CHAPTER 13
The Surge of Africa's Digital Economy during COVID-19: Impact on the Diaspora Communities

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Abstract
This chapter focuses on the surge in Africa's digital economy during the COVID-19 pandemic. The author examines how digital technologies were adopted and used to enhance economic development during the pandemic. The research is based on a thorough literature review conducted using the Google Search Engine, focusing on literature that explores the impact of the COVID-19 pandemic on the digital economy in Africa. The reviewed literature demonstrates that the pandemic adversely affected economies in Africa and globally. Specifically, it significantly impacted Diaspora communities, particularly regarding their income and home remittances. Additionally, the literature highlights that digital technologies present an opportunity to transform business models and services across various sectors of different countries' economies. In light of these findings, it is recommended that Diaspora communities adopt a strategic approach to create an enabling environment for adopting and utilising digital technologies, thereby advancing their economic activities and providing a buffer against potential future shocks like COVID-19.

Keywords: COVID-19, Diaspora, digital economy, Fourth Industrial Revolution, innovation

1 Introduction
There is an absence of a generally accepted definition of the digital economy. Consequently, measuring digital economies across the globe can be intricate (Abroskin 2019:3). This is reflected by the various descriptions provided in the

literature. The digital economy has been viewed majorly as a process through which information technologies such as the Internet or other means of communication have transformed economic and social relations to the extent of eliminating or minimising various barriers in international economic relations (Kravchenko *et al.* 2019:1). The digital economy has also been described as a global network of economic activities whose business models are primarily reliant on the use of digital technologies (Bukht & Heeks 2017:11; Rouse 2016). Revenko & Revenko (2017:38) consider the digital economy as the foundation of the fourth industrial revolution.

The Organisation for Economic Cooperation and Development (OECD) (2013) reports that the digital economy affects the trade of goods and services via e-commerce using the Internet. The World Bank (2016:3), on the other hand, is of the view that the digital economy goes beyond e-commerce and e-business to encompass conducting business, communication, and service provision in various sectors that include transport, financial services, manufacturing, education, healthcare, agriculture, retail, media, entertainment, and business using digital technologies. Afonasova, Panfilova, and Galichkina (2018: 293) assert that the digital economy description goes beyond using technologies to include professional and market knowledge, creativity, and innovation.

The growth in the digital economy in recent years cannot be overemphasised. A combination of mobile technology, universal access to the Internet, and a shift towards storage, analysis, and development of new applications in the cloud has undeniably altered the dynamics of economic growth (Van Ark 2016:3). Technologies such as the Internet of Things, Industrial Internet, big data, cloud computing, and e-commerce are increasingly playing a critical role in the spheres of economic life resulting in changes in the business models, increased competitiveness of products, enhanced public administration and, raising the living standards of the population (Revenko & Revenko 2017:38).

Thus, the need for investing in digital technology has become apparent as emerging markets ramp up demand for technologies to fuel growth, advance markets, establish new ways to cut costs, and drive Innovation. Digital technologies are also driving consumer income and demand, education and training, and efficient use of capital and resources, which lead to increased economic growth, particularly in emerging markets (Oxford Economics 2011: 2). Van Ark (2016:3) argued that despite the rapid increase in investments in information and communication technologies including mobile technology, the Internet, and cloud, visible progress in productivity growth is yet to be generated.

2 A Snapshot of Global Trends in the Digital Economy

The advancement of the global digital economy has been viewed as the most important driver of innovation, competitiveness, and economic growth around the world, with the major products consisting of goods and services that were provided in the traditional economy now being provided by computer and digital systems such as the global Internet. However, the digital economy is characterised by an on-demand economy whose focus is not on the sale of goods and services but rather on accessibility to them when required (Kravchenko *et al.* 2019:1). Innovation and technological developments are the two major trends demonstrated in the modern world economy (Zolochevskaya, Cherkasova, Arsenieva & Lozovova 2019:354).

Information and communication technology (ICT) facilitates inclusive participation in the economy by providing network infrastructure accessible to all stakeholders, irrespective of their geographical location (Berisha-Shaqiri, 2015:78). Thus, the Diaspora community has a chance to embrace the emerging technologies to advance economies in their origin and host countries. Afonasova, Panfilova and Galichkina (2018:293) assert that digital technologies are core to advancing innovation and competitive advantages in advanced countries. Oxford Economics (2011:2) finds that key technologies such as mobile technology, business intelligence, cloud computing, and social media have been identified as crucial to driving a digital economy in developed and developing economies. Furthermore, it has been established that the shift towards a digital economy has implications for corporations requiring, for instance, that they have a forward-looking strategy for emerging markets by viewing the phone as a primary means of access to the Internet and improving data analytics which can indicate global market shifts.

Communication networks have been established as crucial for the digital economy progress as they underpin the broader use of all ICTs for social and economic development. Communication infrastructures have witnessed continuous growth driven by increasing demand (OECD 2017:114). Furthermore, digital economies have seen a decline in the prices of digital assets, including computers, communication equipment, and software, leading to greater investments in ICT services and a growing emphasis on intangible assets and innovations. As a result, businesses have been presented with a chance to operate at lower costs while increasing their efficiency of products and services at competitive prices.

Transformation in consumer behaviour and new business models have

also been cited as aspects of the global market to be altered by the Internet (Oxford Economics 2011:2). Globally, businesses are experiencing a change in business models influenced by a change in structures, processes, products, and infrastructure adopted by companies or industries (Zimmermann 2000). There is an increased business expenditure on digital services such as cloud computing, data analytics, and other information services in major advanced economies like the United States, the United Kingdom, and Germany (Van Ark 2016:3). As a result of the influence of technologies and change in business models, it has become imperative for nations to invest in appropriate skills and competencies for employees. According to OECD (2017:114), employment in the ICT sector has gradually grown since 2013, driven by job creation in IT services. Afonasova, Panfilova and Galichkina (2018:293) gave an example of the United Kingdom government, which calculated the necessity to double the number of university graduates with engineering and digital skills up to 1.86 million by 2020. This statistic indicates that there is a need for governments to invest in appropriate skill sets that will drive innovation in digital economies. The Diaspora communities can also leverage the digital economy to acquire skills that benefit both the host and countries of origin.

3 Digital Economy in Africa

The African continent has witnessed growth in the digital economy driven by increased access to and use of technologies in various sectors of the economy. A report by Ndung'u (2018:86) indicates that Kenya, Mozambique, Malawi, Rwanda, Uganda, and Senegal have consistently outperformed on the innovation index regarding the highest innovation in Africa. Osiakwan (2017) identifies Kenya, Ivory Coast, Nigeria, Ghana, and South Africa, which he coined as 'Kings' as having taken leadership in technological innovations in the African continent. These countries, he noted, have led the rest of the African continent by establishing increased broadband penetration and developing pro-innovation public policies that expedite digital innovations. Furthermore, the countries were characterised by entrepreneurial ecosystems, vibrant telecoms, tech infrastructure, and explicit government policies and implementation plans that distinguish them from other countries in the continent.

The continent has witnessed a proliferation of innovation hubs, regarded as platforms that facilitate and foster innovations, making significant contributions to the digital economy. Friederici (2019:194) and GSMA (2016:25)

note that hubs have sprung up across the African continent intending to provide spaces that have enabled the creation of local software applications. iHubs have been seen to increase from a handful in 2010 to approximately 310 active tech hubs, including 180 accelerators and incubators across the continent. GSMA (2016) noted that the top three countries with the highest number of hubs as of 2016 included South Africa, 51; Kenya, 26; and Nigeria, 23. According to Osiakwan (2017:60), tech hubs are critical in providing co-working spaces and incubators which have enhanced innovations, creativity, and entrepreneurship.

As noted earlier, technological advancement has played a crucial role in enabling digital economies in the continent. Bogdan-Martin (2019:8) asserts that the network covers 79.5% of the population in Africa, while Miniwatts Marketing Group (2020) reported 39.3% of estimated internet users in Africa as of 31 March 2020. Mobile technology has become a crucial platform of choice that has enabled the creation, distribution, and consuming innovative digital solutions for Africa. The expansion of advanced mobile networks has enhanced this, with the continuing growth of smart devices, accessibility to real-time, rich content on the go, and the underdevelopment of alternative technologies such as fixed lines in the region (GSMA 2016:24).

In 1998, there were fewer than four million mobile phones on the continent (Osiakwan 2017:60). According to Bogdan-Martin (2019:5), mobile broadband subscriptions per 100 inhabitants continued to grow strongly with an 18.4% year-on-year growth from 2005 to 2019. Osiakwan (2017:60) reports that the economic growth in the continent has been underpinned by high mobile penetration rates (90%) and widely available broadband. GSMA (2016:33) also noted that mobile operators and ecosystems provided approximately 1.3 million people in Africa with jobs in 2015, and this trend continues as more firms adopt mobile systems to provide goods and services. According to Osiakwan (2017:58), Africa's millennials have increasingly opted to develop web applications and be creative in entrepreneurship, disrupting the traditional markets. For instance, The United Nations Conference on Trade and Development (UNCTAD) (2018:2) reported that African countries had shown significant progress on several key e-commerce indicators, such as an increase in online shoppers which has surged annually by 18% since 2014, compared with the world average of 12%. An estimated 21 million online shoppers were recorded in Africa in 2017, and the numbers are rising faster than in other world regions. UNCTAD estimates that Africa's business-to-consumer (B2C) e-commerce market was worth about USD 5.7 billion in 2017.

Other sectors have also been noted in the digital economy in Africa. Boateng *et al.* (2017) identified some formal and informal digital enterprises in Africa that only exist because of ICTs. Formal digital services include telecommunications enterprises that offer voice, text, and, more recently, mobile money and insurance products; digital services such as mobile applications for smartphones that have enabled e-Banking, gaming, social networking, entertainment, and e-payment among other products; software and IT consulting services; hardware manufacturing mostly attributed to assembly; information services dominated by various broadcasting companies who have established different online services from their traditional ones; platform economy that includes social networking, online auctioning and retailing, mobile payment among others; gig economy which encompasses online short-term contracts or freelance jobs; and, sharing economy that includes sharing and lending of good and services via online markets such as Airbnb. Informal digital services include online training, adopting WhatsApp for businesses, network marketing, and negative services such as cybercrime and digital piracy.

Another trend in the digital economy has been noted in the change in payment systems. While Kravchenko *et al.* (2019:2) report that 'the global trend shows that the main means of payment are credit cards (Asia and North America), in second place is a digital payment system, this is a platform of electronic means that can be used in any calculations (Western Europe and China). Another popular method is debit cards (Africa)', there has been an increase in mobile money payment. UNCTAD (2018:2) states that the growth in mobile money service providers in Africa has outpaced the global average, with Africa having the largest share of adults with mobile money accounts worldwide. Osiakwan (2017:64) argues that mobile money has played a crucial role in creating an inclusive financial ecosystem, allowing non-cash transactions among individuals at the bottom of the economic pyramid.

4 Impacts of the COVID-19 Pandemic on the African Diaspora Investments

The spread of COVID-19 necessitated governments worldwide to take measures to curtail its spread. These measures included closing down physical enterprises, including businesses. As a result, African economies have experienced significant setbacks during this period, mainly in terms of lost productivity and trade within and among countries (Gondwe 2020:3).

Asquith and Opoku-Owusu (2020) recognise four types of Diaspora investments, namely: Diaspora remittances; Diaspora direct investment (DDI); Diaspora real estate as DDI, and Diaspora portfolio investments (DPIs) with remittances being recognised as the major engine of African development. The World Bank notes that African remittance transaction costs are the highest at 9% compared to the global average cost of 7%. However, while African Diaspora investors have a wide range of investment activities across various sectors, it is noted that the informal sector forms a significant percentage of the economy, up to 65% of all jobs and forms a significant component of Diaspora investment activity. Gondwe (2020:6) found this detrimental amid COVID-19 lockdowns. The author asserts that most African economies rely heavily on the informal sector that provides daily wages. Therefore, a complete shutdown essentially results in no income. Similarly, this lack of income was experienced in small and other informal business ventures that sustain livelihoods and economies. Consequently, this would directly impact economies supported by Diaspora communities.

Anyanwu and Salami (2021) state that Africa was hit by the COVID-19 pandemic, with the African Development Bank (2021) estimating that economic growth in the continent shrank by 2.1% in 2020. Economic growth was forecast to resume at a moderate average pace of 3.4% in 2021 before reaching 4.6% in 2022.

Therefore, the COVID-19 measures taken by governments worldwide posed a challenge to the Diaspora community regarding economic development and sustainability of their income and contribution to the economies. Thus, finding innovative ways to safeguard their investments against the effects of events like the pandemic has increasingly become crucial. Technology has been presented as an opportunity in this case.

5 The Influence of COVID-19 on the Digital Economy

While global productivity had been recorded to be remarkably slow for almost a decade and with little indication of the digital economy boosting productivity growth, Van Ark (2016:3) and Jackson, Weiss, Schwarzenberg and Nelson (2020:34) reported that the economic growth in early January 2020, before the COVID-19 outbreak had been mainly projected by the International Monetary Fund (IMF) to have been slightly more positive than in 2019. However, these projections would be revised downward due to the slowdown in international

trade caused by COVID-19, lower energy and commodity prices, and an increase in the dollar's foreign exchange value.

According to ILO (2020:2), Jackson *et al.* (2020:34) and McKibbin and Fernando (2020:45), the Chinese economy slowed down due to COVID-19, which led to a negative impact on the global economy. There have been contractions in production and disruption in the global supply chain, with commodity-exporting countries likely to experience a greater slowdown in growth. Furthermore, ILO (2020:4), Jackson *et al.* (2020:34) and McKibbin and Fernando (2020:45) established that businesses faced serious challenges following travel restrictions, limitations in transport systems, border closures, and quarantine measures which led to the inability of many workers to go to work which impacted incomes. Sectors such as aviation, tourism, and hospitality faced a real threat with significant declines in revenues, insolvencies, and job losses. For instance, 'an initial assessment by the World Trade and Tourism Council forecasts a decline in international arrivals of up to 25% in 2020, which would place millions of jobs at risk' (ILO 2020:4).

As sectors continue to be affected, consumer confidence also decreases. McKibbin and Fernando (2020:45) found that panic among consumers and firms distorted usual consumption patterns and created market anomalies. Global financial markets have also been responsive to the changes, and global stock indices have plunged. Meyer (2020) reports on social aspects such as restaurants, movie theatres, and gyms that were closed to enhance social distancing, thus, rapidly changing the economy. Most workers were faced with new challenges of working remotely.

Given the best-case scenario, Africa's average GDP growth for 2020 was estimated to fall by 1.4 percentage points, from 3.2% to 1.8%. In a worst-case scenario, a drop of 2.6 percentage points was envisioned. The uncertainty revolving around the virus, coupled with social distancing, lockdowns, and policy actions, led to a reduction in demand for products and a decline in economic activities on the continent (United Nations Economic Commission for Africa, 2020:8). World Bank (2020:1) projected a loss of between USD 37 billion and USD 79 billion in 2020 for the African region. 'The downward growth revision in 2020 reflects macroeconomic risks arising from the sharp decline in output growth among the region's key trading partners, including China and the Euro area, the fall in commodity prices, reduced tourism activity in several countries, as well as the effects of measures to contain the COVID-19 global pandemic'.

Given the circumstances, sectors that could digitalise were likely to thrive under the COVID-19 pandemic conditions. UNECA (2020:31) and World Bank (2020:74) assert that African countries need to strengthen their ICT sector more than ever by establishing legal and regulatory frameworks relating to cybersecurity, personal data protection and privacy, and digital and supporting technology start-ups. Digital technologies can aid in facilitating the interface between supply and demand, as well as boosting social protection systems to combat the impacts of the pandemic. UNECA (2020:31) foresees an acceleration of the digital economy post-COVID-19, given that developed markets are already ahead in digital economy adoption. According to Banda (2020:1), lockdowns generated greater demand for communications, computers, and information services. He gives the example of Safaricom in Kenya, which experienced a 70% surge in data usage as citizens stayed home to curb the virus. Banda found new economic opportunities in digital services like cloud computing, data storage, Internet of Things, Artificial Intelligence, and digitally deliverable services like legal, financial, and business, and e-commerce by manufacturing and services companies and online work.

It is reported that there has been a 20% increase in digital purchasing since 2014, as indicated in Adobe Digital Economy Index. A surge in sales of groceries, cold medications, fitness equipment, and computers was experienced due to COVID-19 (Express Computer 2020). Several sectors will likely experience a surge due to digitalisation resulting from the COVID-19 pandemic. The entertainment industry has seen the internet surge between 50% and 70% as millions of people have gone online for entertainment. Streaming has also accelerated by an estimated 12% (Beech 2020). Netflix, for instance, has seen a drastic popularity growth in March and April 2020. Bizcommunity (2020) reported that in early March 2020, Netflix searches had a popularity score of 75, which grew by 17.3% in the second week, and 89 in the final week. By the first week of April 2020, the score had hit 100, a growth of 12.3% from the last week of March and 142% from a similar period in 2019.

The education sector has experienced a shift in teaching methodologies, with most schools finding ways to teach online. According to the World Bank (2020), large-scale national efforts in adopting technologies to support remote learning, distance education, and online learning during the COVID-19 pandemic are evolving rapidly. The OECD estimated that over 421 million children were affected in 39 countries by school closures as of March 13, 2020. Whilst the changes have caused some inconvenience, they have also offered an

opportunity to educational institutions to adopt innovative solutions in the education sector. Tam (2020), however, pointed out that teaching quality relies upon the level and quality of digital access, considering that only 60% of the world's population is online. A digital divide may also be experienced. For instance, while virtual classes on tablets may be the norm in Hong Kong, less developed countries may rely on emailing assignments. Moreover, the cost of digital devices and data may widen the gap in the digital economy.

During COVID-19, many meetings and events were redesigned and conducted in virtual spaces. Given the right technologies, virtual events and meetings can reach a wide audience with fewer limitations, as evidenced by travel restrictions (Congrex Switzerland 2020). Platforms like Zoom have been adopted to support online meetings, conferences, and other functions such as online learning, exercising, parties, virtual work, and funerals. Evans (2020), citing Bernstein Research and Apptopia, reported that Zoom's daily users spiked to 200 million in March 2020, up from 10 million in December 2019.

Naturally, there was a drop in physical retailing as people observed social distancing and quarantine, making online retailing a beneficiary of COVID-19. Therefore, an increase in online shopping was experienced as people turned to eCommerce to acquire items they would otherwise have acquired in person (McKenzie 2020; Meyer 2020). Online retail sales were estimated to reach USD 6.5 trillion by 2023, but the outbreak propelled the numbers into overdrive. Large retailers struggled to keep up with unprecedented consumer demands. Amazon, for instance, was overwhelmed with online shopping that they announced they could not keep up with the demand and would delay deliveries, particularly of non-essential items (Jones 2020). Furthermore, Amazon opted to hire more than 100 000 workers to manage consumer demands, particularly targeting those that had lost jobs during the pandemic (Titcomb 2020).

6 Conclusion

Amid the COVID-19 pandemic, governments took drastic measures that affected incomes globally. This situation greatly affected the Diaspora community, considering that they are hosted in countries different from their origin. As a result, their financial contribution towards their host and origin countries affected the economies equally. In this study, the author established that emerging technologies present great opportunities for the Diaspora

community to innovatively enhance ways of generating income, explore a range of sectors that perform well digitally and re-think their means of service delivery. It will help cushion them from eventualities such as pandemics that can easily curtail their economic activities. It is also proposed that governments develop policy frameworks that will enhance technology diffusion and use to enhance Diaspora use of technologies in facilitating digital services.

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