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WOMEN DIGITAL ENTREPRENEURSHIP, TRADE, AND THE NEW EQUATION

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Abstract: The coronavirus (COVID-19) pandemic has fundamentally impacted choices and decisions across households, communities, and economies such that entrepreneurs, especially women, need to continually adapt to survive. Through virtually multi-situated research methods based on the ‘new equation’, this chapter investigates the link between women entrepreneurship, digitalisation, and cross-border trade in Africa. Based on the research findings, digitalisation could serve as an effective enabler in providing many potential benefits to women entrepreneurs in the context of the COVID-19 pandemic as well as the ongoing continental free trade agreement – AfCFTA. Consequently, an increasing number of women enterprises should leverage digital tools to reduce information asymmetry, thereby enhancing women’s entrepreneurial capacities across all socio-economic sectors. As policy makers are attempting to accelerate post-COVID-19 socio-economic recovery for the enterprises to emerge stronger, this study proposes other workable policies towards overcoming digital entrepreneurial challenges among women.

Key words: women; entrepreneurs; digitalisation; cybersecurity; AfCFTA; new equation; Africa

1 Introduction

As the COVID-19 pandemic evolves globally, it accelerates the digitalisation of trade at a pace scarcely imaginable a few years ago. Consequently, lockdowns, movement restrictions and social distancing policies have led to the adoption of digital channels, thereby increasing the share of digital trade on total trade while transforming domestic and cross-border e-commerce. Africa experiences increasing trends in digital access, digital infrastructures, and digital entrepreneurship. Furthermore, the continent’s capacities to transact and manage intra and inter-continental commerce

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improve, and existing and new businesses switch to digital platforms for innovative solutions. In terms of digital entrepreneurship, Africa is experiencing a 'leapfrog', with hundreds of millions of dollars invested in digital hubs.¹ More micro, small and medium enterprises (MSMEs) are transacting online than ever before and are expanding their businesses through digitised value chains. This has empowered local entrepreneurs, especially in Nigeria, Egypt, South Africa and Kenya, which account for 60 per cent of digital entrepreneurial activities in Africa.²

Women-owned and managed MSMEs are being hit hardest by the social and economic perils of the pandemic. They are faced with myriad pandemic-induced challenges, from a substantial decline in the demand for goods and services and a reduction in revenue to the temporary closure of businesses and lack of funds and liquidity. This is all on top of the anxiety about the health and well-being of their employees, their inability to pay employees' salaries and their inability to maintain commitment with their suppliers. For instance, the survey by ITC revealed that about 64 per cent of women entrepreneurs declared that their business operations had been strongly affected by the COVID-19 pandemic, while more than 90 per cent experienced a significant decrease in sales. In addition, as of September 2020, about 60 per cent of women-owned enterprises in Ghana had gone out of business due to the pandemic. The survey by WEConnect International (2020) also reveals that more than 80 per cent of women entrepreneurs in Nigeria reported a significant decrease in sales during the first quarter of 2020.

Given that digitisation remains one of the most viable pathways to economic recovery from the pandemic, women entrepreneurs' path to economic liberation in Africa could be steeper by the increased need to reskill, upskill and go digital. Despite the ubiquitous benefits of digitisation, women entrepreneurs in Africa lag the men in the adoption of digital technologies. The gender digital divide disproportionately affects women, with a gender gap of 37 per cent in mobile internet usage.³ Moreover, Africa has a wide and widening gender gap in digital financial inclusion. World Bank statistics show that North Africa has the largest gender gap, about 18 per cent, in digital financial inclusion, while only 37 per cent of

- 1 N Friederici, M Wahome & M Graham *Digital entrepreneurship in Africa: How a continent is escaping silicon valley's long shadow* (2020).
- 2 UNCTAD 'Digital Economy Report' (2019), https://unctad.org/system/files/official-document/der2019_en.pdf (accessed 5 May 2021).
- 3 W Robert 'Mobile connectivity in sub-Saharan Africa: 4G and 3G connections overtake 2G for the first time' (2020), <https://www.gsma.com/mobilefordevelopment/blog/mobile-connectivity-in-sub-saharan-africa-4g-and-3g-connections-overtake-2g-for-the-first-time/> (accessed 4 May 2021).

women in sub-Saharan Africa have a bank account, compared with 48 per cent of men.⁴ The COVID-19 pandemic is a catalyst for change of this negative narrative, particularly through the new forms of entrepreneurship ushered in by the digital revolution.

Despite the surge in digital entrepreneurship in Africa, several bottlenecks facing the sector include a lack of skilled digital developers, data scientists and designers; a lack of venture capital; and poor access to finance. This limits the capacity of digital entrepreneurs to grow exponentially and compete internationally. Thus, this study leverages the current research gap to advance the frontiers of knowledge on women's digital entrepreneurship and cross-border trade within the context of the African Continental Free Trade Area (AfCFTA). As negotiations and implementations of the AfCFTA agreement intensify, a clear understanding of its potential impact on women will contribute to more equitable gains for women and their households.

Based on this background, this study's aims are articulated as follows:

- examining the digital entrepreneurial challenges faced by women based on gender, free trade agreement and digitalisation diagnostics in Africa;
- discussing the conceptual framework on how the digital divide, COVID-19, AfCFTA, and gender equity contribute to across-the-border entrepreneurial policies in Africa;
- leveraging the 'new equation' to recommend legal and trade innovation policy interventions for fostering invisible digital cross-border trade among women entrepreneurs in Africa.

This study will be organised based on this outline: In addition to the first part, which introduces the research and its objectives, the second part discusses the research methodology. The third part focuses on a brief review of the literature as well as the study background. Part 4 presents the systemic influencers and challenges of women's digital entrepreneurship, while the final part is the conclusion, policy recommendation and areas of future research.

2 Methodology

This chapter employs a combination of primary and secondary data. It adopts a mixed methodology comprising desk reviews and quantitative

4 H Morsy 'Access to finance: Why aren't women leaning in?' (2020) *Finance and Development* 52-53.

analysis of secondary data, which is complemented by insightful data from key informant interviews. The review of relevant literature on gender, trade and digitalisation was embarked upon to identify the knowledge gap and rightly situate our study to fill the identified gap. The key informant interview involved subject specialists and well-informed trade experts, which were selected based on their scholarly work and affiliations. Participation in the focus group discussion was voluntary, and an ethical protocol was designed to protect the confidentiality of the key informants. A carefully-targeted number of five focus group discussions were conducted with 73 participants. The participants spread across Nigeria, Ghana, Senegal, Tanzania and Madagascar. The focus group discussion was standardised in terms of group composition, such as gender, state and non-state actors, academia, civil society organisations (CSOs) and non-governmental organisations (NGOs), recruitment strategy, hybrid forums, such as face-to-face, phone calls and online on Zoom, and moderation style. Content and ethnographic analysis were used to analyse the data. Based on this background, a novel paradigm – the new equation – was deployed to provide novel perspectives for fostering gendered entrepreneurship in the face of increasing regional and global digitalisation.

In addition, multiple data sources were adopted in this study to analyse the impact of COVID-19-related business challenges faced by women entrepreneurs in Africa. The study obtained and analysed data from Mobile Accord Inc (GeoPoll), which is a telephone survey focused on the ongoing effect of COVID-19 in sub-Saharan Africa. The study was conducted by GeoPoll⁵ in March 2021 in Côte d'Ivoire, the Democratic Republic of the Congo (DRC), Kenya, Mozambique, Nigeria and South Africa. The sample size is nationally representative by age, gender and location; our analysis focused on the gender dimension, particularly the effects on women. In addition, we did a case study analysis of Nigeria using primary data from our field survey and data from WeConnect International.⁶

3 Insights on gender, free trade agreement and digitalisation in Africa

There is a growing inquiry into the pathways by which gender is affected by trade policies and digital entrepreneurship.⁷ This is based on the

5 <https://www.geopoll.com/> (accessed 1 March 2021)

6 <https://www.windstreamenterprise.com/we-connect/>. (accessed 14 April 2021)

7 T Besedeš, SH Lee & T Yang 'Trade liberalisation and gender gaps in local labour market outcomes: Dimensions of adjustment in the United States' (2021) 183 *Journal of Economic Behaviour and Organisation* 574-588.

understanding that trade is not gender-neutral,⁸ meaning that men and women may be affected in different ways by trade policies.⁹

Based on evidence from trade liberalisation between China and Brazil, Benguria and Ederington¹⁰ found that trade liberalisation affects gender inequality through employment, as trade increases the share of female workers in higher-paying jobs in Brazil. Kis-Katos, Pieters and Sparrow¹¹ analysed the gender-specific effects of trade liberalisation on labour employment in Indonesia. The authors show that female employment increased in regions that were more exposed to input tariff reductions, and this led to a relative growth in women-intensive enterprises. However, some studies have shown that trade liberalisation can widen the gender wage gap if women are disadvantaged in terms of capital and skills.¹² Pieters argued that the pro-competitive effects of trade liberalisation could induce firms' investment in digitalisation. Such digital upgrading could improve employment opportunities for women as jobs become less physically demanding.

Despite the fast-growing digital connectivity in Africa, particularly mobile internet connectivity, the adoption of digital technologies has not been equitable across the gender and urban-rural divide. Moreover, meaningful usage and not just connectivity remain the bane of digitisation in sub-Saharan Africa. In Southern Africa, for instance, the share of the population that lives within coverage zones of a mobile broadband network but remains unconnected to mobile internet is 49 per cent, while the share is 46 per cent in Western Africa and 36 per cent in Central Africa.¹³ This usage gap is particularly high, about 60 per cent, in Eastern Africa despite the low coverage gap of 20 per cent. Women are disproportionately affected by this coverage gap, with a gender gap of 37 per cent in mobile internet usage.

8 J Pieters 'Trade liberalisation and gender inequality: Can free-trade policies help to reduce gender inequalities in employment and wages?' (2015) *IZA: Journal of Labour and Development* 114.

9 S Ben Yahmed & P Bombarda 'Gender, informal employment and trade liberalisation in Mexico' (2020) 34 *The World Bank Economic Review* 259-283.

10 F Benguria & J Ederington 'Decomposing the effect of trade on the gender wage gap' in SSRN 2907094 <https://dx.doi.org/10.2139/ssrn.2907094> (accessed 27 April 2020).

11 K Kis-Katos, J Pieters & R Sparrow 'Globalisation and social change: Gender-specific effects of trade liberalisation in Indonesia' (2018) 66 *IMF Economic Review* 763-793.

12 EA Bøler, B Javorcik & KH Ulltveit-Moe 'Working across time zones: Exporters and the gender wage gap' (2018) 111 *Journal of International Economics* 122-133.

13 Robert (n 3).

Women often have less access to digital technologies than boys and men. Global statistics show that internet access rates are higher for men than for women.¹⁴ The likelihood of men having access to the internet is 21 per cent higher than the likelihood of women having access to the internet. This likelihood is about 52 per cent in the least-developed countries.¹⁵ A recent report by GSMA shows that sub-Saharan Africa has a gender digital divide of 37 per cent in mobile internet use and a gender gap of 13 per cent in mobile phone ownership. This implies that sub-Saharan Africa has one of the widest gender digital divides in the world except for the Asia region.

Moreover, girls in Africa are five times less likely to choose a career in technology, and women are also less likely to occupy leadership positions in the ICT industry.¹⁶ Africa also has a wide and widening gender gap in digital financial inclusion. World Bank statistics reveal that North Africa has the largest gender gap, about 18 per cent, in digital financial inclusion, while only 37 per cent of women in sub-Saharan Africa have a bank account, compared with 48 per cent of men. Women are faced with peculiar challenges that contribute to the widening gender digital divide in Africa.

The survey by GSMA reveals many of the challenges that women identified as limiting factors to their digital empowerment. Some of the challenges identified from selected African countries are presented in Table 1. Table 1 shows that the top barriers to mobile internet use among women in Africa centre around affordability, literacy and skills, perceived relevance, concerns about safety and security, and the challenge of accessibility. A closer look at these barriers shows that affordability remains the major barrier to accessing the internet by women entrepreneurs in Africa, particularly in Uganda.

Although it has been projected that the adoption of smartphones in sub-Saharan Africa will grow from 44 per cent in 2019 to 65 per cent of total connections in 2025 'due to the increasing number of low-cost devices and financing schemes', such growth may be male-driven and

14 UN 'Taking stock: Data and evidence on gender digital equality' (2019), <https://www.empowerwomen.org/en/resources/documents/2019/10/taking-stock-data-and-evidence-on-gender-equality-in-digital-access-skills-and-leadership-30202054?lang=en> (accessed 20 March 2021).

15 Web Foundation 'Why the web needs to work for women and girls' (2020), <https://webfoundation.org/2020/03/web-birthday-31/> (accessed 15 April 2021).

16 M Chisiza 'No woman left behind: The gender digital divide' (2017) Analysis, South Africa Institute of International Affairs (SAIIA), <http://www.saiia.org.za/opinion-analysis/no-woman-left-behind-the-gender-digital-divide> (accessed 3 April 2021).

gender-imbalanced.¹⁷ The affordability of smartphones remains one of the topmost barriers to internet access in Uganda, and affordability is also a major challenge to internet uptake and use in Kenya, Nigeria, South Africa and Rwanda.¹⁸ Moreover, Table 1 illustrates that many of the women interviewed do not know how to access the internet on a mobile phone, while 36 per cent of the respondents in Senegal identified reading/writing difficulties as a top barrier to internet adoption. This finding is in line with the assertion that literacy rates in Africa are significantly below the world average.¹⁹

In addition, some of the women are concerned about exposure to strangers on the internet, while others are worried about the security of their information on the internet. Challenges of network coverage, family approval and slow internet connectivity were further identified as accessibility barriers to the internet. The COVID-19 pandemic has re-echoed these challenges faced by women in access to the internet and unveiled the vulnerabilities of lack of digital entrepreneurial skills. Consequently, the lockdown measures meant the total closure of businesses for many women-owned or managed enterprises.

4 Results and discussions

4.1 Impact of COVID-19 pandemic-induced challenges on SMEs owned or managed by women

4.1.1 *Decreased income*

The COVID-19 pandemic and the economic shutdown due to preventive measures led to a significant decrease in the income of women entrepreneurs, as evidenced by 44 per cent of the respondents (see Figure 1). About 20 per cent of the respondents reported that their income decreased somewhat, while only 9 per cent experienced a little increase in their income. Most of these income losses were due to business closures or experiencing reduced operating hours. However, these income losses were not experienced equally. Women entrepreneurs operating in Kenya had the highest rates of income loss compared to other selected African countries, as reflected in Table 2.

17 RM Singh & J Said 'Harnessing digital technology for Africa's economic recovery and transformation' (2020) *Tony Blair Institute for Global Change*.

18 A Gilward 'Internet use barriers and user strategies: Perspectives from Kenya, Nigeria, South Africa and Rwanda' (2017) *New York: Mozilla Foundation*.

19 J Tasamba 'African countries push for higher literacy' (2019), <https://www.aa.com.tr/en/africa/african-countries-push-for-higher-literacy/1618099> (accessed 1 June 2021).

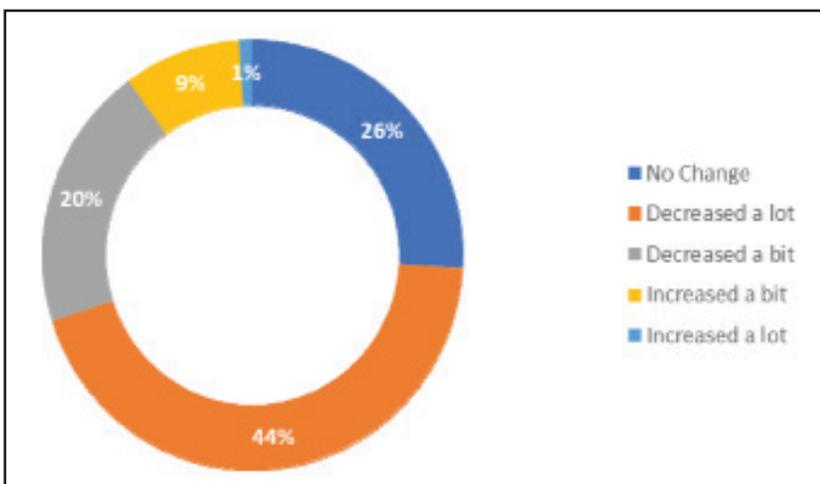
Table 1: Top barriers to mobile internet use

ACCESSIBILITY	Slow connection/ cannot do what I want	1%	0%	4%	4%	1%	1%	3%
	The family does	6%	1%	0%	3%	1%	1%	1%
	Network coverage	4%	4%	0%	1%	7%	4%	2%
SAFETY AND SECURITY	Information security	8%	1%	3%	4%	3%	11%	2%
	Strangers contacting me	1%	6%	2%	1%	4%	5%	4%
	Harmful content (self/ family)	3%	5%	4%	2%	5%	7%	2%
RELEVANCE	Insufficient content in the	1%	3%	0%	1%	2%	1%	3%
	The internet is not relevant to me	9%	11%	1%	11%	0%	16%	3%
LITERACY AND SKILLS	Reading/ writing difficulties	21%	8%	14%	27%	36%	1%	9%
	Do not know how to access the internet on a mobile	2%	9%	17%	5%	3%	5%	2%
AFFORDABILITY	Data Cost	0%	3%	4%	5%	1%	17%	7%
	Handset Cost	24%	30%	28%	23%	18%	15%	42%
	Country	Algeria	Kenya	Mozambique	Nigeria	Senegal	South Africa	Uganda

Source: GSMA

Similar findings by United Nations (UN)²⁰ and International Labour Organisation (ILO)²¹ reveal that COVID-19 led to ‘massive’ income and productivity losses. Our findings also concur with the findings of Oxfam international,²² namely, that the COVID-19 pandemic is having a harsher income impact on women.

Figure 1: Effect on income, aggregate



Source: Authors computation

Table 2: Effects of COVID-19 on income across countries

	Democratic Republic of the Congo (DRC)	Ivory Coast (Côte d'Ivoire)	Kenya	Mozambique	Nigeria	South Africa	Total
No change	6	5	2	3	4	6	26
Decreased a lot	6	7	11	6	7	7	44
Decreased a bit	5	4	2	2	4	3	20

20 <https://news.un.org/en/story/2021/01/1082852#:~:text=Job%20losses%20or%20reduced%20working,the%202009%20global%20financial%20crisis>. (accessed 20 April 2021).

21 https://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/documents/briefingnote/wcms_767028.pdf (accessed 20 April 2021)

22 Oxfam International 'COVID-19 cost women globally over \$800 billion in lost income in one year' (2021), <https://www.oxfam.org/en/press-releases/covid-19-cost-women-globally-over-800-billion-lost-income-one-year> (accessed 28 May 2021).

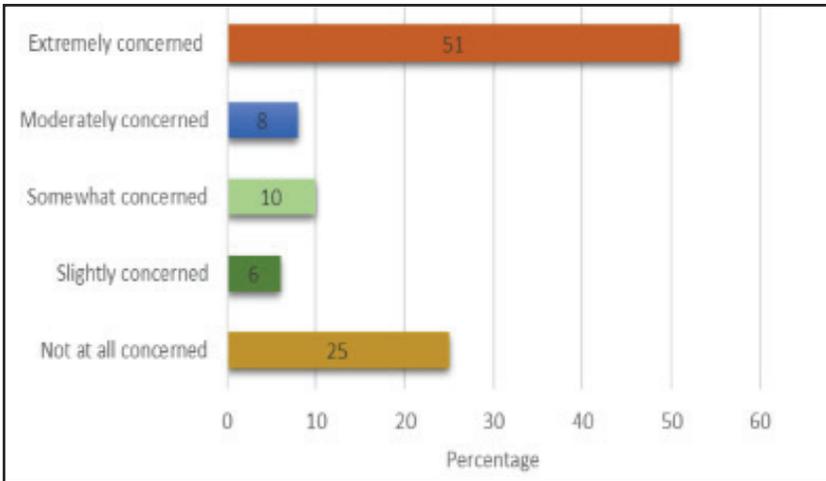
Increased a bit	3	1	1	1	2	1	9
Increased a lot	0	0	0	1	0	0	1

Source: Authors computation

4.1.2 Heightened financial fragility

The surveyed women entrepreneurs also expressed concerns over their financial fragility. Figure 2 shows that the majority, about 51 per cent, of the women business owners/managers ranked their ability to pay basic business expenses as an extreme concern. In addition, 8 per cent and 10 per cent of the respondents expressed moderate and somewhat concerns, respectively, over their financial fragility. These numbers could be a disquieting sign that women in business in Africa may have a harder time recovering from the COVID-19-induced economic shock.

Figure 2: Concern on paying expenses



Source: Authors computation

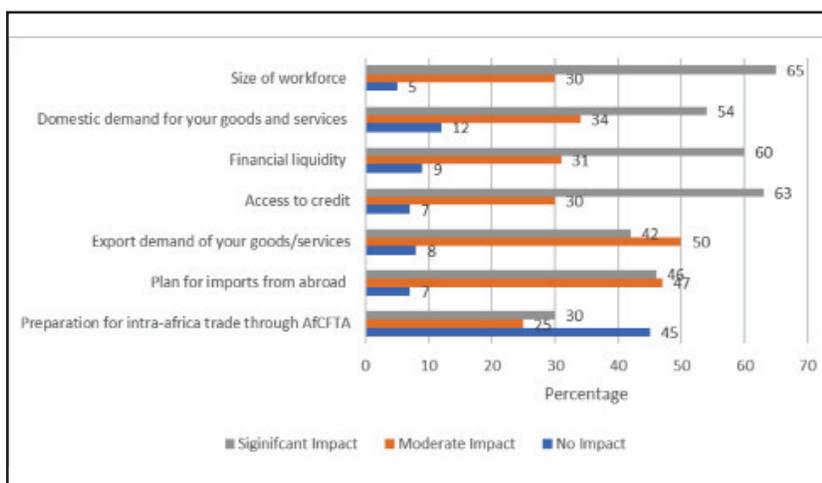
4.1.3 Exacerbated pre-existing challenges and preparations for AfCFTA

The rapid spread of COVID-19 and the measures taken by global and regional governments to contain it have exacerbated pre-existing challenges faced by women-owned/managed enterprises, with a consequent effect on their preparations for AfCFTA. Results of our analysis (see Figure 3) show that the COVID-19 pandemic has impacted women-owned/managed businesses by reducing domestic and export demand for their goods and

services. About 54 per cent of the respondents experienced a significant domestic demand shock, while about 42 per cent of the respondents experienced a significant export demand shock.

Moreover, most of the respondents, about 60 per cent, have experienced a significant impact of the pandemic on their financial liquidity. This suggests that many of the women business owners/managers may have experienced a sharp decline in their firm's cash flow, which could consequently push solvent but liquid businesses into bankruptcy.

Figure 3: Effect on pre-existing challenges and on preparation for AfCFTA



Source: Authors computation

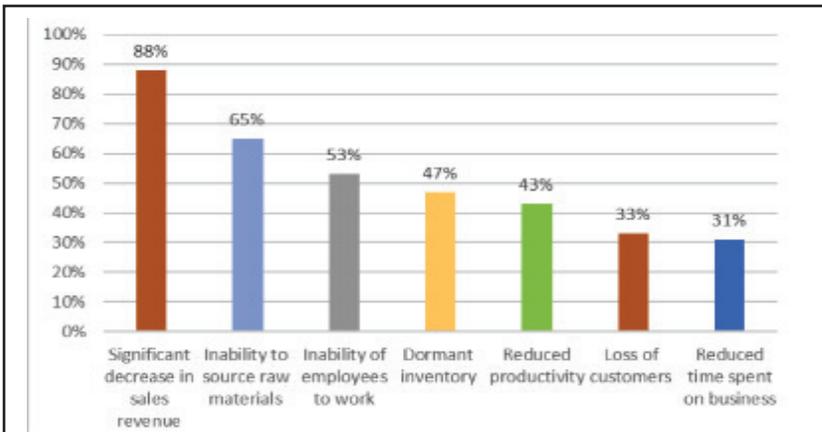
4.1.4 Effect on business activities

Given that the COVID-19 pandemic resulted in an economic lockdown and social distancing, it consequently undermined women-owned or managed SMEs' capacities to operate and generate revenues, among other challenges faced. Figure 4 reveals that most of the SMEs, about 88 per cent, experienced a significant decrease in sales revenue; the majority were unable to source raw materials; and many of their employees could not work productively. In addition, 47 per cent of the SMEs had dormant inventory, which implies tied-up capital and loss of opportunity to invest. Reduced productivity is another setback experienced by about 43 per cent of the entrepreneurs, while 33 per cent of the respondents reported the

loss of customers, and 31 per cent experienced reduced time spent on business. Our findings are in line with many empirical findings.^{23,24,25}

Our findings concur with the findings of Connor and others,²⁶ which show that the COVID-19 pandemic is already exacerbating women’s caregiver responsibilities, thereby reducing the time committed to their enterprises. Similar findings by Foucault and Galasso²⁷ show that women stopped working and trading more than men during the pandemic in various countries. Our findings imply that the spread of the COVID-19 pandemic had a devastating impact on women entrepreneurs, which has led to heightened concern among women business owners or managers. Such impacts risk rolling back the meagre gains made in women’s entrepreneurship participation, limiting women’s economic empowerment and deepening gender inequality and poverty.

Figure 4: Effects on business activities



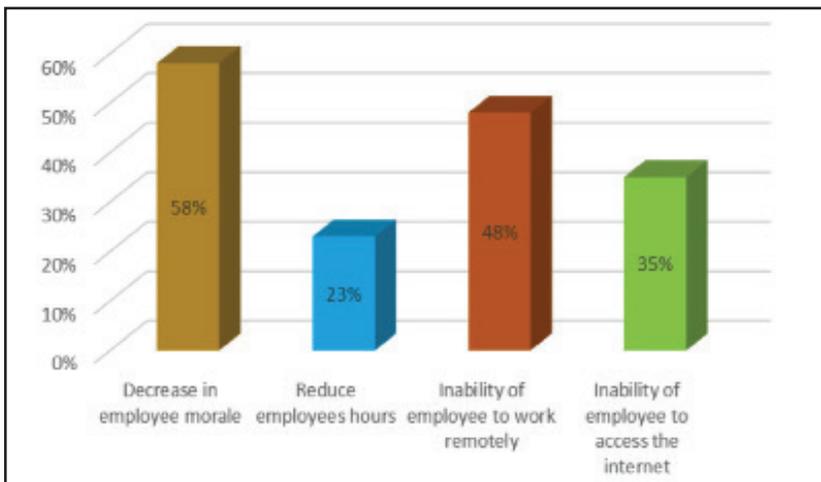
Source: Authors computation

- 23 G Odularu ‘Building businesses back better amid COVID-19 pandemic in Africa’ (2020) KIEP Visiting Scholars’ Opinion Paper.
- 24 McKinsey and Company ‘Seven charts that show COVID-19’s impact on women’s employment’ (2021), <https://www.mckinsey.com/featured-insights/diversity-and-inclusion/seven-charts-that-show-covid-19s-impact-on-womens-employment> (accessed 27 May 2021).
- 25 UN Women ‘COVID-19 and its economic toll on women: The story behind the numbers’ (2020), <https://www.unwomen.org/en/news/stories/2020/9/feature-covid-19-economic-impacts-on-women> (accessed 27 May 2021).
- 26 J Connor and others ‘Health risks and outcomes that disproportionately affect women during the COVID-19 pandemic: A review’ (2020) *Social Science and Medicine* 113364.
- 27 M Foucault & V Galasso ‘Working after COVID-19: Cross-country evidence from real-time survey data (No 9)’ (2020) Sciences Po.

4.1.5 Impact on employees

The survey results presented in Figure 5 further show that employees of women-owned or managed small businesses were also affected by the COVID-19 pandemic. A majority, about 58 per cent of women business owners or managers, reported that the pandemic led to a reduction in the morale of their employees, while employees of 48 per cent of these women could not work remotely. The pandemic has highlighted the inability of employees to access the internet and work remotely. Consequently, the trade and revenue of these women-owned/managed businesses are disrupted, and their employees risk job losses.

Figure 5 Impact on employees



Source: Authors computation

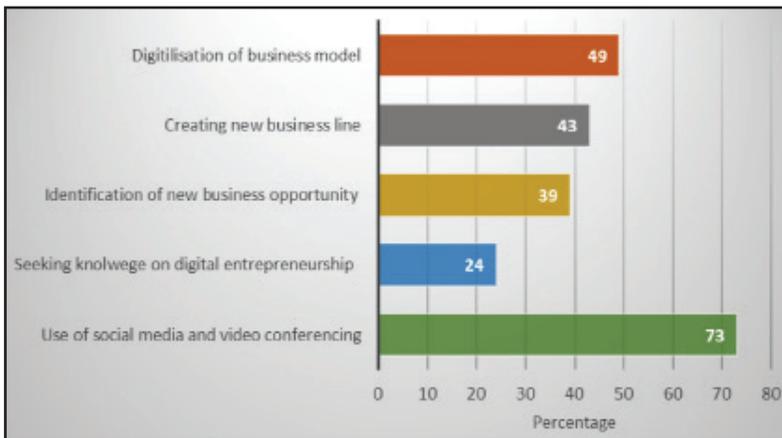
4.1.6 Mitigation measures

The COVID-19 pandemic is compelling women business owners/managers to rethink their businesses where the traditional physical presence and the in-person setting are the norms. Consequently, many women entrepreneurs are beginning to realise the need to be innovative and digitalise their business operations with online ordering, payment and delivering their products and services. Figure 6 shows that 49 per cent of the respondents have adopted digital entrepreneurship by digitalising their business model. Digitalisation is key in keeping these enterprises afloat and surviving the economic shock induced by the pandemic. In addition, 43 per cent of the women business owners/managers are diversifying their enterprises and creating new business lines in response to customers'

needs and demands, while 39 per cent have been able to identify new business opportunities amid the pandemic. The analysis further reveals that about 24 per cent of the respondents realised their lack of knowledge about digital entrepreneurship and have begun to search for such pertinent knowledge to remodel their businesses and cushion the effects of the pandemic.

Moreover, Figure 6 shows that social media and video conferencing have taken a key role in the digital transition of women-owned or managed businesses in Africa. This suggests that many women entrepreneurs are applying social media to mitigate the adverse effects of the pandemic on their businesses. It also suggests that more women find the social networking platform appealing to transact their businesses. Our findings concur with that of Salam, Imtiaz and Burhan,²⁸ which reported increased usage of social media marketing among SMEs during the COVID-19 crisis. Our findings also suggest that the COVID-19 pandemic provides an opportunity for women-owned or managed businesses to accelerate their digitalisation efforts by using simple and more advanced digital technologies.

Figure 6: Mitigation measures



Source: Authors computation

28 MT Salam, H Imtiaz & M Burhan ‘The perceptions of SME retailers towards the usage of social media marketing amid COVID-19 crisis’ (2021) *Journal of Entrepreneurship in Emerging Economies*. [13(4), 588-605.]

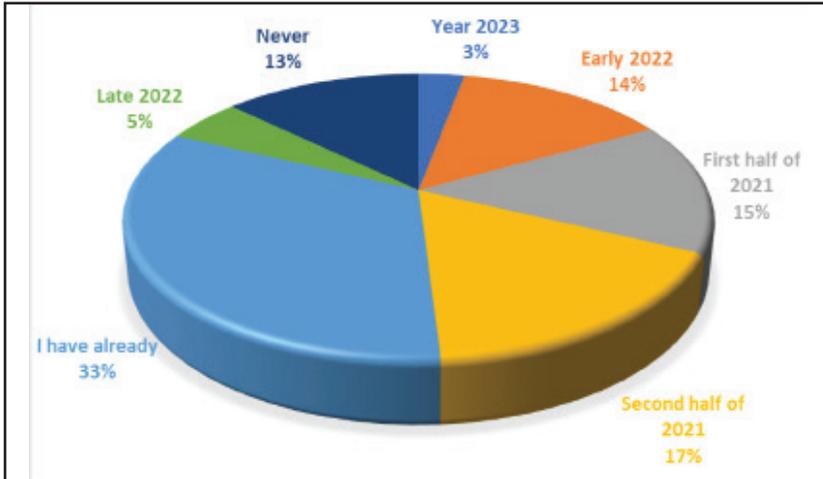
4.1.7 *Return to normal*

The survey by GeoPoll elicited women business owners' or managers' beliefs about the future of their businesses, allowing us to analyse their expectations on business recovery. Figure 7 shows that only 33 per cent of the respondents have experienced a return to normal in their businesses, while 15 per cent expect their businesses to return to normal by the first half of 2021. However, 14 per cent of the respondents noted their businesses would not return to normal until early 2022 while, unfortunately, 13 per cent of the respondents reported that their businesses would never recover from the impact of the pandemic. This implies that a number of women business owners will not be able to re-engineer their businesses and navigate through the pandemic.

The severe effects of the COVID-19 pandemic on women-owned or managed enterprises and the uncertainty surrounding the recovery raise fears that a large number of women in trade, particularly small-scale cross-border traders, would fail. Given the clear gendered implications of the COVID-19 crisis, our findings indicate the need for regional and national COVID-19 recovery efforts and policy response to prioritise and reach the most vulnerable women business owners/managers.

Moreover, given that digitalisation is critical to the 'new normal' and directly linked to improvement in business performance, African regional and national governments need to assist entrepreneurs, particularly women entrepreneurs, in overcoming hurdles in their digitalisation journey so that they can maximise the benefits of digitalisation. Given this premise, the AfCFTA provides an avenue to pursue a gender-sensitive post-COVID-19 economic recovery in Africa.

Figure 7: Expected period of business returning to normal.



Source: Authors computation

4.2 Gender inclusion in free trade agreement: The African case (AfCFTA)

Gender-related provisions such as gender mainstreaming are increasingly becoming a norm in regional trade agreements. Many African regional economic communities (RECs) have expressed gender considerations in their trade agreements, with about 20 different gender-related provisions found in their establishing treaty. For example, the East Africa Community (EAC) treaty, which entered into force on 7 July 2000, acknowledges that women play a key role in the economic, social, and political development of the region. Article 5(e) of the Treaty articulates issues of mainstreaming gender into all EAC legislation, policies, programmes and projects, while articles 121 and 122 emphasise the role of women in socio-economic development in the partner states. The EAC regional Gender and Community Development Strategic Plan and the 4th EAC Development Strategy (2011-2016) provide guidelines for mainstreaming gender in EAC policies and programmes. Member states are mandated by the treaty to enact, coordinate and harmonise appropriate policies that are key to the promotion of equal opportunities and gender equality.²⁹ The parties are also required to frame holistic policies that improve women’s economic

29 UNCTAD ‘Trade and gender nexus in the context of regional integration: A comparative assessment of the East African Community (EAC) and the Southern Common Market (MERCOSUR)’(2019).

and social conditions within the economic community. Other efforts of EAC at mainstreaming gender in regional development include a draft regional strategy on promoting women in socio-economic development and women in business.

Similarly, the Southern African Development Community (SADC) treaty commits its member states to promote policies and laws that have provisions for the empowerment of women and give equal opportunities to women in terms of access to, control of, and benefit from, productive resources. This SADC commitment not to discriminate against anyone on the ground of gender, among other grounds, is documented in SADC treaty article 6(2). The SADC Protocol on Gender and Development was signed and adopted in 2008, entered into force in 2013, and was revised in 2016. The protocol aims to integrate and mainstream gender issues into the SADC Programme of Action and Community Building initiatives in the pursuit of sustainable development of the SADC region. The Revised SADC Protocol on Gender and Development aligns with SDG 5 and provides for the empowerment of women, the elimination of discrimination against women, the elimination of gender inequalities and marginalisation of women, and the promotion of gender equality and equity through gender-responsive policies.

Gender mainstreaming also features in the Economic Community of West African States (ECOWAS) Treaty. Specifically, article 63 of the ECOWAS Revised Treaty empowers the member states to legislate, harmonise, coordinate, and establish appropriate policies and mechanisms for the economic empowerment of women and enhance the social and cultural conditions of women.³⁰ In addition, the 2015 Supplementary Act on Equality of Rights between Women and Men for Sustainable Development in the ECOWAS mandates all ECOWAS member states to promote gender equality and equity in all sectors through appropriate policy and legislative formulation. Other gender-related provisions in ECOWAS include the ECOWAS policy for gender mainstreaming in energy access; the ECOWAS women, peace and security plan of action; and the ECOWAS Gender and Elections Strategic Framework and Action plan. The gender mainstreaming efforts of the African RECs show that Africa considers the interests of men and women with a view to achieving gender equality through regional accords.

30 ECOWAS 'ECOWAS plan of action on gender and trade 2015' (2015), https://www.ccdg.ecowas.int/wp-content/uploads/Plan-of-Action_Gender-and-Trade.pdf (accessed 29 April 2021).

Unlike the African RECs with many gender-related provisions in their treaties, the AfCFTA has only two gender-related provisions. One gender-related provision is stipulated in its Preamble, and another is stipulated in its list of general objectives. Although the AfCFTA framework agreement does not have a specific chapter on gender and trade, it does reference the importance of gender equality in the light of intra-African trade. Specifically, article 3(e) states ‘promote and attain sustainable and inclusive socio-economic development, gender equality and structural transformation of the State Parties’. Article 4 of the Protocol on the Free Movement of Persons provides that ‘States Parties shall not discriminate against nationals of another Member State entering, residing, or established in their territory, on the basis of their ... sex’.

In addition, in article 27(2)(d) of the Protocol on Trade in Services, state parties are required to ‘improve the export of both formal and informal service suppliers’ with particular attention to micro, small and medium-sized, women and youth service suppliers. This implies that state parties are required to improve the export capacity of women entrepreneurs and ensure that women are not left behind in the process of African trade liberalisation.

The discretion of the states is central to the implementation of these gender-related provisions in AfCFTA.³¹ In 2019 the United Nations Economic Commission for Africa (UNECA) gave support to 15 African countries to develop national AfCFTA implementation strategies. Through this process, states are expected to develop gender-responsive policies and context-specific interventions to promote women’s empowerment in the AfCFTA. Moreover, it is expected that parties will address gender-specific constraints, particularly in agriculture, manufacturing, and services, and identify potential economic opportunities to catalyse women’s empowerment in the AfCFTA.³² Advancing gender equality is key to achieving the unparalleled opportunities inherent in the AfCFTA.

4.3 Can AfCFTA bridge the gender digital entrepreneurship divide?

In order to formally assess Africa’s preparedness for AfCFTA and the current digital entrepreneurship among women, this study adopts the

31 Laperle_Forget Gender-responsiveness in trade agreements – How does the AfCFTA fare? (2021), <https://www.tralac.org/blog/article/15141-gender-responsiveness-in-trade-agreements-how-does-the-afcfta-fare.html> (accessed 28 April 2021).

32 B Nadira ‘A “business unusual” approach for gender equality under the AfCFTA’ (2020) 9 *Great Insights*. [1-8 page number]

framework of political, economic, social, technology, ecological and legal (PESTEL) analysis. The threats, as captured in Figure 8, have been further aggravated by the broad socio-economic and political impact of the COVID-19 pandemic. However, investments in new technologies enable remote working, enhance women's digital entrepreneurship capacities, and foster green finance for women enterprises within the global trade agreements (WTO) as well as the AfCFTA. Key informant interviews (KIIs) were conducted with a trade expert panel to triangulate our findings and strengthen the reliability of our results. The expert panel engaged in the focus group discussions included African trade experts, past and present leaders of business membership organisations (BMOs) across Africa, erudite and well-published scholars, and state and non-state actors. For instance, in the words of a key informant, Dr John Isemede, an international trade expert and a former director-general of the Nigerian Association of Chamber of Commerce Industry Mines and Agriculture (NACCIMA), '[g]iven the infrastructural decadence in Africa and Nigeria in particular, we are not prepared for AfCFTA. Nigeria ports are not configured to handle exports. We do not have silos or cold rooms. As such, we cannot even export vegetables.'

Figure 8: PESTEL analysis for digital entrepreneurship within invisible cross-border trade

OPPORTUNITIES		THREATS
Global trade agreements (WTO) and AfCFTA with well-mainstreamed women's role	P	Major continental antitrust and regulatory reforms
Digital entrepreneurship national policies, programmes, cooperatives, and initiatives for women	E	Fragile and landlocked opportunities.
Highly trained, educated, and skilled women workforce	S	Workforce disruption due to lack of diversity
Innovative, mobile, and new technologies (cloud, AI, Machine Learning), research and infrastructure	T	Digital substitution, e.g., Robots
Green Finance and Climate Smart Economies	E	Social media and protest pressure
Trust, reputation, and blockchain for contract enforcement and implementation	L	Information Asymmetry in women-owned enterprises.

Source: Authors computation

Moreover, African women face many peculiar barriers to their participation in regional trade and digital entrepreneurship. These barriers include resource constraints, regulatory barriers, cultural biases, and information asymmetry. These prevailing barriers may prevent women from fully benefiting from opportunities offered by AfCFTA.

4.3.1 Resource constraint

Many intrahousehold resource allocation practices in Africa restrict women's right to own economic resources and assets, access to new technology, education and training, and power over economic decision making that impact their productivity and well-being. Prevailing low access to productive resources experienced by women in many African countries tends to limit their participation in regional trade and digital entrepreneurship. For instance, in Uganda, women make up 80 per cent of the agricultural labour force; only seven per cent of these women own their land and sell only 11 per cent of the cash crops.³³ Also, in Burundi, as in many other African countries, women do not have a right to land inheritance. Privately-owned non-state land is governed by customary law that transfers land rights from father to son, meaning that women and girls are excluded from land ownership. Although Burundian women produce the bulk of food crops, they do not have the decision-making power over the use of the harvested food crops.³⁴

In Africa, generally, women contribute 60 to 80 per cent of the labour force in agriculture, which is the most vital economic sector of sub-Saharan Africa, but own less than 2 per cent of agricultural land.³⁵ Empirical evidence suggests that when women have control over a larger share of economic resources, agricultural productivity rises.³⁶ This finding is substantiated by trade experts engaged in the focus group discussion. In the words of a key informant, a trade expert and BMO leader from Nigeria, 'women suffer from lack of access to finance and digital solutions that address inefficiencies.

33 C Klaa 'Role of African women in development and economic life: Reality and challenges' (2020) 4 *International Journal of Inspiration and Resilience Economy* 1-9.

34 N Nintunze & S Bigirimana 'Analysis of cultural barriers to women's economic empowerment in Burundi' (2021) *Search for Common Ground/USAID*.

35 Klaa (n 33).

36 M Hallward-Driemeier & T Hasan *Empowering women: Legal rights and economic opportunities in Africa* (World Bank Publications 2012).

Based on evidence from the changes in Ethiopian laws in 2000, Hallward-Driemeier and Hasan³⁷ also noted that positive changes in family law can strengthen women's empowerment. As opined by a trade expert, past president of a BMO in Nigeria, in the key informant interview, 'Africa, particularly women, are not adequately prepared for AfCFTA ... We are in a country with foreign policy but no foreign policy strategy. Our foreign policy is not tied to trade.' Another key informant from Ghana added that 'women are disproportionately marginalised in access to economic resources in Africa'. The lack of ownership and control over economic resources, such as land, credit, capital, and other means of production, is a clear indicator of the abuse of women's social and economic rights in Africa. In addition to these barriers, African women are also severely restricted in their participation in trade and digital entrepreneurship by many regulatory barriers and cultural biases that do not serve the interests of women.

4.3.2 Cultural biases

African women face discrimination in all social and economic spheres due to cultural biases and social norms that are entrenched within African cultural ideologies. Dominant cultural practices in Africa, such as the patriarchal family system and child marriages, hamper women's economic empowerment. For instance, the patriarchal family system dominant in Northern Nigeria restricts the participation of women in conflict resolutions and peace dialogues, economic empowerment, and access to education. A common saying in Burundi – *Umurundikazi n'uwoguteka* – implies that the Burundian woman is designed for cooking. Women entrepreneurs and traders that travel far from their households for business activities are perceived as loose and immoral.³⁸ In addition, certain myths in many African rural communities dictate that certain activities are reserved for men, thereby infringing on the rights of women, and promoting inequality as well as discrimination based on stereotypes.

4.3.3 Information asymmetry

The lack of accurate, reliable and up-to-date information is a major obstacle to the participation of African women in regional trade and digital entrepreneurship. This was the submission of a trade expert panel from Nigeria, Ghana, Senegal, Tanzania and Madagascar interviewed

37 N Nintunze & S Bigirimana 'Analysis of cultural barriers to women's economic empowerment in Burundi' (2021) *Search for Common Ground/USAID*.

38 N Nintunze & S Bigirimana 'Analysis of cultural barriers to women's economic empowerment in Burundi' (2021) *Search for Common Ground/USAID*.

in the focus group discussions. The trade experts concluded that the pace of participation of women in the intra-Africa trade is hampered by information asymmetry. This includes a lack of accurate and timely information on prevailing market prices, commodity and trade statistics, and weather updates. Linguistic, cultural and spatial barriers also create information asymmetries between existing and new buyers and sellers, which impede intra-African trade.

Moreover, asymmetric information hinders African women from accessing credit facilities due to challenges of adverse selection before the credit facility is granted and moral hazards after the credit facility is granted between the women and financial institutions, particularly microfinance banks. Due to information asymmetry, the creditworthiness of clients is the most frequently cited reason for the rejections of letters of credit.³⁹ Financial institutions often are not able to appraise the creditworthiness of firms due to asymmetric information on the credit histories of the firms. The lack of clear understanding of the activities of African women in trade and the inability of financial institutions to differentiate between good credit risks and negative credit risks impact negatively on credit facilities for women in trade. This jeopardises the chances of increased participation of women in intra-African trade. Overcoming information asymmetry, therefore, is critical in accessing trade finance for the facilitation of intra-Africa trade.

4.3.4 How AfCFTA can promote gender empowerment

Better prospects for women in small-scale cross-border trade (WSSCBT)

One basic feature of intra-African trade is small-scale cross-border trade (SSCBT), constituting about 40 per cent of the total regional trade. Agricultural commodities and clothes are the bulk of goods traded by women in small-scale cross-border trade (WSSCBT), while small-scale cross-border trade in staple foods constitutes about 30 per cent of total trade in the West African region. In the words of one key informant, '[o]ver 90 per cent of players in the African markets are micro, small, and medium enterprises (MSMEs) which are mostly women, and they contribute 65 per cent to the GDP in most African countries' (National Coordinator, Association of Nigerian Women Business Network). This suggests that SSCBT contributes substantially to the African economy and contributes significantly to fighting the scourge of food insecurity in Africa by linking agricultural markets across borders.

39 O Gajigo and others 'The trade finance market in Africa' (2015) 6 *African Development Bank, Africa Economic Brief* 301-317.

Small-scale cross-border trade is perceived by some authors and institutions as informal and unregistered businesses with no official records and evades statutory border formalities such as customs clearance.⁴⁰ UNCTAD defined ICBT as ‘trade between neighbouring countries conducted by vulnerable, small, unregistered traders’ who take advantage of proximity to move produce between markets that are close to the border. The informality is linked with the status of the unregistered trader, not necessarily to the trade itself. However, the World Bank put this trade in a better perspective by adopting the term small-scale cross-border trade, which could stimulate a change in the negative perceptions associated with informal cross-border trade.

Moreover, available country-specific statistics show that the value of ICBT exceeds the value of formal cross-border trade. Rwanda’s informal trade with its four neighbouring countries, Uganda, Burundi, Tanzania and the DRC, in 2011 was 51 per cent higher than it is for formal trade with these countries. Similarly, the value of Uganda’s informal trade with five of its neighbouring countries, Kenya, the DRC, Tanzania, Rwanda and South Sudan, in 2006 was estimated at 86 per cent per cent higher than the value of its official trade with these neighbouring countries.

Small-scale cross-border trade is a women-intensive sector that provides income and employment opportunities, especially for women in fragile communities of Africa. Women are most actively involved in SSCBT, representing about 70 per cent of Southern Africa’s informal cross-border traders and 60 per cent of West and Central Africa’s informal traders.⁴¹ Women in small scale cross-border trade are faced with many constraints, including gender biases in access to productive and financial resources; high transaction costs; illiteracy and ignorance of trade rules; difficulties in obtaining trade permits and documents; poor awareness of customs procedures; information asymmetry; underrepresentation in trader networks; lengthy clearance processes; poor border conditions; and gender-based harassment when crossing the border.

By leveraging AfCFTA, innovative solutions could be provided for the challenges experienced by women in small-scale cross-border trade. The preferential trade regimes adopted by the AfCFTA have the potential to facilitate small-scale cross-border traders and the bulk of African smallholder farmers into larger value chains. This is in line with

40 J Afrika & G Ajumbo ‘Informal cross border trade in Africa: Implications and policy recommendations’ (2012) 3 *Africa Economic Brief* 1-13.

41 N Nintunze & S Bigirimana ‘Analysis of cultural barriers to women’s economic empowerment in Burundi’ (2021) *Search for Common Ground/USAID*.

the 2014 Malabo Declaration that emphasised the need for preferential trade regimes that facilitate the integration of women into regional value chains, which is critical to boosting intra-Africa trade. In addition, under the AfCFTA annexe 6 Technical Barriers to Trade (TBT) and annexe 7 Sanitary and Phytosanitary Measures (SPS) of the Protocol on Trade in Goods, provisions are made for the harmonisation of standards between states, thereby simplifying trade facilitation between the states. This is a potential opportunity for women that are faced with difficulties in the application of standards to overcome such challenges and gain access to new markets while providing quality products and services.

The effectiveness of AfCFTA in empowering women in small-scale cross-border trade will be rooted in the effective implantation of these streamlined trade regimes beyond that of individual RECs. For instance, lessons can be learnt from inherent weaknesses in the implementation of the COMESA and EAC simplified trade regimes. Under the COMESA and EAC simplified trade regimes, eligible goods traded on a small scale are exempted from customs duties and enjoy simpler documentation processes. It is aimed at simplifying trade procedures at the borders and encouraging SSCBT to formalise its operations. However, findings by UNCTAD show that the benefits of the regional simplified trade regimes to small-scale cross-border traders are minimal and below their expectations. Many reasons identified for this failure include asymmetric information about simplified trade regimes, high transaction costs, a low threshold value of consignments, and prevailing 'administrative burden'. The simplified trade regimes of AfCFTA can change this narrative and uplift the hope of SSCBT by appropriate tailoring of the simplified trade regimes to the specific needs of women in small-scale cross-border trade and promoting one-stop-border-posts (OSBPs) across Africa's RECs.

Better employment opportunities for women through AfCFTA-induced economic growth

Social norms, discrimination against women, and educational imbalances between men and women exacerbate gender-based employment segregation in Africa. For example, women in East Africa spend most of their working hours on unpaid domestic work, including caring for children, aged parents and sick relatives.⁴² AfCFTA can offer solutions to gender-based employment segregation through a structural transformation in terms of production and induced changes in employment patterns and income. AfCFTA-induced growth in exports and imports could push

42 N Nintunze & S Bigirimana 'Analysis of cultural barriers to women's economic empowerment in Burundi' (2021) *Search for Common Ground/USAID*.

productivity growth upward while helping to create better-skilled and higher-paying jobs for women.

This research adopts Ansoff's Growth Matrix⁴³ on how women could benefit maximally from regional digital entrepreneurship (see Figure 9). More contextually, the matrix provides a better understanding of the risks inherent in growing digital cross-border enterprises, especially among women and in this digital age. It comprises four strategies, namely, (i) market penetration, which focuses on increasing sales of existing products to an existing market; (ii) product development, which focuses on introducing new products to an existing market; (iii) market development strategy, which focuses on entering a new market using existing products; and (iv) diversification strategy, which focuses on entering a new market with the introduction of new products.

Figure 9: Ansoff's Growth Matrix: How women could benefit maximally from regional digital entrepreneurship

	Existing product/ services	New product/services
Existing Market	Market penetration	Product Development
	Digital entrepreneurship development and diversification	Corporate diversification
New Market	Market development	Diversification
	Regional market penetration and consolidation	Product or services development and diversification

The effective implementation of the AfCFTA agreement could reduce unemployment in Africa through AfCFTA and induce economic growth from increased trade between the African states and increased investment in technology. While some sectors, such as export-oriented production sectors, may benefit from African trade liberalisation, others, such as import-competing production sectors, may lose from AfCFTA. Given the predominance of women in Agri-food and services sectors and working in small and medium-sized enterprises, women may not gain from AfCFTA

43 Ansoff matrix was developed by applied mathematician and business manager H Igor Ansoff and was published in the *Harvard Business Review* in 1957.

as much as men. According to the World Bank analysis, AfCFTA has the potential to contribute to closing the gender wage gap with an increase in unskilled work for women and a 10 per cent increase in wages. For instance, employment is expected to increase significantly, and output is expected to expand in agriculture and agro-processing sectors, which disproportionately employ women.

5 The new equation: Trade-related and legal policy recommendations

Mathematically, one plus one equals two. Right, and very simple. In addition, we live in a world of polar opposites, but multiple variables can be true and equivalent at the same time. Apparently, the relationship between women's digital entrepreneurship, digitalisation, the COVID-19 pandemic, 'snobalisation', AfCFTA, cross-border trade, cybercrime, legal framework, economic regulations, culture, and competition policy is not simple. Thus, the question is, what happens if we assess women's digital entrepreneurship and hidden cross-border trade nexus or remap their correlations from this entirely new perspective? Could this new dimension generate greater understanding and more realistic and impactful policy recommendations based on continental FTAs' experiences, trust, ethnographic research, increasing trends in businesses' strategic adoption of digital technologies, virtual reality, enhanced customers' experience, and historical antecedents? By implication, this research adopts a systems equation methodology that keeps exploring innovative solutions for the dynamic challenges confronting women digital entrepreneurs. As captured in Figure 10 and applied in this concluding part, the 'new equation' simply is an 'outside-the-box' and unconventional approach to recommending innovative solutions to gendered digital entrepreneurship challenges towards more sustainable future business and FTAs models for women.

5.1 Game-changing trade innovation solutions for bracing women digital entrepreneurship for the post-COVID-19 world

The continentally-coordinated AfCFTA approach will foster digital trade and entrepreneurship among women. For instance, the provision of article 27 of the AfCFTA Protocol on Trade in Services mandates the African government to harness resources to promote the export capacity of women in trade and support in building the digital skills of SMEs and women entrepreneurs, which is a crucial lever for women's empowerment. The economic empowerment of African women and the intra-African trade have a symbiotic relationship, 'as effective regulation of the latter could support the former'.

5.1.1 *Promote STEM and equal education for girls*

- (1) Given that trade liberalisation induces technological upgrading for increased competition, the African government should support women's empowerment with higher education and advanced digital skills. Sadly, only 3,7 per cent of African schools teach cybersecurity as a subject.⁴⁴ Higher education, particularly in STEM fields, can give women access to new opportunities for digital entrepreneurship. Women can also be supported with affordable and secure broadband internet access and web-based online platforms to access digital entrepreneurship skills.
- (2) The foundation of having women in tech is having girls in science, technology, engineering and mathematics (STEM). The enrolment of women and girls in STEM courses is much lower than their male counterparts in Africa. According to the World Economic Forum, women are continually underrepresented among STEM graduates. Equal STEM education for girls and women empowers them with transferable skills needed to thrive in the new digital-driven global economy and future of work. Therefore, it is important to promote STEM education for girls in the learning system by intensifying awareness campaigns on the importance of STEM education for girls and women.
- (3) Tackling the STEM gender bias requires holistic and inclusive public-private partnerships such as that between the Rwandan government and Starlight, which is a woman-and-girls youth-led organisation in Rwanda addressing gender inequality in STEM. Another pacesetter initiative that should spread across Africa is the African Girls Can Code Initiative (AGCCI), a flagship project of the International Telecommunication Union (ITU) in partnership with United Nations Women and the African Union Commission.

5.1.2 *Encourage digital skills acquisition for African women*

Most women in sub-Saharan Africa lack the skills to effectively use technology and digital tools, take advantage of the internet and harness legitimate online opportunities.⁴⁵ Digital skills, not just connectivity, drive women's empowerment. This implies that empowering young girls and women with appropriate digital skills is equally as important as increasing their access to the internet. Such empowerment will help girls and women to thrive in a COVID-19 world in which digital skills are prized, given that over 90 per cent of future jobs require digital skills.⁴⁶ African governments

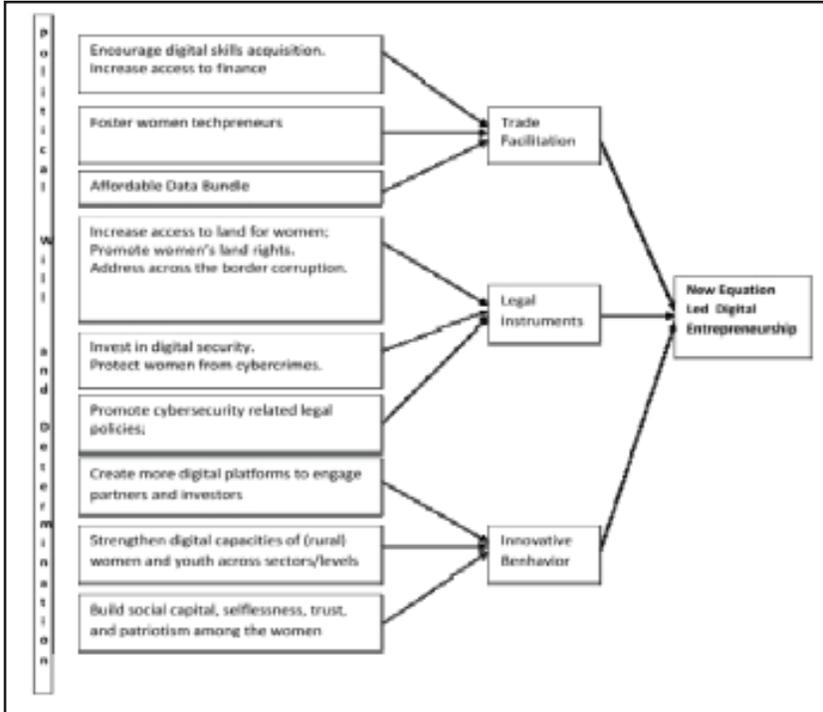
44 A Collard & A Oichoe 'Tomorrow's cyber heroines' (2021), <https://www.knowbe4.com/hubfs/TomorrowsCyberHeroines.pdf> (accessed 14 April 2021).

45 Robert (n 3).

46 M Phumzile 'Reshaping the future: Women, girls, and tech for development' (2018) Emerging Trends | ICT4SDG | SDG5.

can promote digital skills acquisition for girls and women by prioritising education in ICT subjects. Pacesetter Initiatives such as the African Girls Can Code Initiative (AGCCI) in Ethiopia, which aims to empower 2 000 girls and women between the ages of 17 and 20 years with skills in computer programming, design, and coding, should be replicated in other African countries.

Figure 10: New equation-led women digital entrepreneurship



Source: Authors’ design and adapted from: Odularu, GOA ‘An economic development strategy for West Africa: Lessons and policy directions’ doctoral thesis, University of Sunderland, 2013.

5.1.3 Empower women to be developers of digital tech and creators of digital content

The development of software and the creation of digital content has become key asset for digital transformation, particularly in a COVID-19 world.⁴⁷ Given the low participation of women and girls in developing

47 OECD ‘Bridging the Digital Gender Divide’ (2018), <https://www.oecd.org/digital/bridging-the-digital-gender-divide.pdf> (accessed 15 April 2021).

digital tech, they will achieve only half of the patented inventions within the five largest intellectual property offices (IP5) by 2080.⁴⁸ Male dominance in the digital tech development sector influences the useability and the kind of issues that technology is used to solve. Pre-existing inequalities may be worsened if girls and women are not empowered to create digital tools and online content.

5.1.4 Improve internet service quality and availability

Many African countries lag in the bottom 8 per cent globally in terms of internet quality and speed.⁴⁹ Many factors contribute to this lag, while poor electricity supply is one of the most significant obstacles to providing improved internet services in Africa. This obstacle constrains the empowerment of women in small-scale cross-border trade and the expansion of the digital economy for small and medium-sized enterprises, especially in rural areas. Higher internet speed could boost the effectiveness of AfCFTA in promoting economic growth⁵⁰ through improved social inclusion, financial inclusion, and expanded businesses and services. Improved internet service quality and availability in sub-Saharan Africa will open digital entrepreneurship services such as e-health, e-education, e-commerce, and social media, especially for WSSCBT. Moreover, improved internet service quality and speed could enable women and girls in business to access new market opportunities offered by AfCFTA and expand their businesses while taking advantage of the intra-Africa trade liberalisation.

The onus lies on the African government and financial institutions, particularly the central banks, to develop strategies to protect consumers and build more secure, sustainable and gender-responsive financial systems. Existing initiatives, such as the United Nations Capital Development Fund (UNCDF) Africa Policy Accelerator, and the Alliance for Financial Inclusion (AFI), should be scaled up. These initiatives assist African financial regulators in their design of regulatory frameworks that secure emerging payment and digital identification technologies and advance African women's financial inclusion. Another key policy measure that the African government could pursue to support women's digital empowerment is securing data privacy and data ownership rights.

48 As above.

49 E van der Merwe 'Connectivity now: Why internet access in Africa is more vital than ever' (2020), <https://www.mandelarhodes.org/ideas/connectivity-now-why-internet-access-in-africa-more-vital-than-ever/> (accessed 24 March 2021).

50 M Tuerk 'Africa is the next frontier for the internet' (2020), <https://www.forbes.com/sites/miriamtuerk/2020/06/09/africa-is-the-next-frontier-for-the-internet/?sh=660f598c4900> (accessed 29 March 2021).

This will foster the development of digital infrastructure and enhance the interactions between agents and users in the digital marketplace.

5.1.5 Make data bundle affordable, particularly for women

A recent survey of 45 African countries by the Alliance for Affordable Internet shows that only ten countries meet the standard of affordable internet, defined as paying 2 per cent or less than the average monthly income for one gigabyte of data. The high cost of ICT devices and data bundles is a bigger challenge for girls and women because the average wage for women workers is 'generally lower than men's in all countries and for all levels of education and age groups'. This predicament is worse in sub-Saharan Africa, where nine out of ten employed women are in the informal and low-paid sectors. Such a gender pay gap implies that women face higher costs to access and use the internet. Maximising the novel economic and social opportunities of AfCFTA in a COVID-19 world will only happen when we work to make the data bundle affordable for all, especially for girls and women.

5.1.6 Increase access to finance for women-owned businesses

Despite the importance of finance in boosting women's entrepreneurship, about 80 per cent of women-owned businesses lack access to business finance from formal financial institutions, which is estimated as the US \$42 billion gender gap in access to finance. Overcoming this financial challenge faced by women entrepreneurs in growing their businesses requires innovative financing driven by private-public partnerships. This is critical to strengthening existing products and introducing new products and services tailored to women-owned businesses. Regional initiatives such as the African Development Bank's Affirmative Finance Action for Women in Africa (AFAWA) programme are a scalable financing model that should be replicated in all African countries seeking to increase the opportunities for women-owned enterprises.

Moreover, non-financial barriers that limit women's access to finance should also be addressed. For instance, given that creditworthiness is the major asset for most women, many women self-select out of the credit market due to information asymmetry. They are disadvantaged by asymmetric information about their credit history, and financial institutions are limited by a lack of information sharing between institutions. In addition, the gap in property rights, which limits women's access to assets in inheritance and control over assets, has implications for access to finance. Women need better access to education, gender-sensitive financial infrastructures, removal of cultural barriers that limits interest in women,

and provision of national identities, which often are pre-conditions for access to business finance from formal financial institutions.

5.2 Legislative frameworks for preparing women's digital entrepreneurship for the future

Legal tools play effective roles in fostering online businesses and facilitating e-commerce, especially in the dire need to accelerate transactions during the COVID-19 pandemic emergency.

5.2.1 Improve access to land for women and promote women's land rights

Given that land is a significant business asset and a critical foundation for economic development, improving access to land and securing land rights for women is crucial to women's economic empowerment. Despite existing gender-related land reforms in Africa, such as the African Union (AU) Protocol to the African Charter on Human and Peoples' Rights on the Rights of Women in Africa (African Women's Protocol), women's land rights in Africa remain a major challenge. Improving gender equity in land governance and strengthening women's land rights in Africa require more workable and innovative legal tools. More importantly, African governments and land administrators should assist women in business in Africa with a simplified process of land formalisation documentation. The prohibitive costs of land formalisation, which disproportionately affects women, should be reviewed and reduced. Rent-seeking behaviour and discriminatory gender practices in customary land tenure systems in Africa should be addressed through legal reforms and gender mainstreaming in the land administration system. Such reform could promote women's empowerment and increase women's participation in digital entrepreneurship in agricultural products. As Africa makes frantic efforts to enhance financial inclusion and sustainable development, there are still considerable risks, including 'digitally-enabled fraud' associated with women entrepreneurship. Apart from government support in providing the enabling environment for women's digital empowerment, the digital empowerment of women entrepreneurs can also be achieved through complimentary individual and collective voices by the women involved in a trade.

5.2.2 Address corruption risks and practices at borders

African trade borders are fraught with corrupt practices that manifest themselves mostly in coercive bribery, sexual harassment and violence, particularly against women in small-scale cross-border trade. Beyond corruption in customs and border officials, many other factors border

crimes and corrupt practices against women in trade. These factors include under-staffed and under-resourced border services; the abuse of discretionary powers on the admissibility of imports and exports; and shady regulatory framework 'that provide traders with incentives to bribe'. These challenges could be addressed through institutional reforms that involve state and non-state actors. Civil organisations that promote gender sensitivity in trade and women traders' associations also have a role to play. They should drive advocacy and dialogue between women in trade and border government authorities to improve border conditions and curb corrupt practices.

5.2.3 Promote cybersecurity policies, invest in digital security, and protect women from cybercrimes

Women account for only 9 per cent of the cybersecurity workforce in Africa. Such a lack of African women in cybersecurity increases their risks of cybercrimes.⁵¹ Thus, women entrepreneurs should step up their presence in the cybersecurity industry to address the acute shortage of skilled cybersecurity workforce in Africa and make the digital space safe for women entrepreneurs. Furthermore, women entrepreneurs could complement government efforts at promoting cybersecurity policies by keeping private things private and away from online consumers, keeping track of their digital privacy settings, and reviewing digital content before posting. While women-owned businesses could benefit maximally from improved efficiencies of digitalisation, it is not without risks. As COVID-19 increases digital entrepreneurship, it increases the economic value of data, which attracts more cybercriminals that steal and sell business data for financial gains. Women-owned businesses in Africa, with limited digital skills and fewer resources for cybersecurity, are more prone to cyberattacks. The need to protect these women against cybercrimes cannot be overemphasised. African regional and national governments can promote digital security for women-owned businesses through capacity building on digital security, certification schemes, data governance and proper enforcement of data protection regulations. In addition, as women entrepreneurs in Africa go digital, it is critical for them to invest in digital security and integrate digital security risk management into their business models. Women should also embrace cost-effective practices such as using multifactor authentication, keeping track of their digital privacy settings, keeping private things private and away from online consumers, and reviewing digital content before

51 K Nir 'The lack of women in cybersecurity leaves the online world at greater risk' (2020), <https://theconversation.com/the-lack-of-women-in-cybersecurity-leaves-the-online-world-at-greater-risk-136654> (accessed 14 April 2020).

posting. The predominance of men in cybersecurity also leaves women in trade at greater risk of cybercrimes. More African women should also be empowered to work in the cybersecurity industry. Giving equal opportunity to women and girls in cybersecurity requires a public-private partnership involving governments, non-profit organisations, telecom firms, and professional and trade associations that could solve the problem in the long run.⁵² Moreover, discriminatory gendered practices, including cyberbullying, sexual harassment, threatening messages, and sharing of private images without consent, are on the increase online across digital platforms, thus making the internet an unsafe space for women and girl entrepreneurs.⁵³ There is a need for effective enforcement of laws to charge and prosecute perpetrators of online gender-based violence, while law enforcement agents need to brace up to tackle the increasing online threats against gendered entrepreneurship.

5.2.4 Better digital entrepreneurial opportunities within the African Continental Free Trade Agreement

COVID-19 pandemic evidence from developing countries shows that women have been particularly exploited by export-oriented industries because women's labour force generally is less unionised. This makes women more vulnerable to lower wages and substandard labour conditions due to lower bargaining. Women need to be more unionised both in the formal and informal sectors. The power of women's collective voices could advocate better digital entrepreneurial opportunities within the AfCFTA space. Access to digital tools would enhance women entrepreneurs to step up and break the barrier of traditional gender roles through networking and self-economic empowerment.

5.3 Areas of future research

This chapter broadens the literature on digital entrepreneurship prospects of women in Africa and provides key insights into its nexus with the AfCFTA. The challenges faced by women in their pursuit of digital entrepreneurship were clearly discussed, and policy implications were identified.

In this post-COVID-19 pandemic world, which requires the creation and protection of business value, it is critical that women's digital entrepreneurship remains incomplete without a cybersecurity strategy that is based on digital trust. This requires strategically switching and

52 As above.

53 Web Foundation (n 15).

adopting more innovative and advanced technologies to turn the tables on cybercrime. Such cybersecurity technology is Zero Trust. Some of the future research agenda will investigate these questions: What cloud security and other cybersecurity technologies are available and affordable to women MSMEs? How soon would women digital entrepreneurs switch from static, inherently insecure systems to a more dynamic, secured, nimble and integrated cloud system?

This study can be built upon further research by using historical data from third-party digital service firms to analyse how women digital entrepreneurs utilise the services of these firms, particularly social media platforms. Differences in the adoption of digital entrepreneurship during the COVID-19 pandemic and post-COVID-19 crises can be analysed. In addition, historical revenue data of women-owned or managed enterprises can be analysed to assess their performance compared to traditional physical or in-person entrepreneurship models.

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