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Digital Entrepreneurship in Africa: Case Studies of Nigeria and South Sudan

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6.1 Introduction

In the literature, the internet has been referred to as a global leveller of opportunity, particularly for entrepreneurs, due to the way digital technologies have transformed the way we live, work and interact (Friederici et al., 2020; Nambisan, 2017; Ngoasong, 2018; Roundy & Fayard, 2019). Digital technologies have allowed entrepreneurs to go

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beyond traditional constraints of engagements previously encountered. They have provided access to larger reach, irrespective of location, utilising the combinatory effects of globalisation and digitalisation, thereby enabling entrepreneurs to operate on a more global scale, creating equal opportunities (Taura et al., 2019).

The concept of digital entrepreneurship revolves around the pursuit of market opportunities by making use of or leveraging digital technologies or information and communication technologies (Friederici et al., 2020; Roundy & Fayard, 2019). It has been defined in the literature as the interaction between digital technologies and entrepreneurial processes and how they impact each other in terms of design, use and commercialisation of digital technologies, in pursuit of market opportunities, and creation and adaptation of economic activities (Friederici et al., 2020; Nambisan, 2017; Recker & Briel, 2019; Roundy & Fayard, 2019). Attributes of digital technologies such as being editable, combinable and the ease of distribution have aided their adoption into entrepreneurial activities, informed how businesses are being re-imagined and created for more robust and sustainable ventures (Dal Zotto & Omidi, 2020; Elia et al., 2020; Nambisan, 2017).

Some fundamental dimensions of digital entrepreneurship have been identified in the literature (Davidson et al., 2018; Recker & Biel, 2019; Wagner & Wäger, 2019) with regards to digital technologies. One of these dimensions is digital technologies '***as a digital enabler'*** of entrepreneurial activities or processes (Davidson et al., 2018; Nambisan, 2017; von Briel et al., 2018; Wagner & Wäger, 2019). Leveraging digital technologies by entrepreneurs play a critical role in promoting and supporting innovation (Leong et al., 2020). The second dimension is ***'as a digital outcome'*** of entrepreneurial activities, in terms of business architecture, products or market offerings. The third dimension is ***'as a digital context',*** where the entrepreneurial activities occur in terms of environment, sector, industry and even ecosystems (Davidson et al., 2018; Von Briel et al., 2018). The success of entrepreneurs relies not only on their business venture and capabilities but also largely depends on the entrepreneurship ecosystem they operate in (Elia et al., 2020). Digital entrepreneurship highlights how practice, theory and education are changed by digital technologies.

While there is an increasing body of research on digital entrepreneurship, many of these studies focus mainly on developed economies. Thus, there are relatively few studies in the contexts of developing countries, particularly in Africa (Leong et al., 2020; McAdams et al., 2019; Nambisan, 2017). To this end, this chapter presents the emergence of digital entrepreneurship in Africa, highlighting the role of innovation and organisational skills as critical to successful entrepreneurial activities. Then it also reviews the challenges and opportunities of digital entrepreneurship from a female entrepreneur's perspective.

6.2 The Emergence of Digital Entrepreneurship in Africa

The interdisciplinary field of digital entrepreneurship has been rapidly gaining prominence in the global economy and research community (Recker & Briel, 2019). Although there has been much spotlight on the possibilities of a digital boom in Africa, as evidenced by the interests of many Tech Giant organisations in Africa (Friederici et al., 2020; Taura et al., 2019) and the gradual increase in the number of technology hubs across Africa, the business models and approaches adopted in developed economies do not necessarily have the same effects in developing countries in Africa. Also, due to the scarcity of reliable data in many developing countries, there are not many studies on the actual landscape of digital entrepreneurship in Africa.

Current research (Friederici et al., 2020) suggests that many startups and entrepreneurial journeys in countries in Africa do not necessarily follow tested international models in terms of attracting funds and scaling beyond the indigenous economy. Many of the entrepreneurial activities adopt and adapt digital technologies—**digital technologies *as enablers*** (Nambisan, 2017; Wagner & Wäger, 2019), rather than causing massive industry disruptions—***digital outcomes.***

The population of Africans online (using the internet) has steadily increased from 81 million in 2010 to about 294 million in 2019 (UN Broadband Commission, 2020). While this is significant traction, these

figures represent 7.79% and 22.48%, respectively, of the African population (worldometers.info) for those years. This indicates that about 77% of individuals on the continent are still not online (are disconnected). These statistics provide a glimpse of the digital gaps that persist in Africa.

For even the areas that have online access, studies suggest that while digital entrepreneurship has started gaining prominence in some African countries, its distribution across the continent is uneven (Friederici et al., 2020). Of the 54 African countries, 15 accounts for about 85% of the digital entrepreneurship activities on the continent, of which 60% comes from only four countries, namely South Africa, Nigeria, Kenya and Egypt, while the remaining 25% come from eight other African Countries (Friederici et al., 2020). The adoption of digital entrepreneurship is clustered in specific African countries. Even though African entrepreneurs experience many challenges, they can largely overcome them by leveraging available digital technologies.

6.3 Challenges and Opportunities of Digital Entrepreneurship in Africa

Many of the challenges faced by digital entrepreneurs in Africa are similar to those of other emerging economies. In what follows, we shall outline some of the challenges identified in the literature.

- **Lack or inadequate Internet and digital technology access** (Counted & Arawole, 2015; Solomon & van Klyton, 2020; Steel, 2021): Access to the internet has been identified as an essential enabler for digital entrepreneurs, although as mentioned in the previous sections, a large percentage of Africans do not have access to the internet. For those connected, there are still high data and access costs. Some developing economies in East Africa have started exploring collaborations under the One Network Area (ONA) roaming initiative to reduce the high costs of mobile roaming. Some of the beneficiaries of this initiative include South Sudan, Kenya, Burundi and Tanzania.
- **Poor or lack of adequate infrastructure:** lack of basic infrastructure makes attempts to bridge the digital divide more challenging. In

Nigeria, for example, there is epileptic or no power supply in some areas, poor roads and other infrastructure deficiencies (Solomon & van Klyton, 2020; Steel, 2021; UN Broadband Commission, 2018).

- **Insufficient access to finance /funding** (Groza et al., 2020; Solomon & van Klyton, 2020; UN Broadband Commission, 2018): Availability or access to capital is necessary to keep an organisation operational. The high transactional costs of running businesses underscore the need for capital for many entrepreneurs and small businesses in developing countries. While access to funding is a concern for all entrepreneurs, the amount of funding received by female entrepreneurs, in particular, is disproportionately little in comparison with their male colleagues (Groza et al., 2020). It has been argued in the literature that this occurs because there is usually not enough female representation in the decision-making process of funding sources (for example, venture capital).
- **Insufficient collaborations between organisations:** Different organisations have knowledge resident within their respective organisations and competencies. Without enough collaborations, relevant knowledge would continue to exist in silos and cause inefficiencies through replication of efforts across organisations. Collaborations between industry, government and academia would foster innovation (UN Broadband Commission, 2018) and reduce inefficiencies. More impact will be achieved if there are collaborations, co-creation and repositories where knowledge banks can be accessed and utilised across organisations.
- **Restrictions and unavailability of global e-payment systems** (Samara & Terzian, 2021; Solomon & van Klyton, 2020): There are currently many restrictions around suitable payment gateways across many countries that cannot accommodate international transactions. There are also restrictions on some payment links if originating from specific African countries. This is a significant issue for many entrepreneurs as it limits participation on a global scale. Even within Africa, financial transactions between African countries face difficult hurdles, which constitute barriers to trade and access to markets.

- **Institutional voids** (Chakrabarty, 2009; McAdam et al., 2019): Institutional voids develop as a result of the underdevelopment of institutional frameworks in terms of policies, infrastructure, norms and national culture that could support entrepreneurs. For example, it takes an average of 25 business days to set up a business in Sub-Saharan Africa compared to 4 days it takes to set up a similar business in Europe (UN Broadband Commission, 2018). Digital entrepreneurship provides a pathway to overcoming the limitations and barriers caused by institutional voids (McAdams, 2019). Governments in developing countries can provide an enabling environment and supporting policies that bring together relevant stakeholders to tackle the challenges and explore the opportunities within the respective economies.
- **Human capital with under-developed skillsets and structural unemployment** (Coward & Fellows, 2018; Madichie et al., 2019; Solomon & van Klyton, 2020; UN Broadband Commission, 2018): Although access to the internet and digital infrastructure have been identified as necessary conditions for the success of digital entrepreneurship in Africa, they are not sufficient independently (Briel et al., 2018; Friederici et al., 2020), but have to be reviewed with consideration of available resources, skills, capabilities and other complex environmental factors. Improving digital literacy and competencies should help reduce inequalities and improve future job or business opportunities for citizens of African economies. There has to be an alignment with workforce competencies to suit the demands of the current digital landscape (Solomon & van Klyton).
- **Poor Technology Adoption:** Concerns have been raised in some studies that while individuals might have access to the internet, they might not make use of some of the tools and technologies available (Friederici et al., 2020). For instance, people might use their phones for calls, texts and to chat on social media platforms (Facebook, WhatsApp, etc.), nothing more. The level of literacy and digital literacy could impact the degree and value derivable from the adoption and use of the internet.

Technology adoption is also as important and requires some digital competencies and skills. Since there have been rapid changes in technological advancements across many frontsy, the world of work has been changing too, and so are the skills required to keep up and adapt to these changes. The World Economic Forum (WEF, 2020) has predicted that by the year 2030, one billion people will need to be reskilled for future jobs (many of which are not in existence yet). Therefore, entrepreneurs will need to balance their current collection of existing capabilities while also developing new digital competencies and capabilities (Warner & Wäger, 2019). Despite investment efforts to leverage digitalisation, many African countries are still yet to benefit fully from outcomes of the digitalisation process because of persistent digital gaps in terms of skills and competencies.

Irrespective of these challenges, there are also opportunities that are available to digital entrepreneurs in Africa.

- **Opportunities to improve digital skills** to learn, improve digital literacy levels, increase the number and quality of technology users that can, in turn, support innovation.
- **Barriers to entry for digital entrepreneurship are low,** and there are also opportunities to create solutions that address some of the challenges mentioned. For example, an opportunity to innovate around a payment system that is global and tailored to African needs.

Availability and access to digital infrastructure is an external enabler for digital entrepreneurs (Friederici et al., 2020) that could be harnessed. Also, digital entrepreneurship can help female entrepreneurs bridge the digital divide and remove some barriers and local restrictions they might have been directly or indirectly subjected to (Roundy & Fayard, 2019). **Digital entrepreneurship as an enabler for marginalised group**s such as females that experience additional constraints as a result of cultural, social and environmental factors (Roundy & Fayard, 2019). Therefore, this paper reviews challenges to digital entrepreneurship from a female perspective and across two African countries (Nigeria and South Sudan).

6.4 Organisational Skills in Digital Entrepreneurship

While the proliferation of new technologies has brought about many opportunities, one of the main challenges is the skills gap that has emerged, particularly around digital skills and technology adoption (Coward & Fellows, 2018).

Digital skills can be categorised along a continuum. The more popular categories in the literature are

- *Basic digital skills* (minimum level of digital literacy, foundational skills that enable one to function in the digital world),
- *Intermediate digital skills* (skills that enable one to perform work or job-related functions and create content using technology. They consist of a wide array of skill sets) and
- *Advanced digital skills* (these are skills needed by specialists in their different fields or subject areas).

The DigComp framework by the European Commission provides a valuable reference for planning digital competencies (Khan & Vuopala, 2019; UNESCO, 2019). DigComp 2.0 outlines eight proficiency levels across five areas of competencies, namely: (1) Information and data literacy, (2) communication and collaboration, (3) digital content creation, (4) safety and (5) problem-solving. Each of these competencies has knowledge, skill sets and proficiencies associated with the competency. The DigComp framework could support the harnessing of digital technologies to innovate, deal with the rise of digital skills and competencies needed for personal development, social inclusion and business development. Improving the digital literacy rates and digital skill competencies in Sub-Saharan Africa should help reduce inequalities and improve future job opportunities for her citizens. One way to explore competencies is using the dynamic capabilities framework to provide a lens on how entrepreneurs can respond to the technological changes and digital economy through their capabilities and competencies.

6.5 Dynamic Capabilities

Calls in the literature have suggested exploring the concepts of digital entrepreneurship through a dynamic capabilities' theoretical lens (Dal Zotto & Omidi, 2020; Dong, 2019; Warner & Wäger, 2019). The Dynamic Capabilities (DC) Theory provides an innovation-based framework that explicates the capabilities of firms to integrate, build and modify from their existing resource base. It helps organisations respond rapidly to market, environmental or technological changes for competitive advantage (Dillon et al., 2020; Dong, 2019; Helfat & Peteraf, 2015; Roundy & Fayard, 2019; Teece, 2007, 2018; Warner & Wäger, 2019).

Proponents of this theory broadly categorise dynamic capabilities into three groups. 1. Digital sensing, which is concerned with making sense of the emerging technological and market landscapes. This capability could be subdivided into scouting, scenario planning and mindset crafting. 2. Digital seizing, which is concerned with experimenting with methods and collaborating to be able to respond to changes. It could be subdivided into strategic agility, prototyping and organisation of digital portfolios. 3. Transforming capabilities, which refers to the managing and stabilising of internal and external structures of the organisation and attaining digital maturity, through the digital upskilling of its workforce. Subcategories for this capability are navigating ecosystems, reorganising internal structures and digital maturity.

Organisations have to constantly balance the use and adaptation of their existing capabilities while at the same time reviewing new organisational capabilities and evaluating where they could fit within the existing capabilities and alignments to dynamic market trends. As such, organisations need to build strong dynamic capabilities (Helfat & Peteraf, 2015; Teece, 2007, 2018; Warner & Wäger, 2019).

Some of the new technologies have helped change the nature, and the way organisations react to uncertainties (Nambisan, 2017). Organisations have learnt to create stronger dynamic capabilities through technologies such as the Internet of Things (IoT), BlockChain, Cloud Computing and Artificial Intelligence (to mention a few). The use of social media has also helped organisations to expand their dynamic capabilities.

The attributes of digital technologies (editable, combinable and ease of distribution) help organisations re-configure and re-combine organisational resources and capabilities to form distinct dynamic competencies that are adaptable to the rapidly changing digital environment. They provide modular architecture that is combinable.

Studies (Warner & Wäger, 2019) have suggested improving the digital maturity of organisational workforce (ability to add value through digital means and processes), as an essential dynamic capability. One of the ways organisations have been able to leverage technology is through the use of platforms. Digital platforms are online platforms comprised of different tools and processes that individuals develop or build on to operate and deliver digital services; they help organisations to innovate.

6.6 Role of Innovation in Digital Entrepreneurship

Entrepreneurs and digital organisations do not thrive in isolation; they require supportive, innovative ecosystems that enable them to develop networks, build capabilities and collaborate (Global Entrepreneurship Monitor, 2020). Digital innovation is derived from applying digitising techniques to everyday products, services, or human experiences (Yoo, 2010), such as understanding how to use collaborative tools, adding web and mobile applications to products or services, or improving user experiences. In order to perform some of these functions, organisations need to build organisational knowledge of relevant digital technologies.

Organisational knowledge has been identified as a main driver of innovation (Pinchot & Soltanifar, 2021), which can be improved by increasing the number of organisation's workforce that understands and knows how to use the acquired knowledge. Apart from the intersections between the collective workforce organisational knowledge, and leveraging digital technologies, there are innovation potentials embedded within the heterogeneity and idiosyncrasies of entrepreneurial human capital and their individual competencies (Elia et al., 2020).

A major constraint to developing and leveraging an organisation's knowledge is when the organisation's management lack the adequate

understanding, skills and confidence required to adopt and use new digital technologies. In essence, it is critical that an organisation's management or lead entrepreneur acquires some digital skills and technological understanding and also buy-in to required technology adoption for business success. Upskilling and reskilling through programmes, seminars and networking engagements could help bridge this gap. Leveraging digital technologies by entrepreneurs play a critical role in promoting and supporting innovation (Leong et al., 2020).

6.7 Methodology

This study adopts a mixed-method multi-case study approach (Ngoasong, 2018; Yin, 2003) with perspectives from female entrepreneurs as individual cases within African contexts, in order to gain insights into individual and collective lived experiences of female entrepreneurs. Two African countries were chosen from different African regions to explore differences and similarities in context. The countries used for this study are Nigeria and South Sudan. The use of multiple case studies allowed for comparisons between the female entrepreneurs in each country and across entrepreneurs from Nigeria and South Sudan (Stubbs & Myers, 2015; Yin, 2003).

The dimension of digital technology utilised for this study is digital technologies as 'digital enablers' (Nambisan, 2017; Wagner & Wäger, 2019). The competency explored in this research in line with the Digital Competency Framework is on 'communication and collaborations'—that explores how the entrepreneurs are interacting with digital technologies through sharing, engaging, collaborating and managing their digital identity or brands (European Commission, 2014; Vuorikari et al., 2016). It also aligns with the collaborative sub-capabilities of the strategic agility from the seizing capability (dynamic capabilities framework).

Nigeria is situated in West Africa with a population of over 206 million, while South Sudan is situated in East Africa with a population of 11.3 million. Both countries have a young population with over 50% of the population between the ages of 15 to 64, with Nigeria at 53.57%

and South Sudan at 55.06% (Statista.com). The two countries are classified as low-income countries (Global Entrepreneurship Monitor, 2021), with a high unemployment rate. The rate of unemployment in Nigeria is at an all-time high of 33% (Bloomberg, 2021), according to the Nigerian National Bureau of Statistics (2020), with the rate of unemployment higher for women (35.2%) compared to Men (31.8%). While the rate of unemployment in South Sudan is not as high as in Nigeria, it stands at 12.7% (Knoema, 2020). The economic situation of both countries has exacerbated poverty and unemployment, with unequal effects on young people and women (African Development Bank, 2020a, 2020b).

Data was collected from 422 female entrepreneurs from the two countries (Nigeria [N] = 392; South Sudan [N] = 30). Surveys were used to capture entrepreneurs' business demographics, their confidence in using technology or collaborative tools, and their perceived challenges and opportunities as entrepreneurs in Nigeria and South Sudan.

Qualitative aspects of the data were analysed using thematic analysis and descriptive statistics. Responses were coded into themes which are tabulated in Table 6.2, with examples of entrepreneur's direct references included.

6.8 Results

The entrepreneurs that participated in this research had their business interests spread across different sectors, as shown in Table 6.1. Based on this dataset, the top three sectors for Nigerian female entrepreneurs are Food and Beverage (16.9%), Fashion and Beauty (15.5%) and textile (14.7%). On the other hand, the entrepreneurs from South Sudan have businesses mainly around commerce (53.3%), food and beverages (similar in spread like Nigeria at 16.7%) and then fashion, beauty and tourism (both at 6.7%). Some other sectors that stood out for both Nigerian and south Sudanese entrepreneurs were textile, agriculture, education and training, arts and culture and media and communication.

6.8.1 Distribution of Survey Responses from Participating Female Entrepreneurs

When participating female entrepreneurs were asked to rate their ability in the use of online business development resources, 35.8% of the participants indicated that they could not or did not know how to use the online business development resources (as shown in Fig. 6.1). This constituted 36.7% of the Nigerian participants and 23.3% of the South Sudanese participants. On the other hand, 21.3% of the participants indicated confidence in their ability to use online resources (that they were good at it or very good at it), which constitute 19.7% of the Nigerian participating entrepreneurs and 43.3% of the entrepreneurs from South Sudan.

When asked to rate their ability in the use of online collaborative tools, 23.2% of the participating entrepreneurs indicated that they could not, or did not know how to use collaborative tools, which constituted 24% of the Nigerian participants and 13.3% of the South Sudanese participants (See Fig. 6.2). Also, 29.2% of the participants indicated confidence in their ability to use online resources (that they were good at it or very good at it), which constitute 27.6% of the Nigerian participating entrepreneurs and 50% of the entrepreneurs from South Sudan.

When participating female entrepreneurs were asked to rate their ability in leveraging technology for their businesses (see Fig. 6.3), 32.5% of the participants indicated that they could not or did not know how to

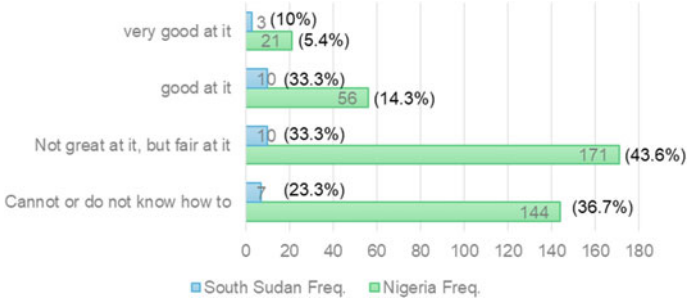

Fig. 6.1 Ability to use of business development resources

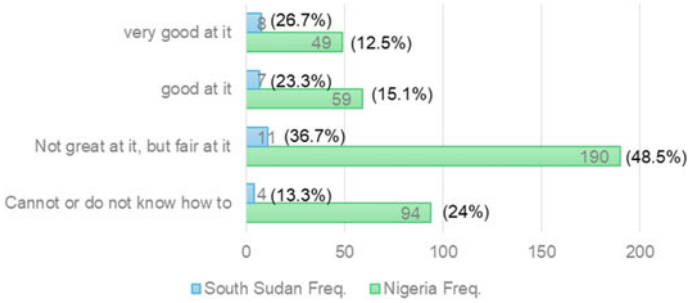

Fig. 6.2 Ability to use of collaborative tools

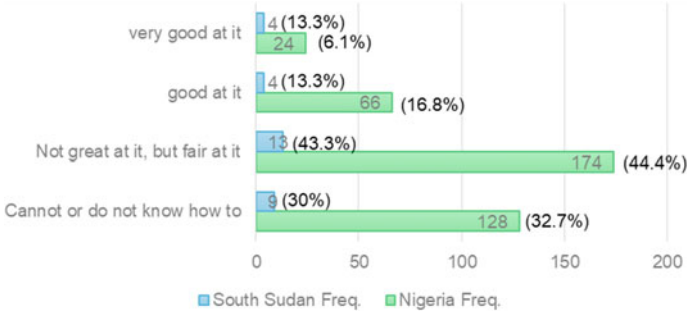

Fig. 6.3 Ability to leverage technology for business

leverage technology for their businesses, which constituted 32.7% of the Nigerian participants and 30% of the South Sudanese participants. On the other hand, 23.2% of the participants indicated confidence in their ability to use online resources (that they were good at it or very good at it), which constitute 22.9% of the participating Nigerian entrepreneurs and 26.6% of the entrepreneurs from South Sudan.

6.8.2 Challenges of Digital Entrepreneurship in Africa

African female entrepreneurs were asked to indicate challenges they faced, particularly with respect to the respective digital economies. Across

country comparisons were carried out, based on the number of mentions for each theme that emerged. Distribution of emerged factors can be seen in Table 6.1.

Majority of the participating female entrepreneurs across both countries identified the lack of capital as the largest major challenge, the lack of or insufficient access to funds, grants and even loans necessary to keep their businesses running and also to enable them to innovate. From Nigeria, 48% of the entrepreneurs mentioned capital as a major concern, while 35% of South Sudanese entrepreneurs did same.

The second top challenge identified by Nigerian entrepreneurs is the environment (11%) due to insurgency, political instability, high taxes, corruption and gender inequality. This is followed by high costs and access to utilities (7%). Lack of access or insufficient supplies of utilities such as electricity, water, access to the internet and high data costs were identified to cause an increase in the transactional costs of running a business.

On the other hand, environment ranked second largest challenge (at 19%) for female entrepreneurs from South Sudan, closely followed by insufficient knowledge of business management processes, technologies, tools and requisite skills.

6.8.3 Opportunities for Digital Entrepreneurship in Africa

Furthermore, entrepreneurs were asked to indicate what they saw as opportunities for the African female entrepreneurs. Table 6.2 shows the distribution of emerged outcome.

The main opportunity identified by Nigerian entrepreneurs is the potential to harness the manpower and skillsets from the large population in Africa (21% of mentions by the entrepreneurs). As of 2021, Africa had a population of over 1.3 billion (worldometers.info), with Nigeria and South Sudan at 210.7 million and 11.3 million, respectively. Other opportunities identified can be derived from the growing economies (18%) and market opportunities in Africa. In joint third are the education/training and Investment opportunities (both at 15%).

Table 6.1 Identified challenges of digital entrepreneurship in Africa

Challenge(s)	Entrepreneurs' description of challenge(s)	Nigeria (Freq.)	%	South Sudan (Freq.)	%
Capital	Lack of capital/funds, finances, access to grants and poor access to loan facilities	234	48	15	35
Tech/digital skills	Technology to improve business, insufficient Tech and digital skills, inability to reach out to customers through digital marketing	10	2	0	0
Resources	Lack of resources or access to resources, difficulty in getting resources at affordable prices/high costs of goods, lack of infrastructure, transportation/logistics issues, lack of facilities and logistics for expansion, lack of collateral to access available funds	16	3.3	3	7
Visibility	How to gain more visibility for their businesses	15	3.1	0	0
Human resources	People	2	0.4	0	0

Challenge(s)	Entrepreneurs' description of challenge(s)	Nigeria (Freq.)	%	South Sudan (Freq.)	%
Environment	High taxes by government, multiple taxation, government policies and incentives to support businesses, insecurity, insurgency and political instability, most things in-country are imported making it hard to set prices, COVID 19 pandemic, less value on local currency, gender inequality, corruption	51	11	8	19
Competition	Price fluctuations, unequal playing ground for local talent, too much competition	11	2.3	0	0
Support	Lack of business development support	14	2.9	4	9.3
Marketing/sales	Insufficient knowledge of marketing, branding	28	5.7	1	2.3
Business management	Insufficient knowledge of business management and financial management, financial literacy, lack of requisite skills for business development	24	4.9	5	12

(continued)

Table 6.1 (continued)

Challenge(s)	Entrepreneurs' description of challenge(s)	Nigeria (Freq.)	%	South Sudan (Freq.)	%
Customers	Ignorance of the public/customers, low patronage, customers patronising imported products or solutions	9	1.8	1	2.3
Mentors	Lack of mentorship or access to mentors	13	2.7	0	0
Network	Insufficient knowledge about useful networks, poor or insufficient network access, difficulty in engaging networks, struggles with partnerships	16	3.3	1	2.3
Utilities	High cost of data, lack of electricity to perform online task, lack of access to basic amenities (power supply, water, etc.), disabilities support	34	7	1	2.3
Capabilities	Lack of requisite skills	8	1.6	2	4.7
Sustainability	Facilities and logistics for expansion and scaling	3	0.6	0	0

Source Authors

Education and training programmes provide avenues to improve digital literacy, offers capacity building programmes and opportunities to reskill and upskill.

For South Sudanese entrepreneurs, the main opportunity identified is the ability to leverage technology and make use of the digital market opportunities (17%). This is followed by education and training opportunities (14%), similar to their Nigerian counterparts. In the joint third, innovation and resilience (10%) stood out with regards to smart logistics and innovative solutions as a means to reduce poverty and manage scarce resources. On the other side, the possibility of harnessing the workforce/human capital (10%) from the population was identified.

6.9 Discussion

This chapter explores digital entrepreneurship, its current state and adoption in Africa. Digital entrepreneurship removes many of the constraints that previously limited the traditional entrepreneur, such as the boundlessness of entrepreneurial activities. Organisations are no longer limited to providing services and products to markets within their vicinity. The boundary of distance is transcended, and opportunities to scale very quickly are provided through digital infrastructure. Digital platforms help entrepreneurs scale, get their goods, products or services to a wider market base and remove previous constraints that made them only sell to their local markets.

The dynamic capabilities theory provided a useful framework to view and react to the dynamic digital skills and capabilities needed for the work of the future in the very disruptive and rapidly changing technological world we are in.

Findings from the study suggest that over a third of the participating female entrepreneurs from both countries indicated their inability to use online business development resources, with another third of the participants indicating basic perceived knowledge of online business development tools. Findings are consistent with other studies (Friederici et al., 2020) on limited technology adoption as a result of a lack of technical know-how. An implication of this finding is the need to provide

Table 6.2 Identified opportunities for digital entrepreneurship in Africa

Opportunities	Entrepreneurs' description of opportunities	Nigeria (Freq.)	%	South Sudan (Freq.)	%
Innovation and resilience	Creativity, smart logistics, conducive environment to create new ideas, ability to manage and utilise resources under harsh conditions, using acquired business ideas to reduce poverty rates	27	14	3	10
Technology	Digital market, leveraging technology, IT development, ecommerce, internet in rural areas and for marketing, investments in science and technology, developing the social power of the internet, using technology to accelerate the African market	23	12	5	17
Agriculture	Agribusiness and market opportunities, resources to feed countries, food processing and packaging, agricultural imports and exports	13	6.9	1	3.4

Opportunities	Entrepreneurs' description of opportunities	Nigeria (Freq.)	%	South Sudan (Freq.)	%
Nascent market/growing economy	Good economy, support being given, market opportunities, free market, markets not oversaturated, untapped and not ventured areas, agribusiness, ecommerce, African businesses led by Africans, investments, opportunities to establish industries, availability of target market, good environment for startups	34	18	8	28
Education and training opportunities	Capacity building programmes and initiatives, skill acquisition, youth training, training on entrepreneurship, mentorship, empowerment, government approach towards readiness of individuals, sponsorships, seminars, Nation-building	29	15	4	14
Investment opportunities	Support from big organisations, financial support, sponsorship, investors, grants/funding by foreign bodies/agencies, soft loans	28	15	2	6.9

(continued)

Table 6.2 (continued)

Opportunities	Entrepreneurs' description of opportunities	Nigeria (Freq.)	%	South Sudan (Freq.)	%
Collaboration opportunities/coalitions	Networking, global businesses, support systems, connections	18	9.5	2	6.9
Large population/cheap labour	Availability of eligible and skilled workforce large markets, labour force, enough population to serve different products, creating job opportunities to the unemployed market, manpower and resources	39	21	3	10
Unfulfilled needs	improve the way of life, meeting populations unfulfilled needs	6	3.2	2	6.9
Reducing unemployment	creating jobs to tackle unemployment, establish industries	9	4.8	3	10
Access to raw materials	availability of resources, enough raw materials	18	9.5	2	6.9

Source Authors

more support, digital skills training and information sessions to female entrepreneurs in Africa, to enable them to gain the required knowledge or information to adopt and leverage digital technologies. It will also help provide a top-down management buy-in for useful digital technologies.

While 72.5% of female entrepreneurs from Nigeria indicated inability or limited ability in using collaborative tools, the percentages were lower for the South Sudanese entrepreneurs at about 50%. These results reinforce the need for upskilling to be able to keep up the skills for the future and enable the entrepreneurs to function effectively.

Over 70% of female entrepreneurs across both countries indicated their inability or limited ability to leverage technology for their businesses. Leveraging technology has been argued as critical for innovation (Leong et al., 2020). Inability to leverage technology would constrain entrepreneurs' ability to build dynamic capabilities that offer competitive advantages and help organisations innovate (Dillon et al., 2020; Teece, 2018).

The challenges and opportunities of digital entrepreneurship were also reviewed in this chapter, in general, and in the context of two African countries (Nigeria and South Sudan) and from a female entrepreneurship perspective.

The need for access to capital seemed to resonate for entrepreneurs from both countries and consistent with current literature (Groza et al., 2020). Recently, active players and organisations within the tech space identified the need to support female entrepreneurs and create interventions that provide access and opportunities to access fund. Other recent avenues include online crowdfunding and grants.

It was also interesting how the need for digital skills did not seem to have many mentions from the Nigerian Entrepreneurs and no mention at all from the South Sudanese entrepreneurs. This is despite the high percentage of entrepreneurs on both sides indicating inability or limited ability in using collaborative tools and leveraging technology. It may indicate the focus of the management team on raising capital for the business. This would still require the teams to develop their organisational knowledge and capabilities to be able to innovate.

This study is not without some limitations. In this chapter, we have reviewed digital entrepreneurship within the context of female

entrepreneurs in Nigeria and South Sudan. While the findings provide insights that could be applicable in other African contexts, further research can include other African countries at different levels of economic developments to explore similarities and differences. Other studies can also explore the pre-effects as well as and post-effects of interventions that improve digital entrepreneurial skills and capabilities.

The study also used only one dimension of digital technologies 'as digital enablers. Future studies could explore digital technologies as digital outcomes of entrepreneurial activities from African digital entrepreneurs. The study provides insights into barriers and opportunities experienced by entrepreneurs in Nigeria and South Sudan, if not built upon by further research (reviewing other contextual nuance or comparisons with other countries); they become just another silo of knowledge. While silos of innovative solutions and products exist, they may work better, scale faster and have more impact if they are part of a larger ecosystem where individual parts, processes, services and solutions complement each other, and collectively improve the digital economies across Africa.

6.10 Conclusion

This chapter contributes to the conversations on contextual evidence of digital entrepreneurship and the literature on digital entrepreneurship from a female perspective. This is relevant because many extant studies focus on more developed economies and a large male representation, with less focus on emerging economies in Africa and under-represented groups.

The chapter highlights the large and uneven digital gaps in Africa, the need for upskilling and reskilling, particularly for female entrepreneurs. Improving digital literacy, building competencies and providing support for digital entrepreneurship, should enable innovation, help reduce inequalities, improve future job or business opportunities for the citizens of African economies and further develop their digital economies.

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