated localised content on economic policies and issues across sectors of the Nigerian economy. The NESG podcast helps to effectively communicate the activities of the Group to a younger audience and extend research-based advocacy in a distillable localised format to all Nigerians. The radio had guests from the private sector, public sector, civil societies, and donor communities speak on issues of national interest. In 2022, NESG Radio recorded 30 episodes, with several episodes translated into local languages for the mass audience. To listen, please visit <https://nesgroup.org/podcast>

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*\*Episodes are syndicated to radio stations across local communities in Nigeria*



## ABOUT THE NRFP

The NESG Non-Residential Fellowship Programme (NRFP) is a knowledge hub that bridges the gap between socio-economic research and public policy and promotes evidence-based policymaking in Nigeria. The programme brings together outstanding high-level intellectuals in academia, research-based institutions, the public sector and the private sector to collaborate, share ideas and ensure that findings from its research are applied in practice.

## ABOUT THE NESG

The NESG is an independent, non-partisan, non-sectarian organisation committed to fostering open and continuous dialogue on Nigeria's economic development. The NESG strives to forge a mutual understanding between leaders of thought to explore, discover and support initiatives to improve Nigeria's economic policies, institutions and management.

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