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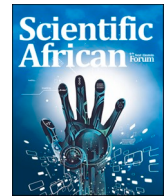
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Contextualizing entrepreneurship for Africa's post-Covid-19 recovery and growth

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ABSTRACT

Entrepreneurship plays an important role in employment, income generation, food security, empowerment, job creation, and productivity growth in Africa. However, many businesses in Africa are heavily dependent on foreign direct investment and channels both for inputs and markets and lack economic resilience and diversification. Consequently, the complete lockdown and frontier closure due to the COVID-19 pandemic resulted in a deteriorating impact on its formal and informal economic activities. The purpose of the paper is therefore to examine the challenges and responses of the African economy to COVID-19 and if the contextualized entrepreneurship approach is important in the post-COVID recovery and growth in Africa. The paper used secondary data collected through a systematic and contextual review of the latest publications and reports. The findings show that Africa is challenged with a lack of managerial skills, infrastructure, capital markets, access to finance, and incentives for entrepreneurship. Moreover, a realistic, contextualized, and sustainable trajectory recovery and development plan is critical to tackle the scale and depth of the COVID-19 challenges in Africa. In this regard, this paper provides important recommendations for African-oriented entrepreneurship development pathways and policies. This will have important implications for the post-COVID-19 recovery and the growth of entrepreneurship in Africa.

Introduction

Entrepreneurship boosts economic growth by introducing innovative technologies, raising productivity, and initiating structural changes. Moreover, it significantly contributes to the advancement of a self-sufficient and resilient society. Entrepreneurship in Africa plays an important role in poverty reduction and productivity growth [20]. However, due to the outbreak of the COVID-19 pandemic lockdown was introduced in most African countries in 2020 that continued until 2022. With more than 89 % of countries heavily dependent on commodities [4], the lockdown had a disproportionate effect on Africa's economy [49]. The lockdown also resulted in business closures, supply chain disruptions, business model changes, loss of key customers, and restrictions on products/services [13, 38]. The impact was further aggravated through its interaction with the chronic problems that predate the pandemic [26].

Stories of the pandemic and lockdown highlighted two extreme realities on employment. While millions of layoffs and many

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business closures were reported, large-scale hiring like in Walmart was also reported [13,50]. The pandemic also came with new businesses and industries which are more efficient and productive. Firms based on hybrid, platform, and platform matchmakers grew rapidly in the global economy [42]. Moreover, SMEs and large firms based on these ecosystems became stamina for creative destruction and value creation [2].

The COVID-19 infection cases and deaths in Africa are relatively lower mainly because of Africa's more youthful population and overall low density [21]. However, the complete lockdown and frontier closure policies adopted by the European Union, the United States of America, and China resulted in productivity loss and value chain disruptions. This directly decreased the demand for Africa's exports, tourism, foreign direct investment (FDI), and overseas development assistance inflows. Besides, Africa lacks economic resilience and diversification. Hence, the economic impact of the pandemic was extreme and deteriorating [4]. The negative impact on the African economy ultimately affected the survival of the existing businesses and new start-ups [33].

Governments responded to the COVID-19 impact with different supportive interventions and initiatives to support the survival and operation of their business. In line with this about 54 national governments made emergency policy decisions and actions to combat the COVID-19 pandemic [30]. USA [17]; the UK [60], The German government [18,54], and China [44] are the leading countries in this respect. In Africa, most countries cannot implement stimulus packages to cushion their economies from the pandemic recession [21]. Very few, like South Africa, Senegal, Egypt, Tunisia, and Morocco, etc. took measures like cutting interest rates, provision of liquidity assistance to cushion households and firms, and increasing social protection expenditures [52].

Even though governments in developed and developing countries deployed policy measures, and financial and nonfinancial support schemes to encounter the shock of the COVID-19 pandemic, these measures were not enough to make a full offset to the challenges created [15,43]. During the COVID-19 crisis, some innovation and entrepreneurship startups became the lifesaving of households and businesses in terms of sustainable income generation, employment generation, and source of food and raw materials supplies [13]. Some start-ups and innovative firms have reacted fast and flexibly to the pandemic and have positive contributions to education, medical goods and services, and overall business transactions in Africa during the crisis [6]. This shows that the response to COVID-19 requires a unique, contextualized, and farsighted approach that supports and creates productive, competitive, and sustainable innovations and entrepreneurship [42].

Furthermore, while the COVID-19 pandemic has both short-term and long-term impacts, the discussions and debates are more focused on short-term mitigation measures and emergency support to limit the economic damages of lockdowns and social distancing. The long-term impact of the pandemic which is direr and results in an unjustly neglected economy seems forgotten. Besides, as happened in the COVID-19 lockdown, African governments take or copy measures taken by the developed countries without contextualizing them to their respective countries and realities [21]. Africa must have a realistic, contextualized, and sustainable trajectory recovery and development plan to tackle the scale and depth of the COVID-19 challenges. Hence, this paper tries to identify the binding challenges that lessen the contribution of entrepreneurship to the economic growth of Africa and recommends pertinent and contextualized both short-term and long-term measures, and policies toward the Post COVID-19 recovery and growth of Africa. Understanding entrepreneurship and its enhancement and realization of the economic benefit is heavily dependent on the careful contextualization of culture, academia, developmental level, industry, business context, etc.

By exploring entrepreneurship and policy initiatives in the context of Africa toward the post-COVID-19 recovery and growth, this research significantly contributes to the literature on entrepreneurship. First of all, the majority of research findings on entrepreneurship come from developed nations like the U.S. and Europe [55,56]. Entrepreneurship in Africa is understudied, not yet in the mainstream, and its early phases [22,27,55]. This research examines entrepreneurship in the context of Africa and minimizes the knowledge gap. Secondly, African policies on entrepreneurship are based on the principles, presuppositions, and theoretical underpinnings of Western industrialized nations [51]. The recommended policies, however, did not match up with actual practices and environments in Africa as they were not contextualized [35]. The international community's and national governments' policy initiatives have not attempted to critically evaluate the presumptions that guide entrepreneurship policies in the context of Africa. This paper contributes significantly to that effort. Additionally, scholarly perspectives on entrepreneurship for Africa's post-COVID-19 recovery and growth are still to come. This study contributes new knowledge on the subject from Africa's perspective and is one of the first few discussions on entrepreneurship for the post-COVID-19 recovery and growth.

The paper is organized into four parts. In the first part, the methodology used is described. Then, a systematic review of literature on Challenges, academia, COVID-19, and governmental measures in relation to entrepreneurship from Africa's perspective is discussed. In the third section, Africa-focused pathways to create productive and sustainable entrepreneurship are forwarded. Finally, the important conclusions and recommendations are summarized.

Methodology

In this study, secondary data were used to explore and understand the role and Challenges faced and the impacts of governmental measures, Academia, and COVID-19 on Entrepreneurship and lessons learned to highlight the need for contextualized entrepreneurship development in Africa.

Research approach

This study implemented both the qualitative and quantitative research approaches. According to [19], qualitative research offers a more realistic understanding of the studied conditions through adaptable data collection, analysis, and interpretation methods. This type of research relies on the insights and impressions of the researchers and the existing literature, and results are typically not

subjected to rigorous quantitative analysis. In contrast, the quantitative research approach offers objective and meaningful insights through collecting, analyzing, and interpreting numerical data. These mixed research approaches have been extensively used in this study to achieve the research objectives.

Source of data

The analysis utilized secondary data sources obtained through various methods. These sources include the latest publications, governmental, and nongovernmental reports, and strategies extracted using Google Scholar, Science Direct, Scopus Index, and Research Gate.

Data collection methods

This research focused primarily on a systematic, contextual review, and analysis of existing data through the collection of qualitative and quantitative data. The qualitative data were collected from policy responses, measures taken, and outcomes of the policies and actions taken during the COVID-19 crisis, and the quantitative data include financial-based initiatives and supports, and percentages from developed and developing countries.

Data analysis

The quantitative data were analyzed by a combination of descriptive statistics and correlation analysis while the qualitative data was analyzed using thematic analysis. This helped to gain a deep understanding of the challenges and opportunities of entrepreneurship from the perspective of researchers working in this area. The data was presented quantitatively and qualitatively to outline the important contributions, challenges faced, the impact of COVID-19, and the roles of academia and governmental measures on entrepreneurship development, and identify relevant and contextualized pathways and approaches towards the Post pandemic recovery and sustainable growth of Entrepreneurship in Africa

Literature review

The role and challenges of entrepreneurship in Africa

Entrepreneurship boosts economic growth by introducing innovative technologies, increasing competition, creating new job opportunities, raising productivity, initiating structural change, and replacing unproductive and old firms [4]. Moreover, it significantly contributes to the proper use of resources, and the advancement of a self-sufficient and resilient society [32]. Entrepreneurship is also playing a critical role in Africa in terms of employment, income generation, food security, empowerment, job creation, and productivity growth [13,32]. Many countries in developed and developing nations have made policy changes from a managed to an entrepreneurial economy in the past decades to get the benefits of entrepreneurship. In this regard, many scholars and leaders proposed that entrepreneurship is a cure for empowerment, job creation, economic transformation, and poverty reduction in Africa [32].

Empirical studies in Africa also revealed that entrepreneurship is an effective employment opportunity and source of growth for the continent. For example, a study by [12] found that SMEs contributed more than 50 % of employment and GDP in Africa. A recent study in Ghana and South Africa also showed a similar result [1]. SMEs contributed to 52 % to 57 % of GDP and around 61 % of employment in South Africa, 85 % of manufacturing employment, and 70 % of GDP in Ghana [1]. Similarly, they provided employment opportunities for 50 % of the Nigerian population [7]. In light of these facts, entrepreneurship can be a viable and uncontested solution for the ever-growing and educated youth population that Africa is experiencing.

Entrepreneurship is multifaceted and influenced by resource availability, political and governance systems, education, culture, and related socioeconomic factors. Moreover, it is dynamic and needs capacity at regional, national, and sub-national levels to sustain growth and wealth creation [38]. Unfortunately, Entrepreneurs in Africa face a huge challenge from these perspectives [4].

Africa lacks managerial talents [40], efficient infrastructure, established capital markets, access to finance, and incentives to start-up businesses [32]. These are critical factors to improve productivity, entrepreneurial orientations, and boost entrepreneurship. Besides, they are not easy to solve and they demand large-scale, systematic overhauls to create an enabling environment for entrepreneurs (World [59]). These challenges are negating the local competitive advantages and lagging firms in Africa behind the industrialized nations [32]. They also create a huge problem for entrepreneurs in terms of efficiencies, costs, market access [40], labor productivity, and outputs [32].

Entrepreneurship and academia in Africa

Universities had a critical role in enhancing talents, and innovations and cultivating entrepreneurial culture and business startups through research spillovers of new research and developing skilled human capital [31]. They had been instrumental in generating new and innovative ideas, and policies, producing skilled human power that transformed the technologies, industries, and production systems in developed countries [34]. Similarly, skilled human capital is decisive in establishing competitive and innovative entrepreneurs and bringing visible economic impact in Africa. However, Africa is claimed to have serious gaps in an entrepreneurial capacity. Unlike the universities in developed countries, African universities are challenged to produce skilled and experienced

graduates, impactful scientific research, and technologies [33]. This is mainly attributed to a lack of practice and competence-oriented curricula, poor infrastructure and facilities, lack of governmental support, lack of proper training after graduation, etc. [29]. To improve these challenges universities, development partners, local governments, and financing institutions have taken some initiatives to mobilize resources for capacity building on technical and managerial skills, research and development, technology dissemination, and financing startups in Africa [29]. There have been also national policy changes on producing skilled human power including focusing on technology and engineering, strategies linking technology and higher education, competency-based education, strengthening research outputs and commercialization, establishing incubation centers and industrial parks, and more.

Entrepreneurs require education and training to get the required skills needed to succeed in business. Entrepreneurial-based education is the basis for the theoretical knowledge and technical skills required in business to be in action, innovate, and manage efficiently and effectively. In Africa, the education system is not developed to accommodate entrepreneurial orientations, and this results in poor skills and innovativeness in prospective entrepreneurs [4,33,40]. Furthermore, it lowers the adapting capability of novel and emerging technologies that will increase the productivity, competitiveness, and growth of firms [4,33,40]. This setup has negated Africa's local economies' competitive advantages and made its firms lag behind the industrialized nations [32].

Entrepreneurship education is influential in building the knowledge, skills, attitudes, and behaviors required for entrepreneurship. A study by [53] shows that entrepreneurship training participants were on average 46 to 87 percent more likely to be self-employed compared with non-participants. Similarly, a survey by [37] confirmed that students who participate in entrepreneurship training in their secondary school education are three to five times more likely to start their own company later than the general population.

Intending to produce more entrepreneurs, many countries in Africa have included the Entrepreneurship course in their higher education system. A study on the status of entrepreneurship education in Sub-Saharan Africa demonstrated that over 86 % of universities started offering entrepreneurship courses [39]. However, a thorough examination of entrepreneurship education in the region shows that the rigor and relevance of entrepreneurship training programs are doubtful. The targets, the course content, course delivery, R&D programs, and centers for entrepreneurship development face critical issues [53].

Impact of COVID-19 on entrepreneurship

Entrepreneurship is multifaceted and influenced by resource availability and constraints, political and governance systems, education, culture, and related socioeconomic factors. Besides, the survival of most entrepreneurs in developing countries requires financial, technical, and policy-based support packages. Regrettably, many African businesses do not have enough sources of funding, the leaders lack adequate business education and entrepreneurial skills, lack adequate financial muscles, and the governmental support to stimulate such businesses is minimal [33].

The challenge of entrepreneurship in Africa has further been threatened by the lockdown as a consequence of the COVID-19 pandemic outbreak. By 2020 lockdown was introduced almost in all African countries. Though the intensity varied with the infection rate of the pandemic, the restriction remains until 2022. The lockdown which primarily includes restrictions on mobility, business operations, public gatherings and movement within and across international borders resulted in a depressing impact on the formal and informal economic activities in Africa. The impact was further aggravated through its interaction with the chronic problems that predate the pandemic which include underinvestment, unemployment, unsustainable debt, governance grieves, and climate changes [13]. Besides, Many African countries' economic development was heavily dependent on foreign direct investment and channels both for inputs and markets [49]. The complete lockdown and frontier closure policies adopted by the EU, US, and China resulted in productivity loss and value chain disruptions. This ultimately decreased the demand for Africa's exports, tourism, foreign direct investment (FDI), and overseas development assistance inflows [26]. With almost 89 percent of the countries commodity-dependent, the price falls on minerals, commodities, and oil due to the lockdown had a disproportionate effect on Africa's economy [49]. Inappropriately, while the rest of the world is slowly reopening businesses to recover from the crises with economic stimulus and investment recovery plans, lockdown is delayed in Africa which constrains further production and trade in the economies [26].

The COVID-19 pandemic has both short-term and long-term impacts on entrepreneurship and innovation [38]. The short-term impact includes a reduction in start-up rate, an increase in firm exits, job cuts, supply chain disruptions, jeopardizing the R&D processes, business model changes, loss of key customers, restrictions on products/services, rising market concentration, drop in productivity, business dynamics, etc. From this perspective, stories highlighted that many business closures and millions of layoffs were caused by the pandemic and lockdown [13]. The long-term impact is the permanent decline in entrepreneurship and innovation, and finally unjustly neglected economy. This has a grave consequence in creating a more vulnerable society than ever to shocks and future pandemics. A study by [38] on the impact of major pandemics on the macro-economy in Europe over the past 500 years found that pandemics had long-term impacts that lasted up to 40 years. These impacts result in depressed investment opportunities for a long period because of excess capital per unit of surviving labor, high protective saving, regeneration of used wealth, and sensitive desires to save more [38].

On the contrary, the pandemic was a new opportunity for some companies which resulted in large-scale hiring. Wal-Mart hired 150,000 new employees in April 2020, with plans to hire 50,000 more in the same year [50]. A study by the Aspen Network of Development Entrepreneurs (ANDE) discovered that 12 % of businesses in finance, 11 % in education, and 10 % in the health sectors in SMEs anticipated increased revenues in their projections for 2020 [5]. It also opened the path to the birth of efficient and productive new businesses and industries. The digital era changed industries and impacted enterprises in transport, hospitality, entertainment, personal services, etc. Firms based on hybrid, platform, and platform matchmakers grew rapidly in the global economy [42]. What is more interesting is, that the firms based on these ecosystems became stamina for creative destruction, value creation, and appropriation [2]. In Africa, some start-ups have reacted fast and flexibly to the pandemic and had positive contributions to education,

medical goods and services, and overall business transactions [13]. They became the lifesaving of households during the COVID-19 period as a sustainable income, employment generation, and source of food and raw materials supplies [6].

Governmental measure and their impact on entrepreneurship

Governments responded to the COVID-19 impact with different supportive interventions and initiatives. The USA set the Paycheck Protection Program (PPP) to fund small businesses to keep them operational [17]; the UK implemented the Coronavirus Job Retention Scheme (CJRS) for waged workers which covers up to 80 % of employee salaries and self-employment, income Support Scheme that grants 70 % of the average monthly trading profits based on 2018 and 2019 tax returns [60]. The German government introduced taxation support, short-time work compensation schemes, improved bank and loan guarantees [54], and special lump sum payment emergency aid [18]. In China, supportive measures commenced in February 2020 when the Central Bank of China freed extensions of loans to companies and reduced the mandatory bank reserve ratio. The government of China introduced a wide range of policies like deferring tax payments, reducing rent costs, waiving administrative fees, subsidizing R&D costs, social insurance subsidies, subsidies for purchasing and training, teleworking services, and allocating additional funding tailored to support SMEs in the crisis [44]. Generally, more than 54 national governments worldwide made emergency policy decisions and actions to combat the COVID-19 pandemic [30]. Extraordinary amounts of state aid were channeled into supporting economies around the globe [30].

It has been almost two years since the COVID-19 pandemic reached Africa. While there is a variation in testing and case data in Africa, mortality rates in Africa are significantly lower than elsewhere, mainly because of Africa's more youthful population and scattered living conditions [21]. Yet, Egypt, South Africa, Algeria, Morocco, Nigeria, and Ghana are highly affected. Unfortunately, Africa has Very few countries capable of implementing stimulus packages to cushion their economies from the pandemic recession [52]. South Africa allotted US\$ 160 million to cushion vulnerable businesses, US\$ 8.4 billion for the unemployment insurance fund, and tax subsidies for at least 75,000 small and medium enterprises. Senegal has established a Euro 2.1 million response and solidarity fund and a Euro 97.6 million contingency plan to cushion herself from the impacts of COVID-19. Egypt, Morocco, and Tunisia injected US\$6.4 billion, US\$ 1 billion, and US\$0.9 billion respectively as economic stimulus packages for enhancing liquidity during COVID-19. The measures adopted in most of the other African countries were mainly cutting interest rates, and provision of liquidity assistance to cushion the poorest households and firms [52]. However, multilateral institutions like the World Bank, European Union, African Development Bank, and International Monetary Fund arranged loans, emergency response, and debt relief as a stimulus package to almost all African countries and helped a lot [26].

It is indisputable that measures taken to contain contagion through lockdowns and market closures have played important roles in limiting rates of infection in Africa. Nevertheless, fighting the diseases was not easy and the impact on business, social, economic, livelihood, and other activities was heavy. A survey conducted by the African Management Institute (AMI) in 17 African countries shows that more than 87 % of entrepreneurs are uncertain about their business survival during the pandemic. Moreover, more than 67 % stated that the measures taken by their government to control COVID-19 such as lockdowns, curfews, and social distancing had negatively aggravated their survival [33]. This is mainly attributed to the adoption of measures from the developed world directly without contextualization to the African reality.

Generally, the deployment of monetary, fiscal, administrative, etc. to make a full offset for the employment and demand fall is not enough [15,43]. The response to COVID-19 requires a unique, contextualized, and farsighted approach that supports and creates productive and sustainable entrepreneurship.

African oriented post COVID-19 strategy and policy implications

Business as usual has collapsed during the pandemic and business in the post-COVID needs a paradigm shift in entrepreneurship and business practices. The world and Africa in particular had seen millions of businesses closed and loss of jobs at a distressing rate and continually. Moreover, the majority of entrepreneurs in Africa are uncertain about how to recover from the stress of the pandemic and grow afterward. Thus, Africa must have a contextualized, realistic, and sustainable trajectory recovery and development plan to tackle the scale and depth of the pandemic and declining economic challenges. This requires a unique and farsighted approach that supports and creates productive and sustainable entrepreneurship which further needs synergy and consistency in the contextualization of entrepreneurship, education, policies, and strategies to the African reality. The following are some of the strategies and policies in this regard that need attention in the post-COVID-19 recovery and growth in the context of Africa.

Developing dynamic capabilities

In the volatile and uncertain environment firms' dynamic capabilities to integrate resources in recognizing new opportunities is critical [14]. In the post-COVID world, agile and resilient new businesses will be able to take advantage of their entrepreneurial orientation and find opportunities in the turmoil that the pandemic has caused globally [61]. The dynamic capabilities and resilience differentiate the survival, failure, and speed at which entrepreneurs learn, key to long-term growth and survival [16,61]. As described by [57] firm's dynamic capability is the ability to build and reconfigure, integrate both internal and external competencies to cope with a volatile environment and attain a new and innovative competitive advantage. The development of dynamic capability in European small businesses has played a significant role in the businesses adopting digital technologies and developing strategic, managerial, and digital skills that have increased their response and efficiency during the pandemic [11,58]. Thus, creating a competitive advantage through dynamic capabilities is a remedy to uncertainty during and beyond the pandemic [28].

Developing the physical infrastructure

The physical infrastructure which mainly includes transportation, telecommunications, and electric power generation is key to the competitiveness and growth of entrepreneurs in particular and the economy in general (World [59]). Physical infrastructure helps enterprises link to their customers, and suppliers and market timely and efficiently. It creates a conducive environment to locate, grow, and expand the business and supports startups. The high-speed fiber optics in Kenya which is enabling an ecosystem of ICT entrepreneurs are exemplary of the role of improved infrastructure [32]. The underdeveloped infrastructure in Africa remains the blockage of new venture startups, growth, and expansion of businesses ([40]; World [32,59]). Hence, developing efficient, integrated physical infrastructure that supports an entrepreneurial-based ecosystem will have a paramount effect on the post-COVID-19 recovery, growth, and expansion of entrepreneurship in Africa. Besides, improving the infrastructure in Africa would significantly enhance the level of entrepreneurship, improve productivity, and foster the viability and success of startups. It will also make African economies more competitive and attractive for foreign direct investment. In this regard, the African government and supportive bodies need to strategically focus and work to bring a paradigm shift on smoothing the infrastructure challenges of businesses in Africa.

Financial supports

Sustained entrepreneurship requires supportive and accessible financial institutions, such as commercial banks, developmental finance institutions, microfinance, credit bureaus, etc. In most African countries, financial institutions are underdeveloped, and access to finance is limited. Besides, the cost of accessing debt/loans and equity capital is too expensive [40] and financial institutions demand outrageous collaterals [32]. Entrepreneurship is believed to play a significant role in the process of creative destruction and economic growth and expansion, thus efforts to reduce funding constraint is an important goal of the policymakers and governments [15,43].

During the COVID-19 pandemic, developed countries have put measures and emergency funds to support entrepreneurship and have played an important role in the survival, recovery, and creation of innovative and efficient startups. Unfortunately, Africa made little effort to support the sector already with more challenges and the impact of the pandemic was distressing [40]. Therefore, governments in Africa need to be conscious to put workable and contextualized strategies to boost financial sources that will assist entrepreneurs to survive, recover, and grow during and after the COVID-19 pandemic. Moreover, flexible, fair cost, easily accessible and capable of adjusting and accommodating volatile situations, multiple financial providers, and various stimulating packages need to be designed and created in Africa to boost entrepreneurship.

Support the informal business sector

Many entrepreneurs are involved in the informal business sectors and have a significant contribution to economic growth both in developed and developing countries. The contribution of the sector in sub-Saharan Africa is about 63.6 % of the GDP and even goes up to 70 % in countries like Benin, Niger, and Togo [48]. The sector also covers about 86 % of all employment and 90 % of women's employment in Africa [36]. This sector cannot be ignored if proper recovery and growth are required in Africa. Regrettably, the sector did not receive the attention it deserves in a major governmental decision in Africa. Consequently, the sector is the hardest hit and with no hope for governmental support for its revival. Considering the huge contribution to the African economy, the recovery and future growth of Africa heavily depend on the proper establishment and implementation of reviving strategies for the informal sector. Practical solutions include the removal of statutory fees and licenses levied, supporting funds, deferring interest charges, tax exemptions, etc. There are exemplary initiatives in Kenya, Burkina Faso, and Mauritius made to revive the informal sectors by promising tax exemptions and injection of funds to the sector [48]. Hence, more is needed in the kind and coverage of the support packages in Africa targeting the post-pandemic recovery and growth of the informal business sector.

Localization of the trade system

The major stress of business in Africa was created due to the disturbance of the import and export supply chain system. Encouraging localization through incentives and policies opens several entrepreneurial opportunities [21]. It creates more entrepreneurs on supply chains and encourages the development of circular economy business models that maximize resource utilization [46]. However, localization needs proper supply chain design, mass entrepreneurship training, and devising incentive mechanisms that will encourage buying locally available raw materials and made products.

The trade-related shock of COVID-19 clearly showed the long-lasting and unwise underutilization of the regional market by African countries. Africa could have been resilient to shocks through the diversification of exports, buying locally available raw materials and made products, and increased value added to the trade. yet the commodity price instabilities continue to dictate the impact of the pandemic and the direction of economic progress in Africa. On the other hand, the pandemic offers Africa the opportunity to demonstrate the merits of unity, regional cooperation, and connectedness. The African Continental Free Trade Area (AfCFTA) is one of the initiatives and opportunities to upsurge intra-African trade [21].

However, according to a report by the Afro Champions Initiative, it is unfortunate that both the commitment and preparation of countries for the implementation of the AfCFTA are less than 50 percent [47]. This is concerning since the AfCFTA agreement will be central in speeding up post-pandemic recovery and growth. Its full implementation will provide Africa with opportunities for growth and economic diversification through industrialization and manufacturing. This could be a game-changer for Africa. It is also likely to

boost agricultural output in the long run. According to [46] the AfCFTA will have the potential to increase intra-African exports of agricultural products by 49 % compared to 10 percent without it by 2035 and lift between 30 and 68 million people out of poverty. Hence, the countries need to be wise enough to catch the opportunity and fully implement the initiative to make Africa's post-pandemic recovery and growth fast and self-reliant.

Improving technological capability

The lockdown due Covid-19 pandemic has led to a sharp slowdown in economic activity, forced firms to change their business models, disrupted supply chains, online sales, and remote work have become the new norms. This had a detrimental effect on African countries where the technological infrastructures are not well developed, and business model changes are very slow and less flexible. A study conducted by [25] based on many firms from several countries (South Africa included) analyzed if the technological capability of a country can help firms recover fast from recessions. The findings of the study showed that firms headquartered in better technological capability generated relatively higher revenue during the shock period. It further indicated that a 4 % firm's relative increase in revenue is associated with the improvement of a country's technological capability by one standard deviation. This effect is more noticeable among smaller firms, signifying that it could have helped the fast recovery of SMEs. Technological capability can improve a firm's resilience to shocks by facilitating electronic commerce, enhancing customer services, logistics, and operations, and increasing efficiencies. Hence, African countries should focus on improving their technological capability toward long-term and sustainable economic recovery and growth through the new normal approach which demands installing and improving the technological capabilities of the countries. The region is also dominated by SMEs where the technological capability is more effective in the recovery and growth of the firm. However, the copy-and-install approach may not work well as the existing situation, culture, economic, technological literacy, etc. levels are different. Therefore, contextualized technological capacity development towards African countries' setup is important to capitalize on the benefit of technology capability for the recovery and growth of the firms in the post-COVID.

Digitization of the African economy

Digitally empowered firms and business models play a critical role in adopting new business models, responding, and developing resilience in times of volatility [45,58]. Digitalization can also augment the industrial performance of companies, diversification of the economy, business climate, governance, transport systems, and communications [58]. Entrepreneurship in the post-pandemic era will heavily depend on the digital economy. Entrepreneurs will largely search for funds, opportunities, assistance, collaborators, market and sell products on digital platforms. Furthermore, changes in consumer behavior, mainly the acceptance of online products and services will have huge opportunities to create new entrepreneurship/enterprises which will give a new growth direction, employment, and training opportunities in Africa. Hence, the importance of digital capabilities is expected to grow for entrepreneurship practices during and after the COVID-19 pandemic. In this regard, Google commissioned Studies in the USA in 2020 and Europe in 2021 reveal that the use of digital tools by small businesses helped them to shift resources, modify business plans, and continually evolve throughout the pandemic [24]. Online retailing has been growing in Africa and issues like e-commerce regulation, electronic payments, and regulatory measures to protect consumer data need to be urgently addressed in the region. Africa needs to work to improve the severe digital literacy and underdeveloped infrastructure, ICT cost, service, security, import-based, and ICT goods. Moreover, Africa needs to draft and implement policies to scale up the digital transformation of its economies to make transformational changes in the post-COVID recovery and growth.

Smart and innovative business model

The old approaches and business models for strategic competition are forgone. New approaches and innovative business models that will address the work setup, employee handling, structure, daily operation, volatile environment, etc. must be designed and implemented. In fact, they should be updated iteratively with the dynamic environment. Moreover, the needs and tastes of customers were changing dramatically from the onset of the pandemic to adjust to the new normal. Entrepreneurs need to be hyper-sensitive to accommodate the changes and demands of customers competitively and smartly. Zoom and Google made their product relevant to the COVID-19 services requirements and boosted their business, while many were suffering and closing down. These all demand capable, smart, and innovative entrepreneurs, better plans, management styles, and practices.

Contextualizing the academia

The role of academia in developing and promoting business development and risk-taking culture is huge [31]. Higher education curricula based on these skills encourage students or trainees to engage in entrepreneurial activities. Moreover, Comprehensive reforms should be made to fill the entrepreneur's skill gap and solve the challenges faced. This includes creating a conducive culture for innovation and creativity by introducing learning approaches that emphasize cognitive creativity and critical thinking, problem-solving, professional and technical skills, inducting strategic industry-university linkage, and promoting the STEM professions [29].

In the knowledge-based economy, the survival and growth of firms heavily depend on innovation and the competitive offering of new products and services [34]. These demand a high level of technological expertise, creativity, and absorptive capacity that can be enhanced through continuous deployment of skilled human capital and investment in R&D. In this regard, increasing investment in

education and R&D programs, initiating contextualized technology transfer structures, regulatory mechanisms, and university-industry co-operation, etc. will activate the role of academia in contributing to entrepreneurship

Unfortunately, Africa has dire human development indices and poor entrepreneurial activities because of its regretful education status [4]. Besides, entrepreneurship development and research centers are not alluring. Therefore, the government and relevant supporting institutions in Africa should work together to contextualize the academia and develop relevant curricula and training that will solve the human capital, entrepreneurial and research skills, and knowledge gaps.

Ease doing business in Africa

The ease of doing business is important to create an enabling environment for entrepreneurship (S. [9]). Entrepreneurs in turn will be involved in a business that can boost economic development through improving the living standards, exports, GDP and GDP per capita, wealth creation and sharing, employment opportunities, and balanced regional development [3].

Although different policies were designed and implemented to ease doing business in Africa, the continent is shockingly lagging due to high cost of starting a business and doing a business, shortage of energy and electricity, lack of access to finance, and high taxes and low cross-border trades (S. [9]). This has negatively been playing in exposing the continent's potential resources and channeled them toward its developmental activities [23]. Hence, doing business in Africa should be made easy and clear to create an enabling environment for entrepreneurship in the domestic and global markets. This will play an important role in the post-COVID-19 recovery, growth, attraction, and sustaining foreign direct investment in Africa [41].

The costs of starting a business and doing business are very high due to many procedures and corrupt practices [8]. This may be addressed by improving institutional, and economic governance and digitalizing the process. Moreover, the high costs, lengthy processes for getting electricity, and ineffective energy management are choking the smooth running of business operations [10]. One alternative to decrease the cost and shortages is to encourage the production and consumption of green energy. Another chronic disease for African entrepreneurship is the lack of access to finance which is traceable mainly to affordability, physical access, and information asymmetry between lenders and borrowers [26]. This may be upgraded by improving the information communication system and electronic banking. Finally, the high taxes and low cross-border trade are major obstacles to doing business in Africa (S. [9]). Encouraging Continental Free Trade and product diversification are important initiatives in this regard.

Conclusions and future research prospects

This paper discussed the role and Challenges faced and assessed the impacts of governmental measures, Academia, and COVID-19 on Entrepreneurship from the African perspective. The findings show that entrepreneurship is playing a critical role in employment, income generation, and overall growth in Africa. However, many businesses in Africa do not have enough sources of funding, the leaders lack adequate business education and entrepreneurial skills, lack adequate financial muscles and access, underdeveloped infrastructure, and the governmental support to stimulate such businesses is minimal. Moreover, academia is not producing graduates with the required entrepreneurial knowledge, skills, attitudes, and behaviors. Many African businesses are heavily dependent on foreign direct investment and channels both for inputs and markets. Faced with these chronic challenges and economic activities, the lockdown and frontier closure due to the outbreak of COVID-19 resulted in a disproportionate effect on Africa's economy and Entrepreneurship. Thus, Africa must have a contextualized, realistic, and sustainable trajectory recovery and development plan to tackle the scale and depth of the pandemic and declining economic challenges. This requires unique and farsighted approaches that support and create productive and sustainable entrepreneurship. In line with this developing dynamic capabilities, developing the physical infrastructure, financial support, supporting the informal businesses sector, localizing the trading system, improving technological capability, digitization of African economy, developing a smart and innovative business model, contextualizing the academia and entrepreneurship to African reality and facilitating the ease of doing business are important policy and strategy recommendations to improve the contribution of entrepreneurship in the post-COVID-19 recovery and sustainable growth of Africa.

The authors were unable to collect primary data based on interviews and questionnaire surveys due to the movement restrictions imposed, complete siege and blackout due to the war in Tigray (North Ethiopia). The study was made purely based on literature reviews and secondary data. Hence, future research needs to be done to validate, and test the pathways and policies recommended and get further insights on the issues based on primary data. Moreover, the long-term effect of COVID-19 and the policy responses made on entrepreneurship, the role of digitization on entrepreneurship and the infrastructure requirement, strategic financial sources and support policies, the economic resilience and diversification of inputs and markets, the nonfinancial impacts of COVID-19 and the coping mechanisms are important research prospects that need further investigation from Africa's perspective.

Declaration of Competing Interests

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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