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Special Issue on Covid-19 Pandemic and African Economies
(Including a Revised Text of the Second Thandika Mkandawire Annual Memorial Lecture)

Numéro spécial sur la pandémie de Covid-19 et l'économie africaine
(Avec un texte révisé de la deuxième conférence commémorative annuelle Thandika Mkandawire)

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Guest Editor / Rédacteur invité
Badar Alam Iqbal

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CODESRIA would like to express its gratitude to the Swedish International Development Cooperation Agency (SIDA), the Norwegian Agency for Development Cooperation (NORAD), the Carnegie Corporation of New York (CCNY), Andrew W. Mellon Foundation, the Open Society Foundations (OSFs), Oumou Dilly Foundation and the Government of Senegal for supporting its research, training and publication programmes.

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EDITORIAL

Badar Alam Iqbal*

It is a well-established that the promotion of regional development always results in a higher degree of socioeconomic development, for every country or region, whether they are developed, developing or least-developed economies. African economies are no exception to this rule. This idea is even more valid and more relevant for the ongoing economic and social development (two faces of the same coin) of African economies, where there is greater room for accelerating the pace of growth and development.

The role of Africa in the global economy and its contribution has been growing year after year. According to calculations by the African Development Bank (ADB), the growth rate of the aggregate real GDP of African economies was predicted to reach 4.0 per cent in 2019 and 4.1 per cent in 2020. Although these growth rates are still lower than those witnessed by emerging economies, namely China and India, it is believed that African economies will nevertheless exceed the average growth rate in other developing countries and emerging economies.[1]

To reach their objectives of attaining quantitative development (higher GDP) and qualitative development (improvement in standard of living and quality of life), African states will have to take integrated and systematic measures aimed at solving the persistent and alarming problems of the continent, such as accelerating the pace of development of the economy, trade and the social sector. Major challenges are still faced by African nations, namely poverty, hunger, disease, lack of education, underdeveloped infrastructures (hard and soft), increasing dependence on resource exports, and the influence of foreign monopolies.

The emerging economies, especially the non-African BRICS countries (including Brazil, Russia, India, and China), in their turn, have been showing increasing interest in the African region in recent years. At the 2022 BRICS Summit, these nations emphasised the need for and significance

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of achieving progress through collaboration between developing countries, especially global South cooperation, in terms of trade and investment flow, which is the sine qua non for the acceleration of the pace of growth and development. Two emerging economies—China and India—must play the role of promoters, not rivals.

When working for economic and social development for the continent, developed and developing countries must establish backward and forward linkages with African countries. The developed countries of the global North must keep in mind the newly emerging trends of African development, which include the delegation of authority to supranational organisations (the African Union and other regional institutions), ecologically sustainable development of human capital and the infrastructure, formation of the ICT market, development of Big Data and AI, and other equally important processes.

Why a Special Issue?

The general rule on development highlighted above was recently interrupted by the Covid-19 crisis, a crisis that has had far-reaching and direct impact and implications for African economies, not least because it drastically affected the movement of goods and services, resulting in an unbearable consequences on African businesses and SMEs. To what extent has this affected Africa's role in the global economy?

Keeping in mind the persisting challenges arising out of Covid-19, there was an urgent need to discuss the different issues relating to this pandemic at length. This formed the justification for this issue of Africa Development in which we undertake to examine critical issues that are directly and indirectly related to the impact and implications of Covid-19 on African economies.

In all, eleven papers were received. Out of these, seven were selected for inclusion in this special issue. The papers were vigorously peer reviewed by two reviewers to ensure high scientific quality. These seven papers touch on different issues of Covid-19 and African development. But as it has become a tradition in CODESRIA, we also use the pages of this journal to publish the Thandika Mkandawire Annual Memorial Lecture which was prepared separately by Fiona Tregenna and delivered in 2022.

The Structure of the Papers

The first paper by Felix Fofana N'Zue and Adjoua Math Komenan aims to provide a better understanding of the possible link or interaction between the spread of the Covid-19 pandemic in West Africa, as proxied by the

rate of infection, and the state of governance in the ECOWAS countries. The article finds that governance did not significantly impact the Covid-19 infection rate in the ECOWAS region, but tourism and external debt did. The authors then urge development partners to pay close attention to the reliability of Covid-19 confirmed cases to ensure that the data collected is not manipulated for any reasons whatsoever.

The second paper, authored by Tope Akinyetun, examines the regional impact of the pandemic on the security and development in the Sahel. The author finds that Covid-19 exacerbated the threat of insecurity in the region due to pre-existing weak governance, poor state capacity, and climate change, which were already worsening and causing more risks and increasing the severity of violent conflicts. The result of this has been further fragility, loss of income, food insecurity, displacement, loss of livelihood, increased poverty, unemployment, hunger, humanitarian crises and contracting economies.

The third paper, by Tolulope Osinubi, Cleopatra Ibukun and Titus Ojeyinka, investigates the effect of the Covid-19 lockdown and 'work-from-home' approach on academic activities in Nigeria. The study used bivariate and multivariable regression and the results show that factors such as inadequate power supply, inadequate electricity access, poor workspace, inadequate access to research materials, health status and increased care for children and the elderly during the Covid-19 lockdown were significantly associated with a decline in the share of time devoted to work from home during the pandemic.

The fourth paper by Stella Okoroafor, explores the impact of the Covid-19 pandemic on the financial performance of small and medium-scale enterprises (SMEs) in the South East geopolitical zone of Nigeria. It analyses the effect of the pandemic on the revenue, profitability and access to credit of SMEs in the region. The findings reveal that Covid-19 significantly reduced SMEs' profitability and revenue but did not significantly reduce their access to credit, which were the parameters used to measure the financial performance of SMEs over the period in view. The author recommends that business owners should adapt to the new norm and technology, and innovate to find opportunities to grow sales and improve revenue, reduce overhead expenses, minimise costs and improve profit margins.

Written by Verena Tandrayen-Ragoobur, Boopen Seetanah, Sheereen Fauzel and Viraiyan Teeroovengadum, the next article analyses learners' perception of their ability to adapt to online learning and the challenges encountered as well as opportunities offered by this new e-learning environment in the midst of the Covid-19 pandemic, using Mauritius as a

case study. The results show that Covid-19 was a major disruption in higher education studies. There is an urgent need to rethink and, where possible, redesign the existing education system to be prepared for future shocks and build an effective and efficient education system.

In the sixth article in this issue by Ivan Kagimu, assesses the success of the Covid-19 relief disbursement and social relief programmes in East Africa, as well as the mechanisms that were used to draw lessons from them by comparing these with programmes outside Africa in order to better structure such social relief programmes in the future. The paper finds that, in many countries in East Africa, Covid-19 relief programmes failed due to a lack of up-to-date multidimensional data on people's living standards, income and poverty levels. The author suggests that if East African countries are to run effective social relief programmes, they must build comprehensive and multilayered (resident) data collection systems to guide the programmes.

The next is a study by Ismail Changalima who provides insight into how Covid-19 pandemic affected public procurement operations, as well as the role of public procurement during the pandemic. The paper synthesizes relevant literature on Covid-19 and public procurement in the African context. This review of literature on Africa up to the year 2022 was taken into consideration to enrich the findings of the intervention.

Finally, the last paper, written in French by researchers in Senegal, Sidia Diaouma Badiane, Amadou Tandjigora, Thierno Bachir Sy, Adjani Nourou Dine Yessoufou and Mamoudou Dème, focuses on the effect of COVID-19 pandemic on informal companies in the Senegalese agricultural sector. It shows how difficult it was to supply raw materials and sell products during the pandemic and also the negative consequences on the entrepreneur's turnover.

Researchers, planners and policy-makers will find the contents of these papers insightful, relevant and useful. Also targeted are organisations working around African development issues. Planners and policy makers will find in this issue idea that might go a long way in helping them prepare for any such crises in the future.

As the Guest Editor, I wish to appreciate the contribution of the reviewers, editorial staff and the publisher, without whose concerted efforts this collection would not have seen the light of day.

Note

1. https://www.afdb.org/en/documents/african-economic-outlook-aeo-2019-english-version

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Can Africa Run? Industrialisation and Development in Africa

Revised text of the second Thandika Mkandawire Annual Memorial Lecture presented on 10th October 2022 at a memorial meeting jointly organised virtually by SARChI Chair in Social Policy, University of South Africa, CODESRIA and UNRISD.

Fiona Tregenna*

Abstract

Africa remains the least industrialised region in the world. Yet industrialisation is critical for growth and catching up, as well as for development more broadly. This article begins by discussing industrialisation in Africa through the lens of Thandika Mkandawire's writings on the subject, within the context of his broader thinking on development. In particular, it reflects on his perspectives on structural change and industrialisation; the phases of industrialisation and deindustrialisation in Africa; the political economy of industrialisation in Africa; social policy and industrialisation; and trade and regional integration. The author provides an analysis of some key issues pertaining to industrial development and policy in Africa and argues that the weaknesses of industrialisation in Africa, and the periodic reversals through premature deindustrialisation, have not only hampered economic growth and development, but have also influenced the political economy of African countries, with wider social and political effects. Similarly, state capacity for industrial policy is built through 'learning by doing' in the actual practice of industrial policy. Amongst the key topical issues discussed in the article for industrialisation in Africa are upgrading and technological progress, regional integration, and the greening of industrialisation. A vision is put forward for 'Transformative Industrialisation for Africa' (TIfA).

Keywords: development; industrialisation; deindustrialisation; industrial policy; political economy; Thandika Mkandawire; Africa

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Editor's note: An earlier version of this paper was originally presented as the Thandika Mkandawire Memorial Lecture. The author however requested that it be subjected to a rigorous blind peer review process in advance of its publication. We publish it in this issue of Africa Development both in honour of the late Thandika Mkandawire but also as a peer-reviewed article that conforms to the academic requirements of this journal.

Résumé

L'Afrique demeure la région la moins industrialisée du monde. Pourtant, l'industrialisation est essentielle à la croissance, au rattrapage économique, ainsi qu'au développement en général. Cet article commence par aborder l'industrialisation en Afrique par le prisme des écrits de Thandika Mkandawire pris dans le contexte de sa réflexion générale sur le développement. Il étudie en particulier ses perspectives sur le changement structurel et l'industrialisation, les phases d'industrialisation et de désindustrialisation en Afrique, l'économie politique de l'industrialisation en Afrique, la politique sociale et l'industrialisation, de même que, le commerce et l'intégration régionale. L'auteur analyse certaines questions clés relatives au développement et à la politique industriels en Afrique et affirme que les faiblesses de l'industrialisation en Afrique et les inversions périodiques dues à une désindustrialisation prématurée ont, non seulement, freiné la croissance et le développement économiques, mais ont également impacté l'économie politique des pays africains, avec de vastes effets sociaux et politiques. De même, la capacité en matière de politique industrielle de l'État est renforcée par « l'apprentissage par la pratique » dans un exercice réel de politique industrielle. Parmi les principales questions d'actualité soulevées dans cet article en faveur de l'industrialisation en Afrique figurent la revalorisation et le progrès technologique, l'intégration régionale et l'écologisation de l'industrialisation. Une vision est proposée pour « l'industrialisation transformatrice de l'Afrique » (TIfA).

Mots-clés : développement ; industrialisation ; désindustrialisation ; politique industrielle ; économie politique ; Thandika Mkandawire ; Afrique

Introduction

The title of this article – 'Can Africa Run? Industrialisation and Development in Africa' – is a tribute to Thandika Mkandawire's Inaugural Lecture for his position as Chair, African Development at the London School of Economics in 2010, which was subsequently published under the title '*Running While Others Walk: Knowledge and the Challenge of Africa's Development*' (Mkandawire 2011). Thandika[1] of course adapted this from Nyerere's famous declaration that 'We must run while others walk', which pointed to the need for Africa to move faster just to catch up with the rest of the world.

There is no doubt that Africa needs to 'run'. Indeed, the whole world is now 'running', with technology advancing at an unprecedented pace. Can we on the continent accelerate industrialisation and technological progress, and catch up through sustained high growth and development, such that an African child born today can live a long, healthy and fulfilled life with the capabilities to learn, contribute, flourish and make meaningful life choices?

The reality is that, since Nyerere's exhortations in the 1960s about the need for Africa to run, Africa has not caught up, nor even kept up with the rest of the world. African countries have been overtaken by Asian countries that were previously poorer, and Africa also has not meaningfully narrowed the gap with advanced economies. For instance, China was poorer per capita than almost all African countries in the mid- to late 1970s, but has now sped ahead and is richer per capita than all African countries (except the Seychelles). South Korea previously had levels of income per capita lower than many African countries, but is now a high-income economy.[2] In the late 1980s, Thandika presented figures showing what he characterised as the abnormally low levels of industrialisation in African countries at independence (Mkandawire 1988:12). While there have been a few success stories, some African countries are less industrialised today than they were at independence. The weaknesses of development in Africa of course have multiple explanations – internal and external, historical and more recent – that are beyond the scope of this article. I will be focusing specifically on industrialisation and development, taking an ontological and *longue durée* approach.[3]

Thandika's writings hold profound insights for contemporary debates about industrial development and policy, as well as, of course, for broader issues including the state, social policy and the overarching questions of African development. Some of his seminal contributions on industrial development and policy were written in the 1980s, yet they remain highly relevant four decades later. For instance, his insights into regional integration are germane to current developments in the African Continental Free Trade Area (AfCFTA). Furthermore, the issues he discussed regarding the financing of industry are pertinent today, his emphasis on capabilities and technological upgrading resonates with current thinking on technological progress, and the links he drew between social and industrial policy have a direct bearing on contemporary policy debates, as do his fundamental contributions on the central issue of the developmental state.

There are two components to this article. The first analyses and reflects on Thandika's thinking on industrial development and policy in Africa, in the context of his broader ideas on development in Africa. Industrialisation was one of Thandika's central interests, alongside and intertwined with his thinking on states, national development, social policy, and his broader approach to political economy and development in Africa. He focused on industrial development and policy, especially in the earlier stages of his work, while maintaining an interest and continuing to engage with and

write on these issues throughout his career.[4] This discussion, which is contained in the next section of this article, focuses on the following aspects of Thandika's ideas:

- the importance of structural change and industrialisation;
- his characterisation of the phases of industrialisation and deindustrialisation in Africa;
- the political economy of African industrialisation;
- social policy and industrialisation; and
- trade and regional integration.

The subsequent section (*Industrialisation and Development in Africa*) offers some of my own ideas and thinking on industrial development and policy in Africa. The continent has an overall weak record of industrialisation, including premature and pre-industrial deindustrialisation. I argue that this has contributed to poor growth, as well as having wider social and political economy consequences. Thus, not only is political economy important to explaining and enabling industrial development and policy in Africa, but political economy is also partly endogenous to industrialisation.

Industrialisation remains critically important to growth and development in Africa. While there are opportunities for leapfrogging, sustained industrial progress is only possible with ongoing investment, learning, building of capabilities, and upgrading. African industrialisation pathways will need to involve technological advancement, regional integration and green industrialisation. This discussion builds up to a case for 'Transformative Industrialisation for Africa' (TIfA). This is not intended as a comprehensive discussion, and certainly not as any kind of blueprint for industrialisation in African countries. Due to constraints of space, I will be unable to discuss a range of other issues that are critically important to industrialisation in Africa, including capital flight, macroeconomic policy, infrastructure and so on.

Thandika's Thinking on Industrial Development and Policy

Why Industrialisation?

Thandika consistently emphasised the centrality of structural change and industrialisation for Africa's catching up and broader development. While he was more concerned with applied issues of economic development than in 'high theory', he was of course theoretically grounded and engaged with the international development literature. I would characterise his thinking as broadly within a Structuralist tradition. The Structuralist approach to economic development was initially formulated primarily in Latin America, in particular by economists associated with the United Nations

Economic Commission for Latin America and the Caribbean (CEPAL/ECLAC), including Raúl Prebisch and Celso Furtado.[5] In essence, Structuralism emphasises the importance of shifting the structure of developing economies towards higher-productivity activities, specifically to manufacturing through industrialisation, as the key pathway to catching up with advanced economies.

Thandika drew explicitly on the Latin American structuralists (especially Prebisch), and also on Albert Hirschman, as well as being strongly influenced by Alexander Gerschenkron. During Thandika's studies in the United States and Sweden in the 1960s, and while he was further developing his own thinking in the 1970s and 1980s, Structuralism was prominent in the theory and practice of development, especially in Latin America. Structuralist thought was especially influential concerning the centrality of industrialisation and structural change for catching up.

The international debates of the time around economic development were engaged with issues such as the role of national bourgeoisies in development, peripheral countries' dependency on the 'core', the role of manufacturing as an engine of growth in developing countries, how to overcome reliance on primary commodities, terms of trade between developing and advanced economies, and the role of the state in industrialisation and in the wider development project.

Thandika was alive to and engaged with these international debates around structural change and development. He located the Structuralist approach in the context of African countries, considering in particular colonial history and the levels of underdevelopment relative to the other two major developing regions of the world – Latin America and Asia. He considered industrialisation and growth in Africa through the lens of African countries being 'late' or 'late, late' or even, as he sometimes referred to them, 'late, late, late' industrialisers: 'African economies were the quintessential "late latecomers" to the process of industrialization' (Mkandawire 1999a:91). This 'lateness' in industrialising is directly linked to the fact that decolonisation in most of Asia and Latin America happened earlier than it did in Africa. He argued that African countries, as late industrialisers, needed a 'big push', through mechanisms of cumulative causation, to move from a low equilibrium trap and a vicious cycle of poverty as a result of the colonial legacy, towards a higher equilibrium with self-reinforcing growth and transformation (Bangura 2020). Thandika's focus on the centrality of structural change can be seen in his view that '[t]he litmus test for any policy is whether it contributes to economic growth and structural change' (Mkandawire cited in Meagher 2019:530).

Technological upgrading was central to Thandika's conception of late industrialisation and catching up. He highlighted how countries risked 'being locked in a permanent slow-growth trajectory' if they stuck to static comparative advantage and failed to advance technologically (Mkandawire 1999a:91). He explicitly rejected a linear model of development and technological progress – a teleological view in which technologies are progressively abandoned in advanced economies and subsequently adopted in developing countries. Instead, drawing strongly on Gerschenkron's (1962) concept of late industrialisation, Thandika argued that 'one of the advantages of late industrialisation is access to experiences and knowledge accumulated by the forerunners. Latecomers can telescope development, thus adopting certain measures at much earlier stages of their development than the pioneers' (Mkandawire 2007:14). In a similar vein, he emphasised the importance of learning and productivity for catching up:

> In the manner of Gerschenkron, I dare to argue that in order to catch up, 'late, late, late' comers will need to attain levels of education and learning that are far higher than those attained by the pioneers at similar levels of economic development. I would further argue that while earlier forms of 'primitive accumulation' relied on brawn, the new ones will rely more on brains. Increases in productivity will drive the catching-up processes much more than the mobilisation of financial and human resources (Mkandawire 2011:14).

Thandika was always clear on affirming the primacy of development and on the importance of material progress, recognising economic growth as not sufficient, but insisting on its necessity. This is cogently captured in his declaration that 'Africans do not live by bread alone. This said, bread matters' (Mkandawire 2011:25). Thus, while emphasising the importance of the character of growth (including its distributional character), he wholly rejected any notions that growth does not matter. This was both in his earlier contributions on the broad development process in Africa, and also evident in his later remarks on development and climate change in the African context. He situated economic growth within the catching-up process – the central concern of a Structuralist approach to development.

> 'Catching up' does not mean being like the West, or the East. My concern is with bridging the huge gap in material well-being between the developed countries and the rest of us. And within the 'rest', Africa is at the tail end. Such catching up involves rapid growth, structural change and technological mastery. It involves learning from others, selectively applying the lessons, being innovative to partly 'leapfrog' over certain 'stages'. 'Catching up' suggests intentionality and the drawing up of strategic plans to attain the goal. Neoliberal reforms have been against any intention other than that sanctioned by markets. It is against 'planning' and has little vision of Africa

> beyond the role that 'comparative advantage' assigns to it (Mkandawire cited in Meagher 2019:16).

His views on the importance of industrialisation for Africa, and the direct causal link between industrialisation and catching up, were strengthened by the astounding success of East Asian industrialisation and growth. For some today, this is a matter of economic history. But Thandika lived through this and could directly observe the transformation of East Asian economies and societies. These successes stood in stark contrast with the failures of industrialisation, growth and development in many African countries over the same period, especially when set back by structural adjustment programmes (SAPs). East Asian countries that had been poorer than most African countries overtook their African counterparts and sped up to the advanced economies. For Thandika, this empirical experience reinforced his Structuralist-inspired views on the importance of industrialisation for Africa:

> The industrialization of Africa is still high on the agenda, despite the battering it has suffered in recent years. Not only must African countries aim to reverse the process of deindustrialization, but also they must actively seek to catch up to others with unprecedented speed. Experience from the high-performing Asian countries clearly suggests the importance of strategies and interventionist policies for rapid industrialization, in contrast to the didactic messages about market friendliness extracted from the story of the East Asian miracle (Mkandawire & Soludo 1998:95).

From the East Asian experience, Thandika drew lessons about the importance of a dynamic rather than static notion of comparative advantage. He looked to the active industrial policies that these countries implemented in order to develop future comparative advantages in industries in which they were not yet competitive. He pointedly contrasted this with International Monetary Fund (IMF) advice based on concepts of static allocative efficiency (Mkandawire 1984:145).

Where Thandika departed from the East Asian experience, including in terms of its relevance and lessons for African countries, was in his own unshakeable insistence on democracy. Indeed, he himself was a refugee from an authoritarian African state (Malawi under Banda). Thandika argued forcefully that democracy and development are compatible, and that countries need not choose between them. Specifically, he argued that countries can industrialise and grow with democratic rather than authoritarian states. In this, he drew explicitly on the characteristics he admired in the Nordic countries, and how they had successfully developed – not only with but also through – democracy.

Industrialisation and Deindustrialisation in Africa

Thandika traced the historical phases of industrialisation and deindustrialisation in Africa, and the determinants of these changes. He argued that, for different reasons at different times – including colonialism and the SAPs – African countries were 'out of sync' with the rest of the world in industrialisation (Mkandawire 1999a:91).

Going back to the phase of industrialisation in many developing countries between 1914 and 1945, he points out that Africa largely lost out on this due to colonialism (Mkandawire 1988:9). Other developing countries pursued import-substituting industrialisation (ISI) during this period, aiming to replace imports with domestic production, and which they financed either through borrowing or through debt defaults. Yet African countries under the colonial yoke could not protect their own domestic markets as a basis for industrialisation, nor could they run deficits to finance industrialisation (Mkandawire 1999a:91). With the exceptions of the special cases of South Africa and what was then Rhodesia, he contrasts the experience of Africa under colonialism with the experiences of Latin America and even India, whose industrialisation during the same period (1914 to 1945) was to lay the basis for their post-World War II industrialisation (Mkandawire 1988:10). He shows that, as a result, African countries were among the least industrialised countries in the world at independence (Mkandawire 1988:11–12). The fact that Africa decolonised later than other developing regions is thus integrally connected to the continent generally being a 'late latecomer' to industrialisation.

Linked to this later decolonisation, the subsequent phase of ISI in Africa post-independence was short, at less than a decade in most countries. ISI in Africa was not only far shorter but was very different from that in Latin America, for instance. Thandika rejected narratives blaming ISI for Africa's economic problems (Mkandawire 1988, 2005a). He exposed the bankruptcy of characterisations of 'backwardness' and neo-patrimonialism as lazy explanations for the poor development outcomes in Africa. For instance, he identified two key flaws in arguments from the public choice school that attributed the adoption of ISI policies in Africa to rent-seeking:

> First, it could not be demonstrated empirically that industrial policies in Africa had been pushed by rent seekers … Second, the account is anachronistic. Beneficiaries of industrialization were not the source of the policies, but the product of industrialization (Mkandawire 2015:585–586).

He further noted that, while other regions financed their industrialisation through Eurodollar loans, most African countries did not borrow extensively, and their borrowing was used mainly to finance balance-of-payments problems rather than for industrialisation (Mkandawire 1999a:91).

The Lagos Plan of Action (Organisation of African Unity [OAU] 1980) emphasised the importance of industrialisation, seeing this as central to Africa's development and self-sufficiency. The Plan was effectively superseded by the Berg Report and the SAPs, and its recommendations were largely not implemented. Thandika wryly noted the divisions within African governments between ministers of planning, who had developed the Lagos Plan of Action, and finance ministers, who were associated more with the Berg Report.

Thandika's strong views on the centrality of structural change and industrialisation for Africa led to his serious concerns about the deindustrialisation he observed in many African countries from the early 1980s following the SAPs. The so-called 'structural reforms' of the SAPs, of course, have no affinity with structural change or structural transformation.

Thandika pointed out that a number of African countries had been on positive growth and development tracks prior to the SAPs, and had made progress in industrialisation, growth and development. He thus directly identified deindustrialisation in Africa in the 1980s as part of the 'maladjustment' caused by the SAPs (while also recognising underlying domestic political economic factors that enabled this reversal, as discussed further below) (Mkandawire 2005a).[6]

One of the channels of this relationship is that the SAPs 'prematurely exposed African industries to global competition and thus induced widespread processes of de-industrialisation' (Mkandawire 2005a:16). Thandika (with Charles Soludo) also showed how the models of perfect competition and (static) comparative advantage underpinning the SAPs negate the logic of industrial policy, while the 'incentive-neutral' trade policy prescriptions of SAPs undercut the possibilities of industrial policy (Mkandawire & Soludo 1998:95–96).

He showed how African economies were devastated and had their development pathways derailed by SAPs. For Thandika, this was not just something to be written about in academic papers, but something that he felt deeply and viscerally as being like a wound inflicted on the continent.

One of the effects of the SAPs was to undermine the capacities of African states, including emasculating states from driving industrialisation and development:

> And so African economies find themselves denied use of the state which has been the major source of dynamism in industrialisation while awaiting, in the absence of indigenous capital, the arrival of foreign investments that remains sceptical of export oriented industrialisation in Africa. The result has been stagnation and de-industrialisation (Mkandawire 1988:28).

In addition to SAPs, he identified two primary sources of the failures of industrialisation in Africa from the 1980s. The first was external shocks, in particular deteriorating terms of trade and heavy external debts leading to foreign exchange constraints on the import of intermediate inputs needed for industrialisation. The second was weak institutions and weak industrial capabilities that hampered modernisation and competitiveness in industry (Mkandawire & Soludo 1998:101–102). A related contributing factor was financial liberalisation, which constrained the financing of industrialisation, and more broadly undermined states' leverage over the necessary resources, and limited the policy space, to drive an industrialisation agenda (Mkandawire 1999a).

Thandika remarked that '[t]o talk of 'de-industrialisation' in a continent that is least industrialised in the world, may seem merely faddish' (Mkandawire 1988:5). Yet he argues forcefully that deindustrialisation in Africa from the 1980s was not inevitable, and that it acted as a brake on Africa's growth and development. He warned that '[t]he dismissal of deliberate, strategic industrial and trade policies to shape Africa's position in the global trading system runs the distinct danger of leaving Africa on the low-productivity, low-growth path' (Mkandawire 1999a:91) – a warning that unfortunately foretold what indeed subsequently unfolded.

The Political Economy of Industrialisation and Deindustrialisation in Africa

As with any issues to which he turned his gaze, Thandika looked at issues of industrial development through the lens of critical political economy, which was the hallmark of his approach. This approach can be summed up in his observation that 'industrialisation and its reversal are quintessentially political' (Mkandawire 1988:30).

He coined the term 'choiceless democracies' (Mkandawire 1999b) to describe systems that are nominally democratic but with no meaningful substantive choices, and specifically no meaningful choices or power over the economy.

His analysis of the early failures of industrialisation and of deindustrialisation in Africa in the early 1980s did not simplistically attribute these only to SAPs,

nor did he cast African governments as the hapless victims of international financial institutions (IFIs). Thandika critiqued the class basis of African industrialisation, which he sees as part of the colonial legacy. Unlike Asia and Latin America, African countries at independence lacked a strong and autonomous indigenous bourgeoisie that could drive the industrialisation project. He argued that class and state structures made industrialisation in Africa 'socially "rootless"' (Mkandawire 1988:18), and contrasted this with India and Latin America. He thus argued that 'industrialisation in Africa was strictly speaking not a "class project". It was essentially a nationalist programme and as such it lacked the sharpness and purposefulness of a class determined project' (Mkandawire 1988:18).

In this respect, he observed commonalities in the degree of state involvement across socialist and capitalist African states. In both, the nationalist roles of the state in industrialisation were driven by the desire for increased control and the need for accumulation, in the face of the private sector not stepping up (Mkandawire 1988:18–19).

The weak social and class basis, and lack of broad-based 'ownership', of industrialisation, were fundamental weaknesses of the industrialisation project and made it vulnerable to reversal, as indeed transpired with the SAPs. Thandika observed that '[t]he weak base of the industrialisation process is revealed by the fact that outside labour and a few nationalist groups, de-industrialisation has not received much resistance internally' (Mkandawire 1988:30). His analysis of the weaknesses of the business class in most African countries, due in part to the distorting effects of colonialism on class formation, points both to the leading role of the state in industrialisation and to the need to embed this project more broadly.

Social Policy and Industrialisation

It would be remiss to reflect on Thandika's perspective on industrialisation without bringing in social policy, and his novel linking of innovation, industrial policy and social policy. This was not a 'forced marriage', considering that he had earlier focused on industrialisation and then, after joining the United Nations Research Institute for Social Development (UNRISD), turned his attention more to social policy. Rather, he was able to link industrial and social policy in a novel and organic way through an integrated development lens. He argued that social policy is not just about social protection – protecting the vulnerable and improving people's quality of life. In his conceptualisation of 'transformative social policy', social policy plays a productive role in the development process.[7]

Thandika's writing on social policy, industrialisation and development has strong relevance for contemporary debates on social policy, including specifically the possible expansion of social grants. For example, objections to expanding social grants and social policy in current debates in South Africa include: 'it will create dependency', 'we cannot afford it', 'the money would be better spent productively', 'rather put the funds towards industrial policy', and 'jobs are more important'. This is the context of what can be regarded as a crisis of social reproduction. Through well-crafted and strongly grounded arguments set out in various papers (Mkandawire 2001b, 2005b, 2007), Thandika debunked this kind of thinking. Instead, he conceptualised social development as integrally linked with innovation, industrialisation and growth.

For instance, with reference to the East Asian experience, he draws attention to the often-underplayed role of the state in social policy as the 'handmaiden' of rapid industrialisation:

> For right-wing observers, the absence of such a role for the state is the source of the good performance of the Asian economies. A closer look, however, shows that successful NICs [newly industrialising countries] pursued social policy that served as a handmaiden to the rapid industrialization aspirations of these countries (Mkandawire 2001b:16).

Thandika's conceptualisation of social policy can be understood as part of his broader perspective on catching up, drawing on Structuralism and on Gerschenkron and adapting to the African context. Even among the advanced economies, he noted that late industrialisers adopted social policy at an earlier stage of development than did early industrialisers. He understood social policy as closely linked to the innovation and technological progress that are needed for late industrialisers to catch up.

He pointed out that '[r]apid industrialisation produces enormous social dislocations and strain, challenging the social acceptance of innovations' (Mkandawire 2007:24). This heightens the role of social policy in cushioning these dislocations and strains, both to protect those negatively affected and as part of building wide support for innovation and industrialisation, despite these uneven distributional effects. A second key role of social policy in this context lies in building the capabilities needed for technological progress, industrialisation and growth. As Thandika wrote, '[t]he catch-up process demands … "social capability" which includes the attributes and qualities of people and institutions that condition a society's capability selectively to adopt, adapt and improve technologies' (Mkandawire 2007:15).

Another channel through which he linked social and industrial policy was in the financing of industrialisation, noting that the availability of finance has been a constraint on industrial development in Africa. Drawing on the Scandinavian experience, he observed how public pension funds, as part of social policy, were instrumental in the domestic financing of industrialisation.

Trade and Regional Integration

Thandika had strong views on trade orientation, and the international development debates of the time around 'import-substituting industrialisation' (ISI) and 'export-oriented industrialisation' (EOI). He critiqued what he characterised as a false binary between ISI and EOI:

> the dichotomy of 'export-oriented versus import substitution' is misleading because even the most successful exporters continue to pursue import substitution. For another, import substitution was not a strategy for autarky but for the eventual diversification of the export base away from primary products toward industrial products (Mkandawire 1999a:81-82).

He rebutted the mischaracterisation of the trade orientation of the newly industrialising countries (NICs) as EOI. Instead, he pointed out that nearly all the NICs used import substitution for an extended period of time as a necessary basis for export success. In addition, he notes that the NICs continued to selectively use protection for industries in which they were not yet competitive, but in which they were aiming to develop a comparative advantage (Mkandawire 1984:45).

As discussed above, Thandika emphasised that the period of ISI was short in Africa, and he rejected neo-patrimonialist explanations for the adoption of ISI as well as accounts blaming ISI for Africa's economic problems.

His concerns about ISI in Africa were different, one of these being that the manner in which it was implemented undermined regional integration. In a piercing critique of African governments, he writes:

> Many factors have worked against regional integration in Africa. One is the small-mindedness of import substitution industrialization in Africa, where Lilliputian markets were taken to be the basis of viable industrialization. This, in turn, reflected the pettiness of the many dictators that were to proliferate on the continent. Content with their little fiefdoms, they lacked the vision and will to imagine larger units to which they would have to surrender some of the power they exercised over their hapless citizens (Mkandawire 1999a:100).

As well as these internal factors, he attributes the failures of regional integration to 'the continued divide-and-rule tactic of the neocolonial powers' (Mkandawire 1999a:100), as well as the SAPs that undermined countries' adherence to regional co-operation arrangements (Mkandawire 1999a:100–101). He also observed that the nature of Africa's articulation with globalisation fostered regionalism among contiguous states, rather than true integration across the continent.

Thandika contrasted this with the post-independence pan-African visions of regional integration that would unify Africa. He lamented the 'petty nationalism' generated both by the nature of colonial rule and by the choices made by nationalist movements, which led to little progress with regional co-operation. 'As a result, the continent with the most vocally expressed ideology of regional collaboration (pan-Africanism) has probably moved least in the direction of establishing viable regional arrangements' (Mkandawire 1999a:100).

Thandika emphasised the integral relationship between regional integration and industrialisation in Africa and saw integration as being of enduring importance for growth and development. Linking this with his views on import substitution and export orientation, he argues:

> Regional arrangements can be used as a collective agency of restraint. In addition, regional integration could serve the dual function of extending and deepening import substitution and promoting exports and Africa's competitiveness in global markets. Forms of regional integration that are protective from the point of view of the rest of the world but that allow and encourage competition within the boundaries could serve as training grounds for industries of the region preparing for global markets (Mkandawire & Soludo 1998:124).

In addition to regional integration, Thandika (with Charles Soludo) identified two key directions for Africa's trade orientation. Firstly, enhancing competitiveness by shifting the production structure towards products that are more dynamic in global demand and more technologically advanced. Secondly, addressing the structural bottlenecks in the trade governance system and aiding export promotion and industrialisation. In this approach, the authors link trade (especially export promotion) with industrialisation and structural change (Mkandawire & Soludo 1998:95).

Concluding Remarks on Thandika's Perspectives

Space does not permit me to discuss all aspects of Thandika's approach to industrialisation. There is much more to say about his thoughts on the role of the state, on the financing of industrialisation, and on his critique

of narrow environmentalism, among other issues. I have nevertheless tried to bring out and engage with his emphasis on the importance of industrialisation for Africa's development, his concerns around earlier deindustrialisation, and his views on trade and regional integration, and the links between industrial and social policy. He considered these issues through the lens of critical political economy, never shying away from challenging dominant orthodoxies.

Industrialisation and Development in Africa

Next, I put forward my own analysis of some key issues pertaining to industrial development and policy in Africa. I identify some of the economic and broader effects of Africa's weak record of industrialisation and 'pre-industrial deindustrialisation', and argue that industrialisation remains important for Africa's development. In Thandika's tradition, I consider Africa's industrialisation through a critical political economy lens, suggesting a dialectic of political economy conditions both influencing and being influenced by industrialisation. I discuss some topical issues of industrial development in Africa – technological advancement, regional integration, and green industrialisation – building up to a case for 'Transformative Industrialisation for Africa' (TIfA).

The Economic Effects of Weak Industrialisation and 'Pre-industrial Deindustrialisation' in Africa

While explanations for poor growth and development in Africa need to be multifaceted and country-specific, I contend that the failures of industrialisation are an important part of the story. Industrial development in Africa has been stop-start, and most countries have never reached significant levels of industrialisation. The various phases of deindustrialisation in Africa have been premature, in the sense of setting in at lower levels of gross domestic product (GDP) per capita and at lower shares of manufacturing in GDP and in total employment than would be typical at the onset of deindustrialisation internationally (Tregenna 2009, 2016, 2017). In previous writings I have characterised this phenomenon in some African countries as not only premature deindustrialisation, but as 'pre-industrial deindustrialisation' (Tregenna 2015). This is in the sense of beginning to deindustrialise before industrialising in any meaningful sense. There have of course been successes – within countries at particular times, including in the present, and in particular sectors, but this is an overall *longue durée* appraisal. Besides the low shares of manufacturing in countries' total employment and GDP, the weaknesses of African industrialisation are manifest in generally

low technology intensity in manufacturing, weak productive capabilities, poor competitiveness and export performance, and manufacturing not strongly pulling along other sectors as an engine of economic growth.

In addition to the negative effects on economic growth, deindustrialisation is also likely to have negatively affected wider socio-economic development in Africa, including the levels of economic diversification and complexity, technology intensity, export strength, and poverty and other developmental outcomes.

I argue that the failures of industrialisation in Africa have had broader social and political economy effects, beyond the socio-economic effects discussed above. Industrialisation that is deep and sustained has profound and irreversible effects on a society. This is evident, for example, in how the First Industrial Revolution transformed European economies and societies (Ashman *et al*. 2020). These effects (which are not necessarily all positive) reach far beyond matters of productivity and growth: these are the transformative effects of industrialisation on social and class relations and on a country's broader political economy.

The Political Economy of African Industrialisation

Industrialisation is class formative. It is the central route to proletarianisation and the formation of a working class. Internationally and historically, it is also through industrialisation that countries have typically developed a robust middle class. Industrialisation also forms the basis for the establishment of a national bourgeoisie as a class that is able to drive a nation's economic progress in ways that agrarian landowning classes cannot.

The nature and longevity of colonialism in Africa meant that most countries lacked a robust and autonomous indigenous bourgeoisie that could drive the industrialisation project, and the weaknesses of industrialisation in turn hampered the emergence of such a class.

One dimension of the class-formative effects of industrialisation is the subjective one of class identities. Any individual's identity may always be 'overdetermined', through an intersecting mix of national, ethnic, class, religious, gender, sexual, regional or other identities. The primacy among these multiple identities, and the ways in which they intersect and interact, will vary over time for the same individual, and will of course be heterogeneous among individuals in any community or country. We might speculate that, for the overwhelming majority of the poor and 'working class' (in the broadest sense) in Africa, class identity or class consciousness are not necessarily among the foremost of their identities.

In various civil and cross-country conflicts that have taken place in Africa in the post-independence era, those directly involved in combat are typically of the same class or socio-economic status. We can only speculate as to whether conflict would have been as prevalent had their countries become industrialised and prosperous, and if they had regular and unionised factory jobs. This is of course not to suggest that industrialisation is a recipe for peace – the various conflicts between industrialised European countries, including the two world wars of the past century, could readily disabuse us of such a notion. Yet, with weak or incomplete class formation, the associated weaknesses in working-class organisations and working-class consciousness, and with persistent economic deprivation and perceived lack of prospects, other identities, such as religious or ethnic identities, will be more prominent.

In terms of electoral politics, the electoral platforms on offer in African countries can generally not be most aptly characterised along a linear 'left-right' ideological spectrum. Economic issues do of course feature, for instance around food security, infrastructure and basic services, and job creation. In some countries, voting patterns arguably tend to follow regional or ethnic patterns more strongly than socio-economic status. Incomplete class formation in societies with strongly pre-industrial characteristics means that traditional notions of class need to be reconstructed, or at least adapted, in these contexts.

Beyond subjective identities and consciousness, industrialised economies are generally less conflict-prone than those dependent on natural resources. There is an extensive literature debating the links between natural resource dependence – specifically dependence on minerals – and conflict (although some strands within this body of literature remain contentious and more nuance is certainly called for).[8] One aspect of this is the high value and portability of minerals, for example conflict diamonds, relative to most manufactured goods.

All this is not intended to essentialise or romanticise industrialisation. It would be absurd and reductionist to attribute the range of complex and context-specific challenges across Africa to the failures of industrialisation, or to advocate industrialisation as the 'silver bullet' for Africa's underdevelopment. The political economy conditions for, and political constraints on, industrialisation have been discussed extensively over the years. My argument here is that this relationship is a dialectical one: the successes and failures of industrialisation also partially shape a country's political economy. A country's political economy is to some extent endogenous to industrialisation. Without being too crudely materialist or mechanistic, this is part of the influence of productive relations on social relations.

One policy implication of this is that countries cannot wait for the 'right' political economy conditions for industrial development and policy. While recognising that political economy configurations in different countries may be differentially conducive to industrialisation, it is important for countries to 'get on with it'. Industrialisation that is of sufficient scale and duration will itself influence political and economic conditions. One aspect of this is that industrialisation changes the balance of economic power within countries (as well as internationally).

Sustaining industrial development in a market-based or mixed economy requires vesting the industrialisation project within a vigorous 'indigenous' national bourgeoisie. Beyond the narrow class fraction of owners of industrial capital, a deep rooting of industrialisation requires that other fractions of capital depend on the continuity and success of industrialisation (including through intersectoral linkages).

'Vested interests' have often been condemned, sometimes in a manner that quite bizarrely suggests that there are any issues or processes in which there are no stakes or interests. We do need interests that are deeply vested and invested in the success of an industrialisation project, not as mere rent-seeking beneficiaries of state largesse, but as a range of stakeholders prepared to fight (not literally) for industrialisation. This is essential to avoiding the stop-start industrialisation that has been the experience of many African countries. Here I am referring not so much to the earlier experiences of the SAPs, but to inconsistent support for industrialisation in more recent years. If industrial policy is seen as a system of patronage, to be doled out as payback for electoral support and to be reversed by the next administration, then industrialisation will not go anywhere.

For industrialisation in Africa to be sustained, it thus needs to be socially rooted – having a strong class and broader base, including in the state bureaucracy. State 'embeddedness' is important for the design and implementation of effective industrial policy (Andreoni *et al.* 2021a). This means a depth and breadth of interests across fractions of capital and across classes, and across regions and ethnic groups, that are vested in the success and continuation of industrialisation.[9]

Weak state capacity is one of the arguments that has been voiced against an industrial policy agenda in Africa. Curiously, this argument is applied specifically to industrial policy: we do not hear arguments that African governments should not undertake macroeconomic policy, for example, because of weak state capacity. I argue that state capacity and state capabilities are, at least to some extent, endogenous to what the state actually does. A weak and 'hands-off' state that does not undertake vigorous industrial policy

will not build up the capabilities to do so. These capabilities also cannot be built up just by sending public servants on training courses. It is through the actual design and implementation of industrial policy that public sector capabilities are built up – 'learning by doing' at the policy level. There will be failures, and there will be cases where scarce public resources are not used optimally – as has happened in industrial policy all around the world. What matters is learning from these failures and strengthening industrial policy capabilities through practice.

Industrialisation Remains a Key Tenet of Development for African Countries

Both the theory of economic development, and the experiences of development across countries and over time, show the importance of industrialisation for the development process. Internationally and over time, there are very few observed country experiences of sustained fast growth without industrialisation.

In brief, manufacturing has certain characteristics that enable it to play a special role as an engine of growth. These growth-pulling properties include the scope for dynamic increasing returns; the strength of linkages (especially backward linkages) with other sectors; the role of manufacturing in alleviating balance-of-payments constraints; and the contributions of manufacturing to technological advancement. It is important to recognise that there is a high degree of heterogeneity in each sector of the economy, with a diversity of activities within each sector, and that some activities within services or agriculture will have these growth-pulling properties more strongly than some activities within manufacturing. Furthermore, there is growing integration between sectors, and 'fuzziness' of sector boundaries (Cramer & Tregenna 2020). We thus need a nuanced view that considers both sector-specificity and activity-specificity, and that promotes dynamic activities in any sector. Still, there are common denominators across manufacturing activities that are relevant to growth, and industrialisation remains key to growth and development internationally.

In recent times, there have been debates on whether services can act as an alternative engine of growth in Africa.[10] It is true that services now account for much of employment in Africa, there is great diversity within the service sector, and there are pockets of services activities that are strongly growth-pulling. There is no doubt that services play an important role in various respects, and that certain kinds of services are high in productivity, skills-intensive and technologically advanced and can contribute strongly

to growth. But overall, I see no basis at this stage for confidence in the viability of the services sector taking the leading role in driving growth in African economies, pulling along other sectors, and enabling African countries to catch up with more advanced economies. In addition to the inherent characteristics of activities within different sectors and the 'special properties' of manufacturing as an engine of growth (Tregenna 2008), one reason for this is the low level of economic development still generally prevailing on the continent. Without having fully industrialised, and still being at relatively low levels of income per capita, it is not feasible to transition on a significant scale economy-wide into the kinds of high-productivity, advanced tradable services that could serve as engines of growth. This is in contrast with the nature, scale and role of services in some of the richest countries in the world. Advanced economies have typically already undergone long and deep industrialisation (even if they have since deindustrialised), through which they have built strong productive capabilities, and these economies are typically complex and diversified with dense linkages and learning channels. In many African countries, and notwithstanding some important exceptions, the nature of the service sector often has a high degree of informality, with relatively low skills, low productivity and low technology, with limited tradability, and is more oriented towards consumer than producer services. All these characteristics are not always adequately taken into consideration in some of the 'hype' around the potential of services as an alternative leading engine of growth in Africa. Certainly, services are highly heterogenous within and across African countries and there are some highly dynamic services activities. Services play a very substantial role in employment creation, and have a range of important intermediary roles in any economy. But this does not detract from the centrality of industrialisation for sustained growth, and of the importance of industrial policy to realising this.

Some Key Topical Issues for Industrial Development and Policy in Africa

Upgrading and technological progress

The whole world is now 'running', and African countries need to run faster to keep pace and catch up. One dimension of this is in technological upgrading. Innovation and technological progress are fundamental to economic progress. Sustained rapid growth is unlikely without technological advancement. Innovation is relatively low in African firms, relative to other developing regions of the world (Paus *et al.* 2022). While there are opportunities for leapfrogging, sustained industrial progress is only possible

with ongoing investment, learning, building of capabilities and upgrading (see Figueiredo 2001; Andreoni 2014; Lee 2019; Avenyo *et al*. 2021a). It is important for African countries to take a dynamic view of comparative advantage, and to actively build up strengths in activities in which they are not currently competitive, but to have the potential to become so in the short to medium term.

We can understand innovation, technological upgrading, and the building of productive capabilities as part of the 'microfoundations' of structural change. There is an iterative relationship between capabilities and industrialisation. While capabilities are needed for industrial development success, these capabilities are also partially endogenous to and are built through industrialisation. This endogeneity is included through 'learning by doing' at the firm, sector and country levels.[11]

This is of course challenging in countries that are relatively scarce in capital and skills. Furthermore, an abundance of low- or semi-skilled labour, and the need for large-scale job creation in the context of high unemployment, will push countries towards prioritising more labour-intensive activities. Yet even for low-income countries that are trying to gain a foothold in industrialisation, it remains important to invest in innovation, capabilities and technological upgrading. Even for middle-income African countries, there is a danger of getting stuck in a 'middle-income technology trap', referring to 'specific structural and institutional configurations that are not conducive to increasing domestic value addition and to sustained industrial and technological upgrading' (Andreoni & Tregenna 2020:324).

Regional integration

It is well recognised that the domestic markets in many African countries are too small to serve as a springboard for industrialisation, as it is difficult to achieve the required economies of scale. This points to the importance of regional integration as a core part of the continent's industrialisation pathway. Africa's combined population is about the same as that of China and potentially provides a good basis for Africa's industrialisation.

There are different approaches to regional integration in Africa – few would argue against it, but there are different views as to the form it should take. Neo-liberal approaches focused on just removing trade barriers can be contrasted with 'developmental regionalism' (see Ismail 2021). There are also different perspectives concerning the extent to which regional integration should extend to the movement of people, in addition to the movement of goods, services and capital.

The AfCFTA is a fundamental development with the potential to be a 'game-changer' for industrial development in Africa. The AfCFTA is the largest free-trade area in the world (by number of participating countries). It aims at a single market for goods and services contributing to the movement of capital and persons, and at laying the foundation for a later Continental Customs Union. Regional integration in Africa is projected to have significant net benefits for the continent, including in growth and in poverty alleviation. The broader goals of the AfCFTA explicitly include structural transformation and industrialisation, and the vision is one in which these are integrally intertwined with trade and regional integration.

Beyond the immediate economic benefits, the AfCFTA can be understood as one part of giving effect to post-independence dreams of a united Africa, pan-Africanism, and economic independence. Without overly romanticising the AfCFTA in this spirit, it is important for a regional integration project to be animated by a vision that goes beyond economic benefits.

As with any processes of regional integration, there will inevitably be (at least relative) winners and losers, based both on prior conditions and on policy choices on how the integration unfolds. One particular concern is the need to ensure that nascent manufacturing sectors in the poorer and less industrialised countries are not thwarted by increased manufacturing imports from the more advanced industrialised economies of the continent. This underscores the importance of active steps to build manufacturing productive capabilities in the less advanced economies, including through their productive integration into regional value chains (RVCs).[12] Another issue is that removing trade barriers is only part of what is needed to significantly upscale trade within the continent. Non-tariff barriers, infrastructural deficiencies and border delays are among the issues needing to be addressed.

Green industrialisation

Lastly, it will be crucial for an African industrialisation agenda to take on board new developments, in particular the green transition. Industrialisation pathways in any country need to be environmentally sustainable.

Africa has made a negligible contribution to global climate change.[13] The advanced economies of today underwent centuries of industrialisation, causing vast environmental damage not limited to climate change. It would be morally and politically unacceptable to 'kick away the ladder' for late (or especially late, late) industrialisers. Having said that, it is also essential to recognise climate change as an existential crisis facing humanity, about

which all countries need to be concerned and to take action. The 'greening' of manufacturing is not only a moral imperative but also a 'business necessity' for successful industrialisation, as it will become increasingly difficult for firms to access large markets for goods not produced in an environmentally sustainable manner.

There are fundamental distributional issues – both national and international – with the green transition, which cannot be fully discussed here due to constraints of space. Considering the climate debt of the global North to the global South, and the rights of developing countries to pursue viable growth paths, two of the relevant issues are access to finance and access to technology for green industrialisation in Africa. Access to finance does not mean just credit facilities or soft loans, but significant net transfers of resource to directly fund a green transition. Access to technology is essential for viable green industrialisation in developing countries.[14] Provision of these is part of a 'Just Transition', especially in the context of the climate debt of the global North.

'Transformative Industrialisation for Africa' (TIfA)

In the discussions above, I have underscored the importance of industrialisation in Africa, reflected on the political economy of this, and have discussed just some key aspects of industrial development and policy in Africa. The 'grand vision' is one in which industrialisation is fundamentally transformative: 'Transformative Industrialisation for Africa' (TIfA).

Deep and sustained industrialisation can be transformative not only economically, but also socially and politically. Transformative industrialisation is broader than structural transformation. I identify four dimensions of industrialisation as potentially transformative. First, it needs to be *disruptive* – of existing political economy, comparative advantage, production systems, social relations and others that are sub-optimal for growth and development. Second, it needs to be *catalytic* of economic and social change. Third, the impact can be *systemic*, going more widely beyond growth and beyond just economic effects. Fourth, the effects can be *long-lasting*: not stop-start, but with long-term effects that endure even post-industrialisation.

I would suggest that industrialisation in Africa needs to meet certain conditions to be transformative. Scale is important (including the shares of manufacturing in GDP and in total employment). If manufacturing is of insignificant scale in an economy, and there is a lack of depth of industrialisation, it cannot have a broad transformative impact. Furthermore, while there will always be heterogeneity within each sector, the manufacturing

sector on balance needs to have higher productivity, greater complexity, and be more innovative and technology-intensive on average than the rest of the domestic economy in order to play that progressive transformative role. In addition, manufacturing needs to have strong and dense linkages with the rest of a domestic economy, not only to pull it along, but also to have a transformative impact. This does not refer only to forward and backward linkages, but also to technological linkages and spillovers, learning and transfers of knowledge and skills, and so on.

Industrial policy needs to take account of country specificities (as well as even sub-national, sectoral and other specificities within countries). TIfA will thus mean different things in different contexts. Space has permitted only a very brief discussion here. It is an ambitious agenda, asking us to look with fresh eyes at the potential of industrialisation, and to aim at a 'big push' as part of new growth and development pathways for African countries.

Conclusion

In noting that global conditions have changed since the rapid industrialisation successes of the four original NICs, Thandika opined in 1988 as follows:

> So obviously whatever industrialisation 'miracles' take place, or for that matter whatever reversal of the de-industrialisation process Africa achieves it will be under radically different conditions. There can, however, be no doubt that the current process of de-industrialisation, the dismantling of structures that sustained much of the industrialisation, the institution of social structures of accumulation that are highly volatile will once again leave Africa unprepared to capture whatever new opportunities an upturn in the world economy may have (Mkandawire 1988:31).

These prescient words were penned about a third of a century ago under different continental and global conditions. They remain relevant regarding both the problems of African industrialisation and its enduring importance, and in highlighting how underlying economic weaknesses constrain African countries from taking advantage of emerging opportunities. Yet I would suggest that we do have cause to be more cautiously optimistic now.

The SAPs dealt a long-lasting blow to African industrialisation. Path dependency, feedback loops and cumulative causation meant that what could have been a virtuous circle of building capabilities, upgrading, industrialisation and growth became a low equilibrium trap. The breaking down of productive capabilities through deindustrialisation cannot be reversed easily, and the collective nature of capabilities and of learning-by-doing mean that this has broader negative effects beyond individual firms.

Had Africa been able to maintain pre-SAPs rates of industrialisation or growth, or to follow pathways closer to its Asian counterparts, the continent would be very different today.

It is important, however, to recognise that very different choices could have been made, at least in the more than three decades since the SAPs. There is a dialectic between factors internal and external to a country, and countries do make choices that in turn have implications for the balance of forces and for their own policy space. Even within global constraints, African states have agency and have not been prevented from pursuing active industrial policy over all these intervening years. While there are always limited financial resources, capacity constraints and so on, it is in countries' domestic political economy that we can understand the failure of most countries on the continent to pursue effective industrial policy.

Industrial policy has made something of a comeback in Africa, even before its more recent return to prominence and mainstreaming internationally (Noman & Stiglitz 2015; Oqubay 2015; Whitfield *et al.* 2015; Cramer & Tregenna 2020; Lopes & Kararach 2020). Industrial development and policy now feature prominently in the visions and policy documents of governments as well as of regional and continental bodies of the continent. There is an ongoing battle of ideas as to the scope, purpose and instruments of industrial policy, and how it connects with other policy domains such as macroeconomic policy. Furthermore, implementation and outcomes have been uneven. The industrialisation successes of countries such as Ethiopia serve to demonstrate the possibilities of success, even in low-income countries with limited resources, where there is political will to industrialise and concrete actions taken to actualise this.

Concomitant with the changing fortunes of industrial policy in Africa has been changing interest in this field within academic research. In the 1980s and 1990s, there was a dearth of research on industrial development and policy in Africa. As well as the general struggles of many African universities during this time, the reliance on donor or consultancy funds for research, and the practical weaknesses of industrial development and policy during this period, meant that economic research was focused overwhelmingly on different issues. During this hiatus, Thandika was one of the few to continue impactful research in this field in Africa, along with some others based both on and outside of the continent. We can thus observe a generational gap in African researchers specialised in these issues. It is exciting to see the upsurge in interest and in active research in this field across the continent, especially among young scholars. We need ambitious research agendas that connect with the fundamental development questions facing African countries.

We have seen the rise and fall, and possibly now again the rise of industrial policy in Africa. Hopefully the current emphasis on industrial policy will be sustained, and there will be the intentionality and political will to make daring and sometimes difficult choices and to boldly implement on a scale that can make a difference. 'Transformative Industrialisation for Africa' (TIfA) is part of an ambitious pathway towards this. Let us re-ignite our ambitions of development and re-imagine an industrialised, prosperous and integrated Africa.

Notes

1. In referring to Mkandawire simply as 'Thandika' hereafter, those who knew him will understand that no disrespect is intended; the fact that people generally refer to him by his first name is indicative of the informality and affection of his interpersonal relations.
2. The comparisons in this paragraph are based on gross domestic product (GDP) per capita data sourced from the World Bank (2022).
3. Recent monographs on industrial development in Africa by African scholars include Chitonge (2019), Lopes and Kararach (2020) and Oqubay (2015).
4. For contributions on Thandika's broader thinking and on the wide range of his writings, see, for instance: the special issue of the *Journal of African Transformation* edited by Vusi Gumede (Gumede 2022); Cheru (2022); and the many tributes to him, including those collated in a special issue of the *CODESRIA Bulletin* (2020).
5. Seminal contributions in the Structuralist tradition include Chenery (1955), Furtado (1964), Hirschman (1958) and Prebisch (1950, 1963); see also Blankenburg *et al.* (2008) and Ocampo (2020) on the Structuralist approach.
6. In addition to Mkandawire, see Jalilian and Weiss (2000), Noorbakhsh and Paloni (1999) and Stein (1992) on the effects of the SAPs on industrialisation and deindustrialisation in Africa.
7. See also Adesina, 2011, and Bangura, 2007, who build on Thandika's thinking on the potentially developmental and transformative role of social policy.
8. See, for example, Humphreys (2005), Mildner *et al.* (2011), and Nillesen and Bulte (2014).
9. For instance, in the South African context, Andreoni et al. (2021b:351–352) point to the need for 'building a broad coalition for reindustrialisation' as part of a new political settlement in support of industrialisation, which includes constituencies such as the industrial working class, productive black entrepreneurs, and producers of high-value agricultural crops.
10. See, for example, Owusu (2021).

11. A recent econometric analysis across African firms points to a two-way relationship between innovation and export performance at the firm level. This suggests that firms both 'learn to export' through innovation, and also 'learn to innovate' through exporting (Avenyo *et al*. 2021b).
12. Ncube and Tregenna (2022) find that forward and backward linkages among southern African countries are especially high in the manufacturing sector, particularly in the food and beverages industry, and are strongest between neighbouring countries.
13. Although South Africa is highly emissions-intensive.
14. Avenyo and Tregenna (2022) find that medium- and high-tech manufacturing is less intensive in carbon dioxide (CO_2) emissions than is low-tech manufacturing in developing countries, and suggest that technology-intensification can be part of a route towards environmentally sustainable industrialisation. This underscores the importance of access to technology for African countries and other developing economies, both new 'green' technologies and technology access more broadly.

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Governance Issues and the Covid-19 Pandemic in West Africa: Are There Any Linkages?

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and Adjoua Math Komenan**

Abstract

This article contributes to a better understanding of the possible interaction between the spread of the Covid-19 pandemic in the ECOWAS countries and the state of governance. More specifically, it determines the relationship between governance and the number of Covid-19 confirmed cases by the end of September 2021, the relationship between tourist arrivals and external debt and the number of confirmed cases. The data was collected over 2020 and 2021. Correlation and multiple regression analysis were used to assess the strength of association between the variables and possible causation respectively. The study found positive and significant correlation between all the governance variables, except for political stability. There was a strong association between tourist arrivals, external debt, and infection rates. Governance did not significantly impact the infection rate, whereas the number of tourists and per capita external debt did so significantly. It is therefore recommended that more stringent actions be taken to reinforce safety measures at all entry points in the ECOWAS region and that development partners look closely at the reliability of the numbers of confirmed cases to ensure that the data collected is not manipulated simply to attract foreign resources.

Keywords: Covid-19; governance; tourism; external debt; ECOWAS

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Résumé

Cet article contribue à une meilleure compréhension de l'interaction possible entre la propagation de la pandémie de Covid-19 dans les pays de la CEDEAO et l'état de la gouvernance. Plus précisément, il détermine la relation entre la gouvernance et le nombre de cas confirmés de Covid-19 à la fin du mois de septembre 2021, le lien entre les arrivées de touristes et la dette extérieure, et le nombre de cas confirmés. Les données ont été collectées en 2020 et 2021. Une analyse de corrélation et de régression multiple a été utilisée pour évaluer la force d'association entre les variables, et de probable causalité. L'étude a trouvé une corrélation positive et significative entre toutes les variables de gouvernance, à l'exception de la de stabilité politique. Il existait une forte corrélation entre les arrivées de touristes, la dette extérieure et les taux d'infection. La gouvernance n'avait pas d'impact significatif sur le taux d'infection, contrairement au nombre de touristes ou la dette extérieure. Il est donc recommandé de recourir à des actions plus strictes pour renforcer les mesures de sécurité à tous les points d'entrée dans l'espace CEDEAO et que les partnaires au développement examinent de près la fiabilité des cas confirmés pour s'assurer que les données collectées ne sont pas manipulées dans le seul but d'attirer des ressources étrangères.

Mots-clés : Covid-19, gouvernance, tourisme, dette extérieure, CEDEAO

Introduction

In the wake of the year 2019, the world was hit with the news of a deadly novel virus named Covid-19. An infection that started in China in December 2019 as an outbreak turned into an epidemic and then spread all over the world to become a pandemic,[1] raising fear and anxiety. This pandemic ignited decisions at the highest level worldwide that had never been imagined before, except in fiction stories and movies. The world witnessed disputes between consumers over basic items like toilet paper in an Australian supermarket. This called the attention of leaders in the developed world to address what was to become a world tragedy. Indeed, faced with this deadly virus, nations took critical decisions that impacted and continue to impact on lives and ways of doing things the world over.

Despite vigorous reactions implemented by countries to halt the pandemic, it caused a global recession in 2020, annihilating countries' efforts for sustained growth and prosperity. Indeed, the World Bank's Global Economic Prospects (World Bank 2021a) indicated that the world economy contracted by 4.3 per cent in 2020. This contraction was also felt in advanced economies, where the contraction stood at 5.4 per

cent. Notwithstanding this contraction, in view of the measures taken by countries in the wake of this pandemic it is believed that prospects for the coming years will be better. Indeed, the world economy was expected to grow by 4.0 per cent in 2021 (World Bank, 2021b).

The decisive actions taken to stop the spread of the virus included but were not limited to, school closures and border closures. In addition, given the impact of Covid-19 on economic activities, countries put together different response plans which needed resources that were not always available. The ECOWAS countries did not remain actionless and drew up national response plans. Indeed, the cost of the health response plan amounted to USD 2,442.45 million by June 2020. Other interventions included support for the social sectors and the most vulnerable (ECOWAS, 2020).

To boost the available resources, countries resorted to mobilising funds from international partners as well as the financial market. The total amount mobilised through the financial markets by June 2020 stood at USD 12.67 billion. Despite these efforts, the spread of the pandemic continued, and varied from one country to the other. Indeed, in the ECOWAS region, as shown in Figure 1, the infection rate, computed as the number of confirmed cases over the population, varied from a low of 0.024 in Niger to a high of 6.687 in Cape Verde (Figure 2) by 30 September 2021, making that country the hardest hit in the ECOWAS region. Cape Verde was followed by Senegal (0.429), Ghana (0.402) and The Gambia (0.399). It is important to recall that the first confirmed cases in the region were registered in Nigeria on 27 February 2020 and Senegal on 28 February 2020 (WAHO 2020).

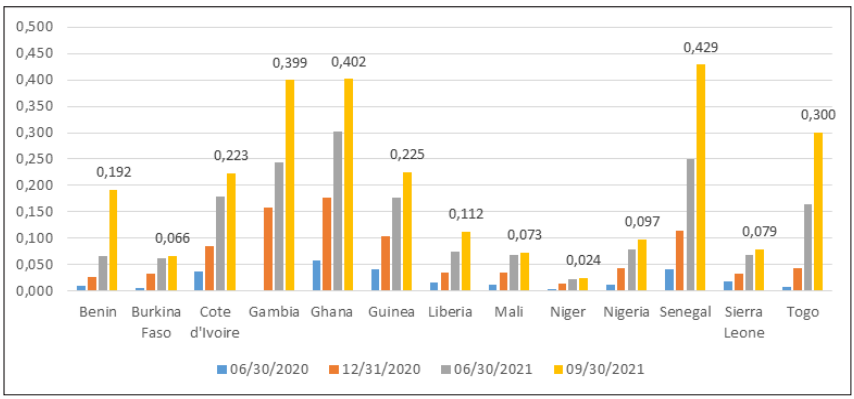

Figure 1: Infection rate, June 2020 to September 2021, excluding Guinea-Bissau

Source: Author's own, using data from University of Oxford, http://knoema.com/OXCovidGTR2020/oxford-Covid-19-government-response-tracker

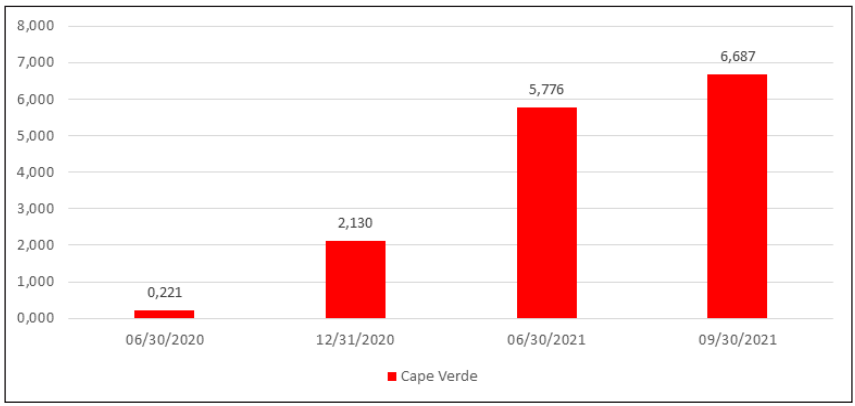

Figure 2: Infection rate, June 2020 to September 2021, in Cape Verde

Source: Author's own, using data from University of Oxford, http://knoema.com/OXCovidGTR2020/oxford-Covid-19-government-response-tracker

What could be the reason for such divergence in spread when the international community, through the development partners, mobilised resources to provide financial support to the affected countries? In the ECOWAS region, the total amount mobilised by June 2020 stood at USD 12.67 billion (Table 1 and Figure 3).

Table 1: Resources Mobilised by ECOWAS Member States through the International Community by 11 June 2020

COUNTRY	DEVELOPMENT PARTNERS[2] (USD M)	COUNTRY	DEVELOPMENT PARTNERS[3] (USD M)
Benin	219.62	**Liberia**	51.73
Burkina Faso	115.3	**Mali**	348.073[4]
Cape Verde	32	**Niger**	114.49
Côte d'Ivoire	1,144.786[5]	**Nigeria**	8,100
The Gambia	81.3	**Senegal**	442.1
Ghana	1,110	**Sierra Leone**	317.47[6]
Guinea	480	**Togo**	97.1
Guinea-Bissau	16	**ECOWAS**	**12,669.97**

Source: Member states response plan, www.imf.org/en/Topics/imf-and-Covid19/Covid-Lending-Tracker

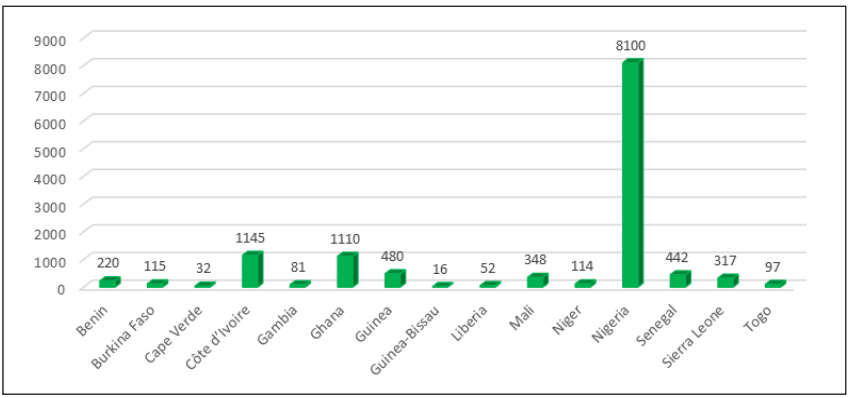

Figure 3: Resources mobilised by ECOWAS member states through development partners by 11 June 2020, in USD million

Source: Member states response plan,
www.imf.org/en/Topics/imf-and-Covid19/Covid-Lending-Tracker

In line with the above, it is of utmost importance to critically analyse the extent to which the spread of the virus was linked to the quality of governance in West African countries and some control variables, such as the number of tourists and external debt. The main objective of this paper is therefore to contribute to a better understanding of the possible link or interaction between the Covid-19 infection rate in West Africa and the state of governance in the countries of this region.

More specifically, the paper seeks to determine the relationship between:

1) governance indicators and the number of Covid-19 confirmed cases by the end of September 2021;
2) two control variables—tourist arrivals and external debt—and the number of confirmed cases.

The rest of the paper is organised as follows. The next section provides a trend analysis of governance in ECOWAS member states. It is followed by a brief analysis of the spread of the pandemic in the ECOWAS region. Selected literature on governance and the Covid-19 pandemic is then discussed, after which there is an analysis of the data and the method. The results are presented followed by the conclusion.

Governance in ECOWAS

The governance concept is analysed through six dimensions:

1. ***Voice and accountability***: Perceptions of the extent to which a country's citizens are able to participate in selecting their government, as well as the degree of freedom of expression, freedom of association and free media.
2. ***Political stability and the absence of violence***: perceptions of the likelihood of political instability and/or politically motivated violence, including terrorism.
3. ***Government effectiveness:*** perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies.
4. ***Regulatory quality***: perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development.
5. ***Rule of law***: perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police and the courts, as well as the likelihood of crime and violence.
6. ***Control of corruption***: perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as the 'capture' of the state by elites and private interests.

The governance indicators data are obtained from the World Bank.[7] The data on governance ranges from approximately -2.5, reflecting weak governance performance, to 2.5, which is strong governance performance.

Voice and Accountability

Figure 4 displays the evolution of the voice and accountability indicator for ECOWAS member states between 1996 and 2020. For visual clarity, four panels are used. The first panel presents the trends for Benin, Burkina Faso, Cape Verde and Côte d'Ivoire. Let's recall that the indicator ranges from -2.5 (weak) to 2.5 (strong). Over the period of analysis, Benin and Cape Verde were the two countries with acceptable voice accountability, since the indicator is above zero. In Benin, for instance, this indicator has been oscillating between zero and 0.5. Although it is not very strong, at least it is not weak. In Cape Verde, this indicator has been above 0.5 and remained constantly around 1 from 2008 till 2020. This is a clear indication of the importance of people's voices in this country. Burkina Faso and Cote d'Ivoire have weak voices and accountability. This is an indication

that decisions are made without concerns for the people's voice. In Côte d'Ivoire, although there was some improvement—since the indicator has an upward sloping trend from 2005, going from -1.29 to -0.25—voice and accountability remain a concern.

The second panel presents the trends for The Gambia, Ghana, Guinea and Guinea-Bissau. With the exception of Ghana, where the indicator is above zero and around 0.5, the remaining three countries have weak voice and accountability. Thus, voice and accountability are stronger in Ghana.

The third panel has to do with Liberia, Mali, Niger and Nigeria. Although Liberia, Niger and Nigeria registered some improvements in this indicator over the period of analysis, voice and accountability are very weak in these countries, remaining below zero. Contrarily, Mali had a positive indicator, although below 0.5 from 2001 to 2011. However, the situation deteriorated in 2012 and worsened till 2020, when the indicator stood at -0.73.

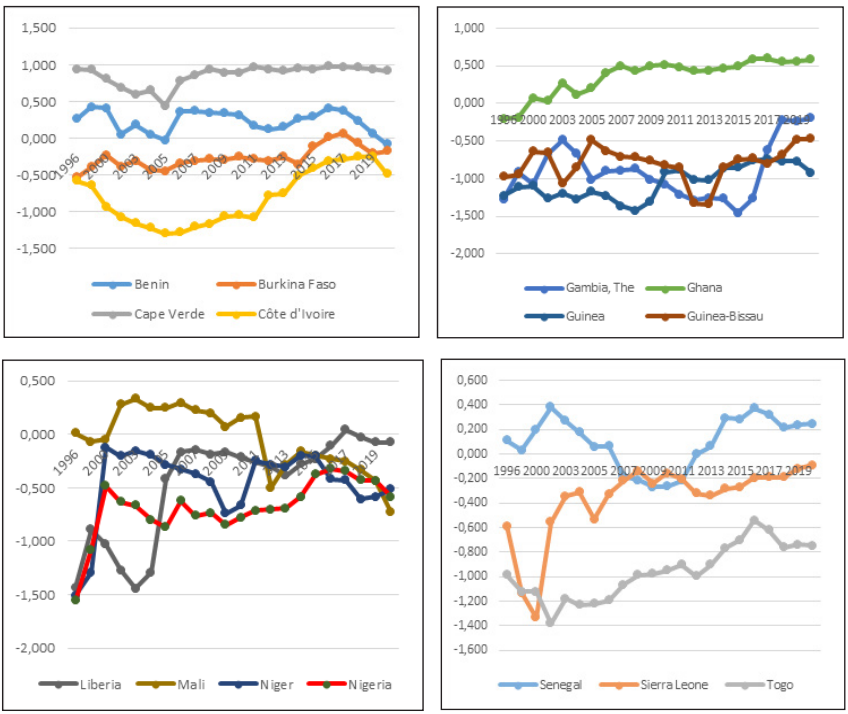

Figure 4: Trend of the voice and accountability indicator from 1996 to 2019 in selected ECOWAS member states

Source: Worldwide Governance Indicators - knoema.com

The fourth panel focuses on Senegal, Sierra Leone and Togo. Sierra Leone and Togo have an upward sloping trend of this indicator ranging from -1.33 in 2000 to -0.09 in 2020 for Sierra Leone and from -1.38 in 2002 to -0.74 in 2020 for Togo. Despite these improvements, this indicator remained below zero. Thus, voice and accountability remained weak in these countries. In contrast, Senegal showed an initial improvement of this indicator, going from 0.029 in 1998 to 0.38 in 2002. However, this indicator deteriorated thereafter to reach its lowest level in 2009, at -0.269. An improvement was registered in 2010 and continued in the following years and took this indicator into a positive sphere, although it remained below 0.4.

Overall, Benin, Cape Verde, Ghana and Senegal are therefore the countries in the ECOWAS region where people's voice matters to some extent.

Political Stability and Absence of Violence

The four panels in Figure 5 indicate the evolution of the political stability and absence of violence indicator for ECOWAS member states. The first panel presents the trends for Benin, Burkina Faso, Cape Verde and Côte d'Ivoire. Let's recall again that the indicator ranges from -2.5 (weak) to 2.5 (strong). Over the period of analysis, Benin's political environment deteriorated and became more violent. Indeed, the indicator dropped from 1 in 1996 to -0.5 in 2019. In Burkina Faso, the drop in this indicator started in 2007 and has been worsening since. It stood at -1.5 in 2019. Unlike Benin and Burkina Faso, Cape Verde has a stable political environment. Côte d'Ivoire experienced political instability throughout the period of analysis. The indicator remained consistently below -0.5.

The second panel presents the trends for The Gambia, Ghana, Guinea and Guinea-Bissau. This indicator started a downward trend in 2002 and continued till 2017 when the trend started sloping upwards. It remained overall above zero with the exception of the year 2017. Ghana enjoyed political stability and an absence of violence over most of the period of analysis especially early 2005, when the indicator was above zero. Guinea and Guinea-Bissau constantly had a politically unstable environment with violence. Indeed, the indicator for these two countries remained consistently below zero throughout the period of analysis.

The third panel presents the trends for Liberia, Mali, Niger and Nigeria. Liberia's political environment has not been stable despite the improvement registered. Indeed, the indicator remained consistently below zero although it is upward sloping. The situation in Mali started worsening in 2009 when the

indicator dropped below zero and continued plummeting until 2020, when it stood at -2.14. Niger experienced a deteriorating political environment from 1996 and its political stability and absence of violence indicator stood at -1.74 in 2020. Nigeria, too, experienced political instability throughout the period of analysis. The indicator remained consistently below -0.5 and stood at -1.86 in 2020.

The fourth panel presents the trends for Senegal, Sierra Leone and Togo. Despite improvements observed for these countries, the indicator remained consistently below zero, clearly indicating a lack of political stability and absence of violence.

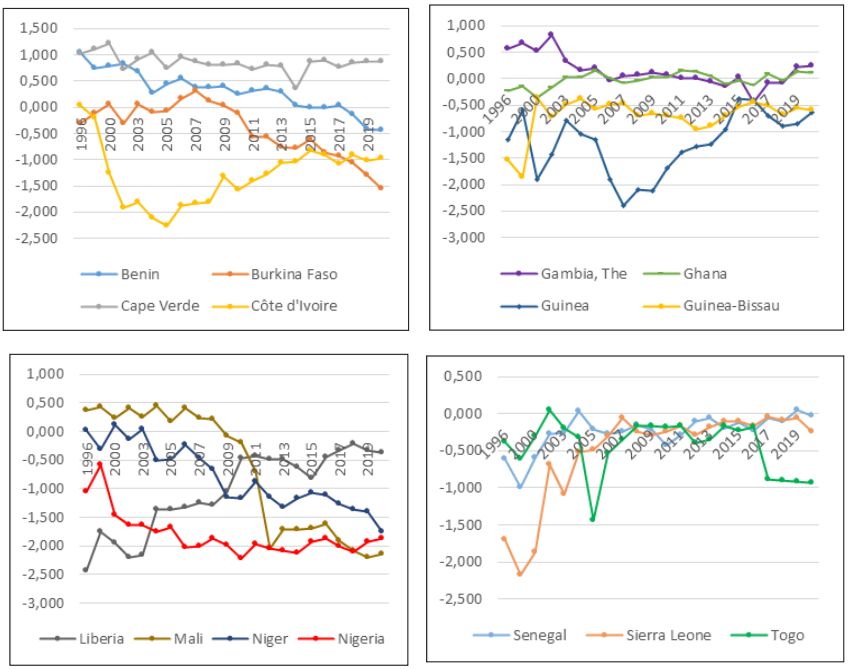

Figure 5: Trend of the political stability indicator from 1996 to 2019 in selected ECOWAS member states

Source: Worldwide Governance Indicators - knoema.com

Government Effectiveness

Figure 6 shows the evolution of the government effectiveness indicator for ECOWAS member States, also represented in four panels. Except for Cape Verde, for which the indicator is above zero, and Ghana, for a short period, the remaining countries are below zero, a clear indication of government ineffectiveness.

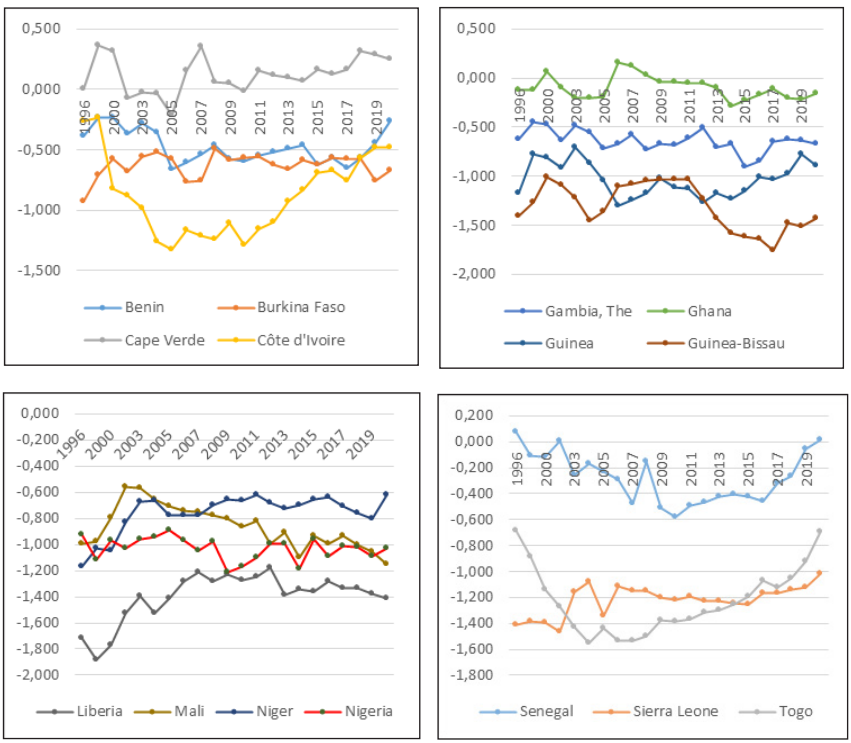

Figure 6: Trend of the government effectiveness indicator from 1996 to 2019 in selected ECOWAS member states

Source: Worldwide Governance Indicators - knoema.com

Regulatory Quality

Figure 7 depicts the evolution of the regulatory quality indicator for ECOWAS member states in four panels. Overall, this indicator is below zero except for Cape Verde and Ghana for some given years. This is a clear indication of poor regulatory quality in the ECOWAS member states over the period of analysis.

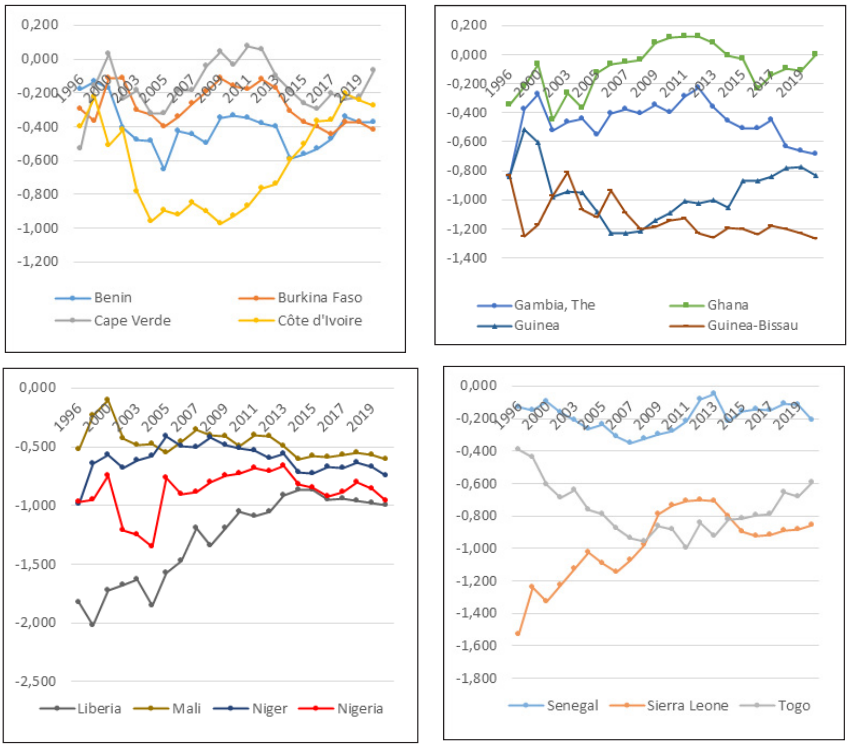

Figure 7: Trend of the regulatory quality indicator from 1996 to 2019 in selected ECOWAS member states

Source: Worldwide Governance Indicators - knoema.com

Rule of Law

Figure 8 illustrates the evolution of the rule of law indicator for ECOWAS member states. Except for Cape Verde and Ghana, all the remaining ECOWAS member states are characterised by weak rule of law since the indicator remained consistently below zero.

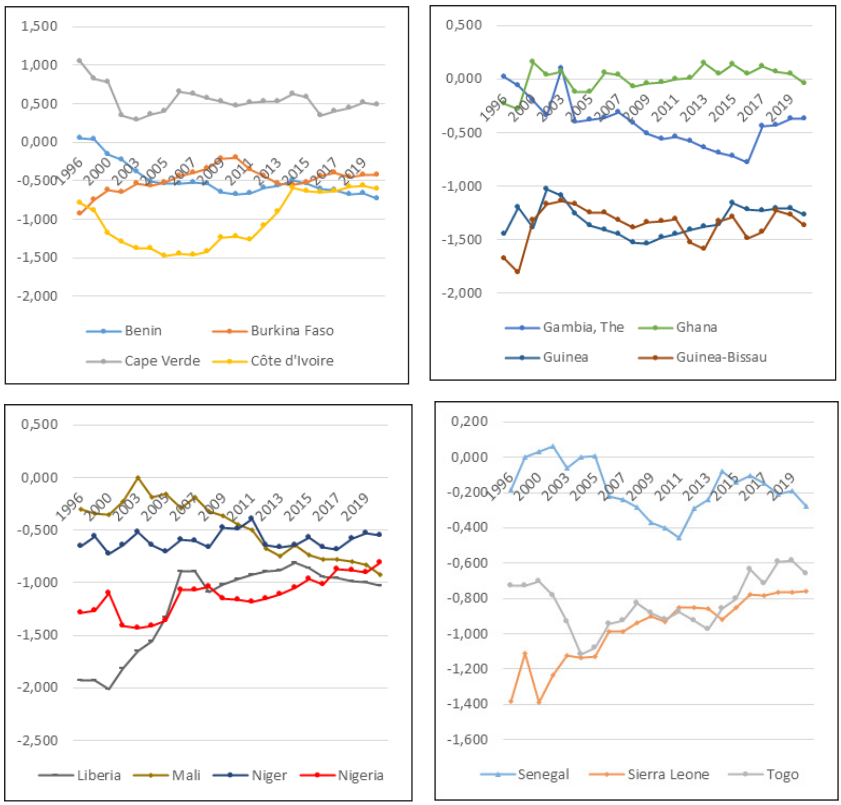

Figure 8: Trend of the rule of law indicator from 1996 to 2019 in selected ECOWAS member states

Source: Worldwide Governance Indicators - knoema.com

Control of Corruption

The control of corruption indicator for ECOWAS member states for the period of analysis is shown in Figure 9. Except for Cape Verde, all the ECOWAS member states are characterised by weak control to rampant corruption since the indicator remained consistently below zero.

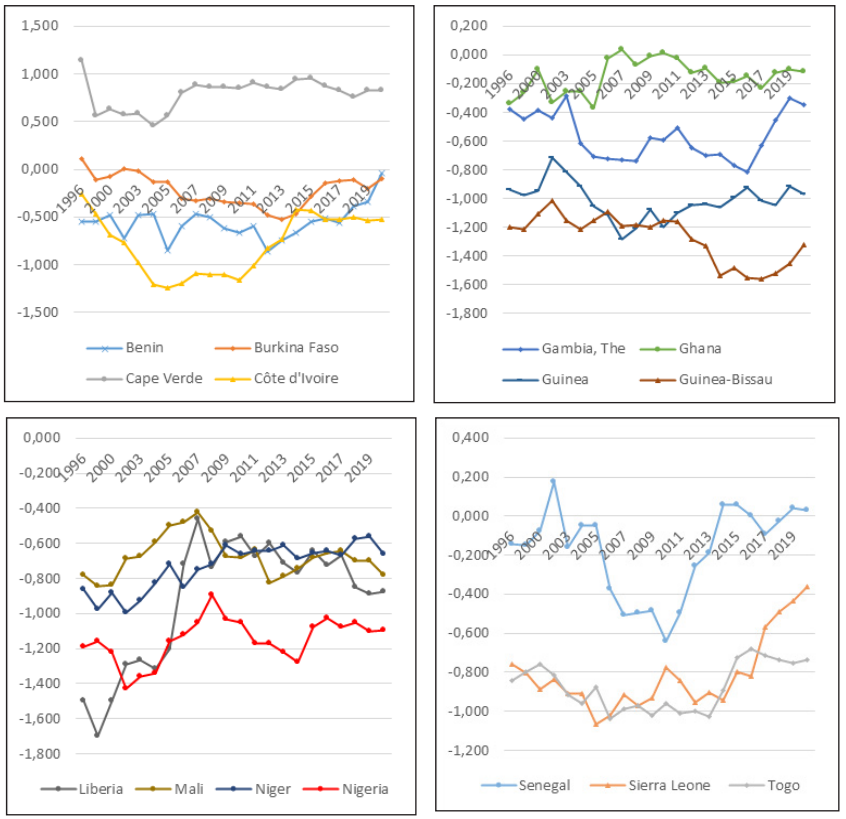

Figure 9: Trend of the control of corruption indicator from 1996 to 2019 in selected ECOWAS member states

Source: Worldwide Governance Indicators - knoema.com

Covid-19 in the ECOWAS Region: The Speed of Spread

Initially, the spread of Covid-19 was not fast in the ECOWAS region. After the first case was confirmed on 27 February 2020, the daily confirmed cases were below ten. However, on 15 March 2020 eighteen cases were confirmed, representing a 500 per cent jump from the day before. The following two days the number of new cases declined a bit before increasing on 18 March 2020. Figure 10 indicates that the number of confirmed cases in West Africa reached three peaks: 20 June 2020 to 15 August 2020; 28 December 2020 to 20 February 2021; 28 August 2021 to 24 September 2021.

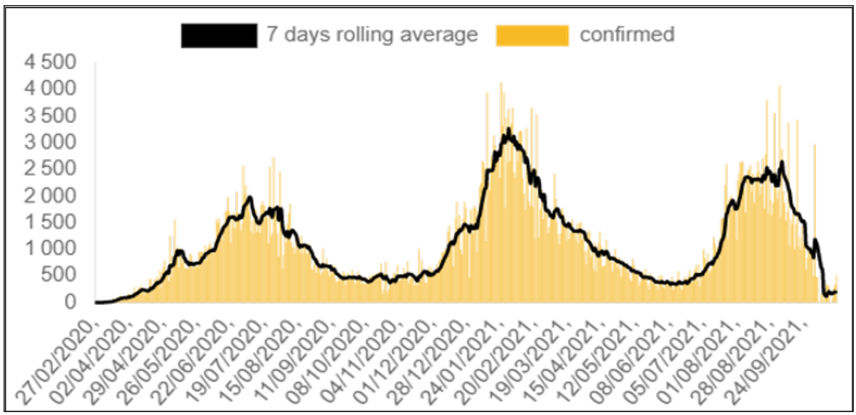

Figure 10: Trend of daily confirmed cases of Covid-19 in ECOWAS countries
Source: https://data.wahooas.org/outbreaks/#/

What could have been the reasons for these ups and downs? One could have been the laxity observed in the implementation of protective measures, i.e. wearing face masks, observing social distancing, washing hands with soap or using hand-sanitiser, among others. Indeed, the Government Response Stringency Index[8] (measuring the variation in government responses to Covid-19) calculated by the University of Oxford shows that most countries relaxed the implementation of these measures. It can be seen in Figure 11 that, except for Niger—with a steady increase of the Stringency Index from 30 June 2020 to 2 September 2021—this index dropped sharply for most of the countries during the period from 30 June 2020 to 31 December 2020. These countries include Burkina Faso, Côte d'Ivoire, Ghana, Guinea, Liberia, Nigeria, and Sierra Leone, all of which decided to loosen the implementation of the safety measures, with immediate consequences. Figure 10 reveals that the first peak of confirmed cases occurred during that period when the safety measures were loosened.

Following the increase in the number of confirmed cases, some countries decided to pay more attention to safety measures. These countries included Benin, Burkina Faso, Côte d'Ivoire, Ghana, Guinea, Liberia and Sierra Leone. The result was the decline of the number of confirmed cases, as shown in Figure 11. Overall, although some countries decided to tighten safety measures, others did not. These countries included Cape Verde, Ghana, Guinea, Liberia, and Sierra Leone. This lack of consistency in the implementation of the safety measures throughout the ECOWAS region clearly affected the number of confirmed cases, which has been and continues to be on the rise as depicted in Figure 12.

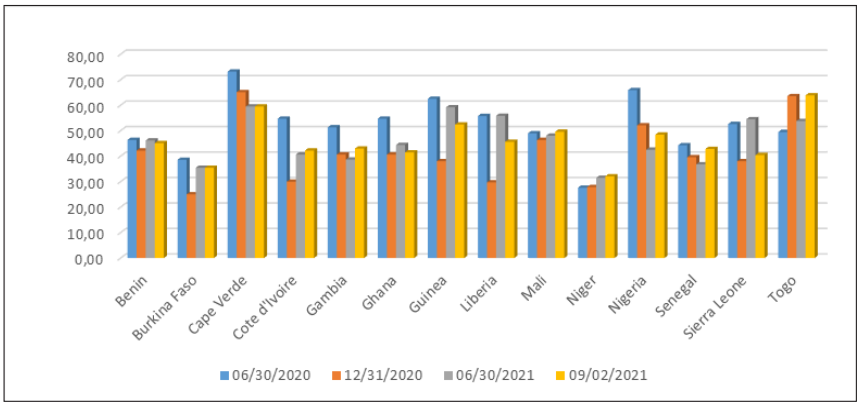

Figure 11: Index of ECOWAS government responses to Covid-19, June 2020–September 2021, excluding Guinea-Bissau
Source: University of Oxford

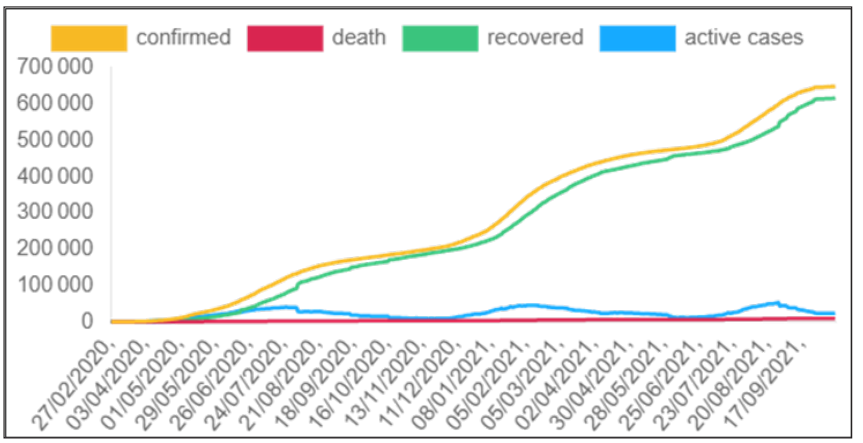

Figure 12: Trend of confirmed cases of Covid-19 in ECOWAS countries
Source: https://data.wahooas.org/outbreaks/#/

Literature Review

Research on issues related to Covid-19 is understandably quite recent and as such has not included many socioeconomic studies. Most of the studies on Covid-19 are health-related and do not focus specifically on its relationship with governance issues and economic performance. However, several studies have been undertaken recently to address some governance issues in line with the Covid-19 pandemic and non-governance factors such as tourism travel and external resources. These include Steingrüber *et al.* (2020), Teremetskyi *et al.* (2021), IMF (2021a), Farzanegan (2021), Farzanegan *et al.* (2021) and Gössling *et al.* (2020), just to cite a few.

Covid-19 Infection Rate and Governance Indicator

The World Governance Indicators have six dimensions, as described above. Among them two have been subject to analysis in respect of Covid-19. Indeed, Teremetskyi *et al.* (2021) in their study on corruption in the time of Covid-19 made the point that to contain the spread of the virus and reduce the infection rate there must be a strict practice of regulatory procedures. This clearly indicates that countries' performance in terms of regulatory quality should be strong. Hence, there should be a negative relationship between the level of regulatory quality and infection rate.

Farzanegan (2021) studied the effect of public corruption on Covid-19 fatality rates, using cross-section data, including sixty-four countries, and multiple regression techniques. The author found that the level of corruption is positively and significantly associated with Covid-19 fatality rate.

Covid-19 Infection Rate and Tourism

Gössling *et al.* (2020) conducted a rapid assessment of Covid-19 and tourism. They found that the fear of the number of confirmed cases increasing with the arrival of tourists led many countries to implement international travel bans. This led to a decline of 20 per cent to 30 per cent in tourist arrivals in 2019. Farzanegan *et al.* (2021) examined the relationship between international tourism and Covid-19 cases and associated deaths in more than ninety nations. They used a cross-country regression analysis and found a positive correlation between international tourism and the cumulated level of Covid-19 confirmed cases and death. Their results show that countries exposed to high flows of international tourism were more prone to cases and deaths caused by the Covid-19 outbreak.

Covid-19 and External Debt

The Covid-19 pandemic seriously affected the resource base of many countries, especially low-income developing countries. It exacerbated the economic hardship these countries were already confronting before the outbreak. Without assistance from the donor community, it would have been hard for them to ensure that their economies stayed afloat. Among the conditions to be eligible to benefit from the handouts from development partners (especially the IMF) was the human toll of Covid-19. This was indeed one of the conditions for eligibility to the Catastrophe Containment Relief Trust, or CCRT (IMF 2021a).

Method of Analysis and Data

In view of the spread of the Covid-19 in West Africa, it is hypothesised that governance issues could help to give a better understanding of what is happening. That is, the levels of governance indicators can explain the infection rates in the ECOWAS countries. To test this hypothesis, we follow the approach used by Farzanegan (2021) and specify the model to be estimated as follows:

$$IR_i = f(GI_i, X_i) + \varepsilon_i \quad (1)$$

where IR_i is the Covid-19 infection rate for country I, GI_i represents governance indicators for country i and X_i are control variables.

The dependent variable is the infection rate. It is calculated as the ratio of total Covid-19 confirmed cases to the total population of the country. It is based on the cumulative number of confirmed cases on 30 September 2021. The source of data is the University of Oxford Covid-19 Government Response Tracker.[9]

The independent variables include governance indicators and control variables. The governance indicators are taken from the Worldwide Governance indicators (WGI) project of the World Bank.[10] As indicated earlier, the governance indicators are made up of six dimensions of governance. As coded, these are voice and accountability ($Voice\_acc_i$), political stability and absence of violence (Pol_stab_i), government effectiveness (Gov_eff_i), regulatory quality (Reg_qual_i), rule of law ($Rule\_law_i$) and control of corruption ($Corrup_i$). These indicators range from -2.5 (weak performance) to +2.5 (strong performance).

In addition to the governance variables and to reduce the risk of omitted variable bias, we controlled for a set of drivers of the Covid-19 infection rate. The source for the control variables is the World Bank (2021). Given that the sample size is quite small, we are limited in terms of the number of control variables to consider. We therefore focused our attention on two critical ones: tourism arrivals ($tourism\_arr1_i$) and external debt (ext_debt1_i).

The first control variable (tourism arrivals) is justified by the fact that it was global connection and mobility that enabled the spread of the virus from China to the rest of the world. More importantly, in West Africa, the first confirmed case was linked to a forty-four-year-old Italian tourist who arrived who arrived in Lagos (Nigeria) on 27 February 2020. The second confirmed case was linked to a French citizen who arrived in Senegal on 26 February 2020 and was diagnosed on 28 February 2020. These two cases started the spread of the Covid-19 virus in West Africa via people's travels (WAHO 2020).

The second control variable considered is the volume of external debt. Indeed, with the spread of the virus, especially developing countries were in a tight corner due to insufficient or lack of financial resources to face the challenges brought about by Covid-19. Although all the countries resorted to developing response plans, they did not have the necessary resources to implement those plans. They therefore had to rely on external resources, which were not freely available. They needed to show that the threat of Covid-19 was serious, and that urgent action had to be taken to avoid a situation of chaos.

It is our belief that this situation led many developing countries to manipulate the number of infections so as to benefit from external resources. Recall the case of the 2018 Nobel Peace Prize Winner, Dr Mukwege, who resigned as head of a Covid-19 taskforce in the DRC. The official reason put forth was organisational problems, outpaced strategy and slow testing.[11] That was the politically correct reason in order to avoid sanctions from donors who had been assisting him in his professional work. However, Dr Mukwege's statement said clearly:

> I cannot in any case dirty my Nobel Peace Prize for money, we had been ordered to declare any illness to be coronavirus [sic] and any death. In addition, the thing that displeased me is that, after more than 100 samples none came out positive. I have a career to protect, and I am Congolese by blood. Getting rich by lying is a sin before God, I quit.[12]

Although this statement was tagged as fake, it is not a secret that in many instances the number of Covid-19 infections and fatalities were manipulated,[13] and we believe that this was more so for developing countries in order to attract external resources. It is in line with this thought that external debt variable is used as a control variable.

The infection rate variable and the control variables were subjected to logarithmic transformation. To avoid missing data points for a single year, we used the average over four years, i.e. 2017 to 2020, for tourist arrivals and external debt variables. The empirical model to be estimated is therefore as follows:

$$IR_i=\beta_0+\beta_1 Z_i+\beta_2 \text{tourism\_arr1}_i+\beta_3 \text{ext\_debt1}_i+\varepsilon_i \quad (2)$$

The above equation is estimated using ordinary least squares method with robust standard errors to correct for possible heteroskedasticity.

Empirical Results and Discussion

Descriptive Statistics

The descriptive statistics are presented in Table 2. With the exception of Liberia, where data on tourism arrivals was not available, the average number of tourist arrivals stood at 783,864 in 2020. The minimum number of tourists registered in the region stood at 52,300 for Guinea-Bissau and a maximum of 3.9 million for Nigeria. On average, external debt per capita stood at USD 536. The minimum per capita external debt stood at USD 143.259 for Niger and the maximum was USD 3,278.879 for Cape Verde.

By 30 September 2021, the cumulative number of confirmed Covid-19 cases stood on average at 43,219. The lowest number of confirmed cases was in Liberia (5,799) whereas the highest number of confirmed cases was in Nigeria (205,779).

On the governance indicators, the countries performed weakly on average in all six dimensions. Indeed, the mean value for these indicators are all negative. However, there were individual differences. On the corruption variable, the worst performer was Guinea-Bissau (-1.463) whereas the best performer was Cape Verde (0.811). On regulatory quality, the performance of all fifteen countries was poor. The worst performance (-1.219) was registered by Guinea-Bissau, whereas the best performance, which was also negative (-0.086), was registered by Ghana.

Table 2: Descriptive statistics of the variables of interest

VARIABLE	OBS	MEAN	STD. DEV.	MIN	MAX
tourism_arr	14	783,864.500	1,070,869.000	52,300.000	3,988,824.000
ext_debt1	15	536.021	785.699	143.259	3,278.879
corrup	15	-0.509	0.532	-1.463	0.811
rule_law	15	-0.601	0.463	-1.321	0.463
reg_qual	15	-0.585	0.335	-1.219	-0.086
gov_eff	15	-0.740	0.478	-1.545	0.256
pol_stab	15	-0.643	0.811	-2.086	0.844
voice_acc	15	-0.169	0.487	-0.801	0.948
conf_c_ sep21	15	43,219.670	55,988.460	5,799.000	205,779.000

Source: Author's estimations

Pairwise Correlation

The correlation coefficient between two variables is a measure of the degree to which the movement of these two variables is associated. In other words, it measures how strong the relationship is between two different variables. Although it does not provide any indication of causation it does at least provide some kind of insight as to the strength of the relationship between two variables. Table 3 shows pairwise correlation coefficients for the variables of interest and their level of significance. Thus, it is observed that the correlation coefficient between the number of confirmed cases of Covid-19 and the governance indicators, with the exception of the political stability variable (0.731), are all positive and significant (with the exception of the regulatory quality variable) but below 0.6, indicating that the relationship is not that strong. However, the correl!ation coefficients between the number of confirmed cases of Covid-19 and the control variables are above 0.7 and significant, indicating a strong relationship.

Table 3: Pairwise correlation between the variables of interest

	ln-confi_sep21	corrup	rule_law	reg_qual	gov_eff	pol_stab	voice_Acc	lntourism_arr1	lnext_debt1
ln-confi_sep21	1.000								
corrupt	0.561*[a]	1.000							
	(0.030)								
rule_law	0.584*	0.930*	1.000						
	(0.022)	(0.000)							
reg_qual	0.418	0.818*	0.836*	1.000					
	(0.121)	(0.000)	(0.00)0						
gov_eff	0.595*	0.899*	0.914*	0.921*	1.000				
	(0.019)	(0.000)	(0.000)	(0.000)					
pol_stab	0.731*	0.589*	0.533*	0.330	0.505	1.000			
	(0.002)	(0.021)	(0.041)	(0.230)	(0.055)				
voice_acc	0.598*	0.849*	0.824*	0.684*	0.759*	0.684*	1.000		
	(0.019)	(0.000)	(0.000)	(0.005)	(0.001)	(0.005)			
ln-tourism_arr1	0.871*	0.553*	0.623*	0.405	0.581*	0.628*	0.508	1.000	
	(0.000)	(0.040)	(0.017)	(0.151)	(0.030)	(0.016)	(0.064)		
lnext_debt1	0.879*	0.717*	0.758*	0.633*	0.744*	0.648*	0.796*	0.793*	1.000
	(0.000)	(0.003)	(0.001)	(0.011)	(0.002)	(0.009)	(0.000)	(0.001)	

Source: Author's estimations

Note: Asterisks indicate significance at 5% probability level

Regression Results

The results presented in Table 4 indicate that our assumption that governance issues could explain the number of confirmed cases in ECOWAS member states is not tenable given the data available. This result does not support the argument put forth by Farzanegan (2021), who found a strong relationship between corruption and Covid-19 fatality rate.

Table 4: Parameter estimate of equation 2. Dependent variable = rate of Covid-19 infection (ratio of no. of confirmed cases over total population), 30 September 2021

	MODEL 1	MODEL 2	MODEL 3	MODEL 4	MODEL 5	MODEL 6
corrup	-0.329					
	(0.385)[a]					
rule_law	-	-0.671				
	-	(0.228)				
reg_qual	-	-	-0.763*[b]			
	-	-	(0.085)			
gov_eff	-	-	-	-0.432		
	-	-	-	(0.281)		
pol_stab	-	-	-	-	0.366*	
	-	-	-	-	(0.066)	
voice_acc	-	-	-	-	-	-0.294
	-	-	-	-	-	(0.695)
lntourism_arr1	0.398***	0.414***	0.358***	0.394***	0.349***	0.366***
	(0.001)	(0.002)	(0.007)	(0.002)	(0.013)	(0.031)
lnext_debt1	0.953***	1.064***	1.051***	0.989***	0.623***	0.991
	(0.004)	(0.007)	(0.000)	(0.003)	(0.006)	(0.106)
_cons	-10.500***	-11.318***	-11.47***3	-10.861***	-8.324***	-10.720***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.017)
R-squared	0.862	0.878	0.874	0.863	0.882	0.857
Adj. R-squared	0.821	0.841	0.837	0.822	0.847	0.814
F-stat$_{(3,10)}$	23.660***	29.460	38.880***	30.000***	44.520***	25.900***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)

Source: Author's estimations

Notes: Numbers in parentheses are p-values; asterisks are indication of significance level. Thus, * and *** represent 10% and 1% significance levels

It was also found that, regardless of the model considered, the number of tourists arriving impacted significantly on the number of confirmed cases of Covid-19 in the ECOWAS member states. The empirical results show that an increase in the number of tourists arriving by 1% is associated in model 1 with a 0.39 per cent increase in the number of confirmed cases of Covid-19 in the ECOWAS countries. This effect is statistically significant. This result is in line with that of Farzanegan *et al.* (2021). This supports the idea that the Covid-19 infection was imported into the ECOWAS region. Thus, with the new wave of Covid-19 infection in Europe and North America, actions should be taken to reinforce safety measures at all entry points in the ECOWAS region. This includes but is not limited to systematic PCR tests, hand sanitisation, social distancing and body temperature checks, among others.

When the second control variable (external debt) is considered, an increase of per capita external debt by 1 per cent is associated in model 1 with a 0.95 per cent increase in the number of confirmed cases of Covid-19 infection in the ECOWAS countries. This effect is statistically significant. It is observed that, with the exception of model 6, in all the remaining five models per capita external debt has a positive and significant impact on the number of confirmed cases of Covid-19 infection.

To dig further into this, reverse regression was estimated (with per capita external debt as the dependent variable and Covid-19 infection as the explanatory variable). The results are presented in Table 5. As expected, it was observed that, with the exception of model 5, in all the remaining five models the number of confirmed cases of Covid-19 infection had a positive and significant impact on per capita external debt. For instance, model 1 reveals that a 1 per cent increase in the number of confirmed cases of Covid-19 infection is associated with a 0.43 per cent increase in per capita external debt. This result supports our assumption that countries could possibly manipulate the number of confirmed- cases of Covid-19 infection to harness resources from development partners.

Another result that is worth indicating is the positive and significant relationship between per capita external debt and governance indicators. This clearly supports the idea that development partners pay attention to governance issues in the ECOWAS countries before approving financial support. Thus, improvement in these indicators is associated with increased per capita external debt.

Table 5: Parameter estimates of the reverse regression. Dependent variable = external debt (average over the period 2017–2020

	MODEL 1	MODEL 2	MODEL 3	MODEL 4	MODEL 5	MODEL 6
lnconfi_sep21	0.433**	0.451**	0.461	0.409**	0.483	0.291**
	(0.028)	(0.017)	(0.007)	(0.035)	(0.103)	(0.016)
corrup	0.494**					
	(0.027)					
reg_qual		0.840***				
		(0.008)				
rule_law			0.698***			
			(0.005)			
gov_eff				0.657***		
				(0.008)		
pol_stab					0.017	
					(0.923)	
voice_acc						0.726***
						(0.000)
lntourism_arr1	0.011	0.022	-0.046	0.009	0.064	0.091
	(0.955)	(0.892)	(0.785)	(0.958)	(0.784)	(0.469)
_cons	8.785	9.159	8.923	8.856	9.049	8.085
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
R-squared	0.845	0.866	0.869	0.859	0.774	0.896
Adj. R-squared	0.799	0.826	0.829	0.817	0.706	0.864

Source: Author's estimations

Notes: Numbers in parentheses are p-values; asterisks indicate significance level. Thus, * and *** represent 10% and 1% significance levels

Conclusion

The main objective of this paper was to determine the possible link or interaction between the spread of the Covid-19 pandemic in the ECOWAS region, as proxied by the number of confirmed cases of Covid-19 infection, and the state of governance in the ECOWAS countries. More specifically, the paper sought to determine two relationships: between governance indicators and the number of Covid-19 confirmed cases by the end of September 2021; and between the two control variables of tourism arrival and external debt and the number of confirmed cases of Covid-19. The data used was collected for the fifteen members of the ECOWAS community over 2020 and 2021. Correlation and multiple regression analysis were used to assess the strength of association between the variables and possible causation respectively.

We found a positive and significant correlation between all the governance variables, with the exception of the regulatory quality variable. However, the strength of association is not high given that the coefficients are all below 0.6 (with the exception of the political stability variable with a coefficient of 0.731). When we considered the control variables (tourism arrival and external debt), the correlation coefficients are above 0.7 and significant, indicating a strong association.

With the multiple regression analysis, we found that the governance indicators did not significantly impact on the number of confirmed cases of Covid-19 infection in the ECOWAS region. However, the number of tourists arriving did significantly impact on the rate of Covid-19 infection in the ECOWAS member states. Indeed, the empirical results indicate that an increase in the number of tourists arriving by 1 per cent is associated in model 1 with a 0.39 per cent increase in the Covid-19 infection rate in the ECOWAS countries. This supports the idea that Covid-19 infection was imported into the ECOWAS region. Thus, it is recommended that more stringent actions be taken to reinforce safety measures at all entry points in the ECOWAS region.

Finally, it was also found that per capita external debt is significantly related to the number of confirmed cases of Covid-19 infection in the ECOWAS region. An increase of per capita external debt by 1 per cent is associated in model 1 with a 0.95 per cent increase in the number of confirmed cases. Thus, the higher the number of confirmed cases of Covid-19 infection, the higher the level of external resource mobilisation. It is therefore recommended that development partners pay close attention to the reliability of the Covid-19 confirmed cases to ensure that data collected is not manipulated or tempered with just to attract foreign resources.

Notes

1. https://daily.jstor.org/whats-the-difference-between-pandemic-epidemic-and-outbreak/
2. Loans and grants.
3. Loans and grants.
4. *348,073 million de dollars confirmés à ce jour. Les appuis en cours de préparation sont de l'ordre de 272,86 millions de dollars.*
5. *669,7 milliards de FCFA (FMI: 536 milliards; BM: 118,7 milliards et BOAD: 15,0 milliards) au taux de change USD 1 = CFA 585.*
6. European Union (28.28 m); World Bank (100 m); AfDB (24.4 m); IMF-RCF programme (143 m) and IMF-ECF programme (21.8 m).
7. Worldwide Governance Indicators - knoema.com
8. This is a composite measure. It is a simple additive score of seven indicators measured on an ordinal scale, rescaled to vary from 0 to 100 (Hale and Webster 2020).
9. http://knoema.com/OXCOVIDGTR2020/oxford-covid-19-government-response-tracker
10. https://info.worldbank.org/governance/wgi/
11. https://www.france24.com/en/20200610-nobel-laureate-mukwege-quits-dr-congo-covid-19-team-blasts-govt-response.
12. https://www.reuters.com/article/uk-factcheck-mukwege-idUSKBN23W1QL
13. https://www.lindependant.fr/2021/03/19/pyrenees-orientales-les-statistiques-des-hospitalisations-covid-pour-chaque-etablissement-de-soins-du-departement-9437943.php

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From Epidemic to Pandemic: Covid-19, Insecurity and Development in the Sahel

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Abstract

Security is a sine qua non for development. The Sahel is a troubled region and is described as the hotbed of insecurity in Africa. This state of insecurity was compounded by the outbreak of Covid-19. This article examines the regional impact of the pandemic on insecurity and development. It uses a meta-analysis and reviews secondary data to underscore the security and development imbroglio in the Sahel within the context of Covid-19. It was found that Covid-19 exacerbated the insecurity threat in the region due to pre-existing weak governance, poor capacity, grievances and climate change, which had already resulted in fragility, food insecurity, displacement, loss of livelihood, poverty, unemployment, hunger and a humanitarian crisis. The study concludes that armed groups took advantage of the health crisis to prolong conflicts which, coupled with the pre-existing economic conditions, became anathema to development. The article recommends that governments in the region should increase their health budget and enhance their capacity to respond to health emergencies such as the Covid-19 outbreak. The article further recommends that governments in the Sahelian states should prioritise good governance, improved security and regional cooperation to combat poverty.

Keywords: Covid-19; insecurity; development; Sahel; conflict; fragility; governance

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Résumé

La sécurité est une condition sine qua non du développement. Le Sahel est une région troublée et est décrit comme le foyer de l'insécurité en Afrique. Cet état d'insécurité a été aggravé par l'épidémie de Covid-19. Cet article examine l'impact régional de la pandémie sur l'insécurité et le développement. Il utilise une méta-analyse et passe en revue des données secondaires pour souligner l'imbroglio de la sécurité et du développement au Sahel dans le contexte du Covid-19. Il est révélé que le Covid-19 a exacerbé la menace d'insécurité dans la région en raison de la faiblesse préexistante de la gouvernance, du manque de capacités, des griefs et du changement climatique, déjà sources de fragilité, d'insécurité alimentaire, de personnes déplacées, de perte de moyens de subsistance, de pauvreté, de chômage, de faim et de crise humanitaire. L'étude conclut que les groupes armés ont profité de la crise sanitaire pour prolonger les conflits qui, couplés aux conditions économiques préexistantes, sont devenus un frein au développement. L'article recommande aux gouvernements de la région d'accroître leur budget santé et de renforcer leurs capacités à répondre aux urgences sanitaires telles que l'épidémie de Covid-19. L'article recommande, en outre que les gouvernements des États sahéliens accordent la priorité à la bonne gouvernance, à l'amélioration de la sécurité et à la coopération régionale pour lutter contre la pauvreté.

Mots-clés : Covid-19 ; insécurité ; développement ; Sahel ; conflit ; fragilité ; gouvernance

Introduction

The Sahel is one of the most troubled regions in Africa due to its experience with poverty, low human-capital development and insecurity. The region consists of ten countries, namely Burkina Faso, Cameroon, Chad, The Gambia, Guinea, Mauritania, Mali, Niger, Nigeria and Senegal. It faces a scourge of insecurity perpetrated by violent extremist groups, insurgents, separatists, militant Fulani herders, terrorists and other armed non-state actors. The most popular armed non-state actors in the Sahel (hereafter the region) are Al-Qaeda in the Islamic Maghreb (AQIM), the Islamic State in the Greater Sahara (ISGS), Ansar al-Din and Macina Liberation Front (FLM), Jama'at Nasr al-Islam wal Muslimin (JNIM), MUJAO/ Al-Mourabitoun, Ansarul Islam and Katibat Serma/Katibat AAA. These groups are active in Niger, Mali and Burkina Faso, while Boko Haram and its splinter group, Islamic State's West Africa Province (ISWAP), are active in Nigeria and Chad (Africa Centre for Disease Control and Prevention 2020; Tarif 2022). These groups are responsible for kidnapping for ransom,

abduction, hostage-taking and human rights violations (Thompson 2021). The incessant violence, attacks, kidnappings and banditry are often cloaked as an ethnic-based crisis and competition for control.

The area is enmeshed in a spiralling crisis and confronted by other serious challenges, such as poverty, internal displacement, climate change and fragile institutions (Bøås and Strazzari 2020). Moreover, the Sahelian states score low on the world fragility index and are categorised as either alert or high-alert states (Fiertz 2021). Of course, the political challenge in one country assumes a transnational stance that affects neighbouring states. Thus, the security threat in one of the Sahel states has implications for the others (UNOWAS 2020).

Meanwhile, it is believed that the outbreak of the Covid-19 pandemic further exacerbated these security and developmental challenges (Columbo and Harris 2020), and as Lu and Lin (2021) claim, the pandemic led to an increase in economic uncertainty which stimulated insecurity and behavioural change. Such uncertainties, which include unemployment and underemployment, job instability, income loss, salary reduction and depleted savings, lead to mental stress and make people vulnerable to erratic (and violent) behaviour.

Although deadly and contagious diseases are not alien to Africa (it confronted the Ebola epidemic in 2014, for example), Covid-19 impacted the region in an unprecedented way, leading to the diversion of humanitarian and peacekeeping resources to combat it (Chukwufumnaya and Oghuvbu 2020). Further, the pandemic served as a threat multiplier and stressor of pre-existing grievances over perceived inequality, exclusion and marginalisation. As such, the pandemic fuelled long-standing tensions, exacerbated civil unrest and disrupted peacebuilding activities (Ossai 2021). This is corroborated by Obi and Kabandula (2021):

> while there is an emerging consensus that Covid-19 is not directly triggering new conflicts or radically altering the levels of pre-pandemic conflicts, there is no doubt of its disruptive impacts in exacerbating socio-economic inequalities and provoking social tensions/unrest that feed drivers of conflict and insecurity. (2021:314)

Although it is suggested that there is little correlation between Covid-19 and conflict (Coning and Ngubane 2021), it is impossible to ignore the fact that non-state actors have taken advantage of the opportunities presented by the pandemic and the underlying prevalent inequality and social contradictions to further their interests (Obi and Kabandula 2021).

It is believed that the developmental and security challenges in the Sahel were exacerbated during the pandemic. Gain (2022) argues that the drop in oil prices led to recession in Niger, Nigeria and Mauritania, while the general restriction of movement inhibited transhumant activities in the Lake Chad Basin. By implication, the recession led to socioeconomic problems such as poverty and unemployment, while the tension between pastoralists and farmers intensified. Meanwhile, the closure of borders and reduction in agricultural activities also led to low agricultural productivity and food insecurity. The overarching effect of these is recurring violence, civil unrest and fragility that threatens to drive the countries in the Sahel to state collapse.

Undertaking this study thus becomes imperative, to pigeonhole the security and development imbroglio in the Sahel within the context of Covid-19. Development here is seen through the lens of Adamolekun (2018), who defines it 'as the enhancement of the quality of life of citizens: meeting the basic needs for food, shelter, good health and education, and a general sense of well-being' (2018:2). According to Al-Saidi, Saad and Elagib (2022), Covid-19 was a stressor for developmental and economic challenges, especially in a region with pre-existing vulnerability. Moreover, given that security is transnational, this challenge—if left unaddressed—poses a great risk to neighbouring African countries and may increase the incidence of migration and global humanitarian crises.

Although a plethora of studies have been devoted to the discourse on Covid-19 and its effect on society (Akanmu et al 2021; Akinyetun *et al.* 2021c; Chukwufumnaya and Oghuvbu 2020; Coning 2021; Iweze 2020; Lu and Lin 2021), a global crisis like the coronavirus pandemic alters the workings of the international system and disrupts the sociopolitical norms of regions differently (Chukwufumnaya and Oghuvbu 2020). It is given this realisation that this study examines the regional implications of the disease, particularly on security and development. This interest is based on the presupposition that security is a sine qua non for development and therefore the impact of the pandemic on the security of the region will have a knock-on effect on its development. This study, therefore, reviews secondary data sourced from peer-reviewed journal articles, briefs, reports, working papers and Internet sources from notable and creditable organisations to present a coherent discussion.

The next section is an appraisal of the Sahel as a troubled hotbed of insecurity. This is followed by an overview of the onset of Covid-19 in Africa. The fourth section reviews the impact of Covid-19 on insecurity and development in the Sahel with particular reference to security threats, human security and widespread economic challenges. The paper then ends with a conclusion.

The Sahel

The Sahel defines the vast 5,900 km area of arid land in sub-Saharan Africa that spans the continent, from the Atlantic coast in West Africa to the Red Sea in East Africa. The region lies south of the Sahara Desert separating the desert to the north and the tropical savanna to the south (between 10° and 20°N). The region comprises ten countries (see Figure 1): Senegal, Burkina Faso, Mali, Guinea, Mauritania and The Gambia, as well as the states that border Lake Chad—Cameroon, Nigeria, Chad and Niger (Biasutti 2019; Tomalka *et al*. 2021). The region has attracted enormous scholarship due to its strategic location and contrasting position as a land of opportunities and challenges. The Sahel is a region blessed with abundant natural resources, yet it is characterised by poverty and developmental quandaries. As a region with a youthful population, the challenge of youth unemployment and youth grievance has increased the chances of radicalisation and violence. In addition, the area is plagued with a humanitarian crisis, climate change, energy poverty and dwindling resources, thereby fomenting insecurity and insurgency in the region. As a result, this section examines the Sahel and discusses the main challenges undermining its development.

Figure 1: The Sahel region, Africa
Source: United Nations (2021)

A Troubled Region

The Sahel is a land of opportunities and challenges. It is richly endowed with human, energy and natural resources (UN 2020), yet it is the world's most neglected and conflict-ridden region (Skretteberg 2019). The Sahel is best viewed using a climatic and territorial prism, as it refers to the zone between the savanna and the Sahara (Kwasi *et al.* 2019). The region comprises poor and insecure countries with the world's harshest climate. Its low-income, least business-friendly and low-purchasing-power-parity states earn their income largely from minerals and oil. Over 40 per cent (about 33 million) of the 81 million people in the G5 Sahel countries (Mauritania, Mali, Niger, Burkina Faso and Chad) live in extreme poverty, while the workforce is engaged in subsistence agriculture that is disconnected from the rest of the economy (Kwasi *et al.* 2019).

The region also has a significantly growing population, with a 2.5–4.0 per cent growth rate and a fertility rate between 4.1 and 7.6 children per woman (May and Guengant 2014). For instance, Niger's population, one of the fastest-growing in the world, is projected to increase by 175 per cent in 2050, from 24.2 million people to 65 million. However, the non-commensurate resource capacity means that competition for the available resources will continue to cause conflict. This was the case in Mali in 2019, when the dispute between Fulani herders from Burkina Faso and Malawian villagers in Mali led to the death of over thirty people (Vision of Humanity 2021).

Characterised by bad governance, a non-functional social contract and challenged state legitimacy, the Sahel is one of the most politically fragile regions in the world. This is the result of multifaceted challenges, such as the 2011 and 2012 Libya and Mali crises and the proliferation of jihadi insurgencies coupled with prolonged socioeconomic calamities such as climate change, population growth, widespread poverty and resource scarcity (Osland and Erstad 2020). The fall of Muammar Gaddafi in 2011 saw an influx of armed Tuareg fighters from Libya to Mali, which became an enabler of armed rebels in the region. This, together with the rise of jihadist groups such as ISGS and JNIM in Africa saw the conflict in the region escalate. These groups took advantage of domestic conflict and anti-state proclivity to challenge state legitimacy by providing informal governance where the state was failing (Bøås, Osland and Erstad 2019). The groups have since multiplied and spread to neighbouring Niger and Burkina Faso (Skretteberg 2019).

Hotbed of Insecurity

The Sahel is described as a hotbed of transborder security threats that contribute in no small measure to illegal migration and the European refugee crisis (Osland and Erstad 2020). Insecurity in the region is contagious due to its vast ungoverned spaces with little or no government presence, which encourages violent extremists to move cattle and weapons across porous borders (Muggah and Cabrera 2019). The internal and external borders of these states allow transborder mobility and criminal activities such as trafficking, smuggling, illegal migration and terrorism (UNECA 2017). Insecurity in the area is perpetuated by multiple armed groups, state violence, counterinsurgency operations, inter-communal attacks, community attacks and Fulani-herder conflicts. This has led to an unprecedented humanitarian crisis and massive displacement in Northwest Nigeria, Tillaberi region in Niger, Mopti in Mali and Soum in Burkina Faso—among other areas. As a result, there has also been an increase in food insecurity, hunger and multidimensional poverty.

The number of people in need of humanitarian assistance in the region increased from less than two million in 2014 to over seven million in 2021, three million of whom are from Nigeria. Meanwhile, the most vulnerable groups are girls and women who are susceptible to violence, physical, sexual and psychological abuse and limited access to education (Tarif 2022).

The security threats in the area are also attributable to the competition for scarce resources occasioned by climate change. There has been a long-standing conflict between the Fulani herders and farmers in Mali. This conflict is traceable to the domination of Ogossagou Dogon by the Fulani of Ogossagou Peul in the nineteenth century, and the subsequent displacement of the Dogon and their integration as slaves (Rimaybe). The conflict intensified in recent times and attracted international attention when Dogon hunters killed 175 Fulanis (a majority of whom were children) in Ogossagou, Mali on 23 March 2019, and when thirty-one Fulanis were killed on 14 February 2020. It is well beyond the popular ethnic conflict colouration or climate-change-induced conflict but results from insurgency by the Fulani and counterinsurgency by the Dogon militia (Benjaminsen and Ba 2021).

It is not uncommon for herders to migrate in search of fertile lands for their cattle to graze. This leads to a clash between them and farmers over farmlands and, sometimes, water. This is evident in Niger where the concentration of herders and farmers in pastoral and cultivation zones leads to competition for resource use. As a result, herders in Niger and Nigeria have become accustomed to carrying small arms and light weapons, which

eventuates in intracommunal violence. The farmer-herder clashes in Nigeria mirror the activity of an organised militant group that uses sophisticated weapons to raid villages in the Middle Belt region of the country, leading to loss of life and property, displacement and food shortages (Tarif 2022).

In 2018, the Sahel countries, especially Mali, experienced an unprecedented level of violence and fatality due to intercommunal conflicts between farmers and herders; Burkina Faso recorded an increase in jihadist attacks; in Niger, there were protests and border violence; in Nigeria's Middle Belt a herder-farmer crisis described as deadlier than Boko Haram was witnessed (Muggah and Cabrera 2019).

Combatting insecurity in the region has proven difficult due to the interconnectedness of the countries' security concerns, which is captured in the idea of a regional security complex. This is defined by Buzan (1983:105) as 'a group of states whose primary security concerns link together sufficiently closely that their national security cannot realistically be considered apart from one another'. Indeed, the Sahelian crisis presents a fragility dilemma—the choice between providing external assistance and unintentionally promoting dictatorship or illegitimacy. Countries in the Sahel are caught in this trap, as they continue to receive aid for being potential sources of global terrorism, large contributors to illegal migration and nearness to Europe, yet are characterised by low administrative capacity and vulnerability to varying conditions (Bøås 2019; Osland and Erstad 2020).

Covid-19, Insecurity and Development in the Sahel

Covid-19 in Africa

The discovery of a novel severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2), dubbed Covid-19, was reported in Wuhan City, China, in December 2019. The highly contagious disease quickly spread around the world in a short period and was consequently declared a global pandemic by the World Health Organization on 11 March 2020 (Lone and Ahmad 2020). The first case in Africa was recorded in Egypt on 14 February 2020, while the first sub-Saharan Africa case was reported in Nigeria thirteen days later.

That the impact of Covid-19 was devastating is an aphorism. By May 2022, there were 456,797,217 confirmed cases of Covid-19 and 6,043,094 deaths globally (WHO 2022). The disease affected many countries of the world in different ways that some are yet to recover from. Africa was projected to be the most vulnerable continent to the pandemic due to its prevalence of poor health facilities, shortage of medical personnel,

environmental challenges, poverty and weak institutions (Lone and Ahmad 2020). However, countries such as the UK and USA with state-of-the-art health facilities and advanced preparation were more severely affected and struggled harder to contain the pandemic compared to the African continent (Awoyemi *et al.* 2022). By the end of 2020, with a fatality rate of 2.4 per cent compared to North America's 2.9 per cent and Europe's 4.5 per cent, it was clear that the anticipated disaster in Africa did not materialise (Obi and Kabandula 2021).

In May 2022, a total of 11,321,958 cases and 250,292 deaths were recorded in Africa (ACDC 2022) compared to Europe's 188,233,608 cases (WHO 2022). Africa's low fatality rate was attributable in part to limited testing capacity, which meant that it was likely there were many unreported cases (ACDC 2020). It was also attributable to Africa's youthful population and settlement patterns. More than half of the African population are rural dwellers with limited opportunities to travel (Coning 2021). However, although the cases of Covid-19 in the Sahel nations are low by international standards, the virus nonetheless had a devastating effect on the security and economy of the countries in the region.

Fragility is a subsisting crisis in the Sahel that created a fault-line for the aggravation of the region's vulnerability to Covid-19. This section examines the pre-existing insecurity and development imbroglio in the Sahel by comparing data of the challenges pre-Covid-19 and during Covid-19 to ascertain the nexus of the incidence of the pandemic and the intensification of these challenges.

There is a long history between epidemics and wars, dating to the Plague of Athens in the fifth century BCE. Meanwhile, about a century ago, a mass movement of the civilian population on the eve of the First World War sparked the spread of the influenza virus (Gugushvili and McKee 2022). However, the Covid-19 pandemic presented a greater challenge in sub-Saharan Africa due to its low health expenditure (about 5 per cent of total GDP) and shortage of medical personnel, which makes the states ill-prepared for a pandemic (ACDC 2020; UNDP 2020). Beyond the health implications, it is believed that the pandemic presented the opportunity for conflict escalation by fuelling pre-existing conflicts, especially between vulnerable social groups and the government, and evoking new geopolitical tensions which, if not properly managed, will lead to state collapse (Gugushvili and McKee 2022; WEF 2021).

Gugushvili and McKee (2022) claim that there is a symbiotic and bidirectional relationship between Covid-19 and conflict. They aver that 'circumstances associated with wars may facilitate pandemic spread; on the

other hand, Covid-19 has already heightened xenophobia and nationalism, which in turn can encourage armed confrontations' (2022:16). For instance, between March and April 2020, the number of violent attacks in the region rose by 37 per cent (Columbo and Harris 2020). The diversion of government and security forces to the pressing needs of the pandemic presented armed groups in the region with the opportunity to increase their transborder operations (Dahir 2020).

Further, Covid-19 got in the way of sustaining peace in conflict-ridden areas in Africa (Abdel-Latif 2020). Ossai (2021) observes that the Covid-19 pandemic hurt the peacebuilding process in Africa. The pandemic led to the suspension of democratic freedoms and increased the extent of government power, with the ability to declare lockdowns, restrict movement and encroach on human rights. The diversion of security forces towards ensuring compliance with Covid-19 protocols emboldened terrorist groups and increased the chances of resistance and violence. Obi and Kabandula (2021) add that government enforcement of lockdown protocols led to the violation of human rights in states like South Africa, Nigeria, Kenya and Uganda. As Chukwufumnaya and Oghuvbu (2020) argue, the pandemic posed a great threat not only to public health but to the guarantee of human rights. There were reports of human rights violations during the pandemic arising from the enforcement of lockdown rules, while people struggled to access health facilities, as in Mali and Burkina Faso. The activities of peacebuilding networks such as the African Union and the United Nations were halted by restricted travel (Coning 2021).

In addition, the countries in the region were challenged by governance crises, particularly in the delivery of public services. According to the Ibrahim Index of African Governance (2020), which measures governance in African states using indicators such as security, participation, economic opportunity and human development, among others, states in the Sahel performed poorly in governance, except for Chad, Senegal and the Gambia, while some states experienced a negative trend. As presented in Table 1, Nigeria recorded an index score of -9 in the year of review (2010–2019), indicating that the country had the worst governance record in the region. This is followed by Mali (-8), Niger (-4), Cameroon (-3), Guinea (-2) and Burkina Faso (-2). By implication, six countries in the Sahel had a negative governance record between 2010 and 2019. This is an indication of a pre-existing governance crisis that aggravated vulnerability to the Covid-19 pandemic, an argument which is substantiated by Gain (2022) who opined that the crisis of weak governance that predated Covid-19 in the Sahel worsened the pandemic experience and threatened state legitimacy. Gain argues that the coup in Mali and civil unrest in Burkina Faso were indicators of poor governance. This subsisting governance crisis

impeded the ability of Sahelian states to respond to the daunting challenge of the pandemic, which revealed the governments' poor capacity to manage public emergencies and deliver public services. Although some governments announced palliative measures and conditional cash transfer schemes, these efforts were tarnished by corruption and insincerity.

As a result of the pandemic, some elections were postponed, and where they were held there was a low turnout in some cases. Chad postponed its December 2020 legislative elections to April 2021, whereas the elections in Mali and Burkina Faso took place in April and November 2020 respectively as scheduled, but with a low voter turnout. Mali recorded a 35 per cent voter turnout. The implication of this is that while many citizens could not perform their civic responsibility for fear of contracting the virus some governments used the opportunity to extend their stay in office (ACDC 2020). Meanwhile, in the elections in Niger and Burkina Faso there was evidence of manipulation, logistic challenges such as delays and reduced numbers of international observers, health risks and higher costs (Obi and Kabandula 2021). This is a dangerous precedent that has implications for voter apathy in a fragile society, as found in the region, and is an indication of how the pandemic threatened the level of fragility in the region.

Table 1: Governance Index in the Sahel, 2015–2019

LOCATION	2015	2016	2017	2018	2019	RANK	CHANGE 2015-2019
Africa	48.6	48.7	48.8	49.0	48.8	n/a	-
Burkina Faso	55.7	56.1	57.6	57.1	54.0	17	-2
Cameroon	45.4	44.9	43.9	43.2	43.5	37	-3
Chad	33.0	32.4	33.1	33.4	33.9	47	+2
The Gambia	44.6	44.9	55.3	57.4	55.9	16	+11
Guinea	41.8	43.0	43.1	42.9	42.5	39	-2
Mali	49.4	49.0	47.9	46.6	46.6	31	-8
Mauritania	38.6	39.6	39.9	40.3	41.6	40	+1
Niger	48.0	47.7	48.3	47.0	47.8	28	-4
Nigeria	48.9	48.4	46.7	46.6	45.5	34	-9
Senegal	62.8	63.4	62.7	62.8	63.2	9	0

Source: IIAG (2020)

According to the Fragile State Index (2019, 2020, 2021) presented in Table 2, most of the states in the region are described as alert (scoring between 90 and 100) or high-alert states (scoring between 100 and 110). The index, which measures indicators such as state legitimacy, public services, human rights, rule of law, uneven development, economic decline, group grievance and cohesion, reveals that most of the states in the region experienced a decline in score following the pandemic. In particular, Burkina Faso, which scored 83.9 (and ranked 47) before the pandemic, recorded an increase in score during the pandemic (85.9) and a further increase after the pandemic (87.1). In Mali, there was also an upward change in score and rank before, during and after the peak of the pandemic, while in Mauritania and Nigeria, the increase in scores was recorded after the peak. This indicates that the fragility of the countries in the Sahel was affected by the Covid-19 pandemic. This is supported by Kristensen and Harrison (2021), who argue that Covid-19 restricted civic space and became a pretext for promoting political repression. They note that autocratic governments in Burkina Faso and Nigeria used the pandemic as a cover to subvert the hitherto weak democratic governance. The group (youth) grievance in Nigeria against police brutality, codenamed #EndSARS, and that government's repressive response is a case in point. The authors further note that Covid-19 increased the risk of fragility in the world.

Table 2: Changes in the Fragility Index in the Sahel, 2019–2021

COUNTRY	2019		2020		2021	
	Score	Rank	Score	Rank	Score	Rank
Burkina Faso	83.9	47	85.9	37	87.1	36
Cameroon	97.9	16	97.9	11	97.2	15
Chad	108.5	7	106.4	7	105.8	7
The Gambia	83.9	47	82.2	51	80.5	55
Guinea	99.4	11	97.2	15	97.4	14
Mali	94.5	21	96.0	16	96.6	19
Mauritania	90.1	31	88.7	33	89.1	33
Niger	96.2	18	95.3	19	96.0	21
Nigeria	98.5	14	97.3	14	98.0	12
Senegal	77,2	66	74.6	71	73.4	76

Source: Fiertz (2021); Messner, Latour and Grathwohl (2020); Messner (2019)

It is also believed that the political elite takes advantage of competition between groups and resource-based conflicts to escalate violence, particularly during election periods. This was the case in Mali and Burkina Faso where

the elite escalated local conflicts between identity groups to intensify conflict (Tarif 2022). Obi and Kabandula (2021) note that, like armed non-state actors, state actors also took advantage of state paralysis and poor economic conditions in the Sahel to drive social unrest and advance their agenda. In what is referred to as pandemic politics, governments used the pretext of enforcing Covid-19 protocols to promote repression against opposition and minority groups; in some cases, elections were postponed without justification. Such high-handed enforcement neglected the local risk factors of vulnerable groups and damaged trust in the government (Coning 2021).

Obi and Kabandula (2021) also claim that the pandemic impacted on regional and international responses to conflict in Africa. Due to dwindling resources and the economic demands of the pandemic, funds earmarked for peacekeeping missions were diverted to address the health crisis, just as travel restrictions and lockdowns imposed by various governments limited peace operations significantly, thus giving insurgents more opportunity to gather and sponsor attacks. In addition to increasing the spate of conflicts, this compounded the existing humanitarian crises in the region (Coning 2021) and increased the incidence of displacement. This was alluded to by Dahir (2020), who argued that Covid-19 further strained the violent situation in a volatile and vulnerable region like the Sahel and increased the spate of displacement. There was a rise in the number of refugees, asylum-seekers and people fleeing their homes. In mid-2019 in Mali, over 133,000 people had fled their homes; in 2020 an estimated 240,000 internally displaced persons were recorded in that country, while 489,000 and 921,000 had fled their homes in Niger and Burkina Faso and 25,000 refugees moved into Mali from Burkina Faso. Amid the lockdowns and movement restrictions many of these people were forced to live in underequipped and overpopulated camps located in border areas shared by Niger, Mali and Burkina Faso.

According to the WEF (2021), the humanitarian crisis created by the pandemic was aggravated by a lack of social protection for informal workers. This is supported by evidence from ACDC (2020), that the lockdown severely affected the informal sector, which accounts for a significant proportion of the population in the region. In Mali, the informal sector employs 73 per cent of the population, while 95 per cent of the urban population in Burkina Faso work in the informal sector. Moreover, given that pastoralism is a major occupation in the region, the attendant lockdown and movement restrictions constrained herders from roving with or trading their cattle, thus disrupting their means of livelihood. The containment measures introduced in African countries had unintended consequences on people's livelihood and particularly on the economy. Many Africans working in the informal economy lost their jobs and were unable to support their families.

The lockdowns also meant that job opportunities in the formal sector were reduced. This exposed prior susceptibilities, strained social cohesion and exacerbated frustration (Coning 2021).

Deteriorating Human Security

Human security is defined by Akinyetun *et al.* (2021c) as:

> including peoples' safety from hunger, disease, and repression, including harmful disruptions of daily life. It focuses on social and economic causes and an assumed international responsibility to protect peoples from violence. It encompasses areas such as food security, health security, personal security, community security and the protection of women and minorities. (2021c: 43).

Given the above description, it is safe to aver that Covid-19 impacted negatively on human security in the region, considering its devastating effect on food security, hunger and the vulnerable, among other factors. As history has shown, the outbreak of infectious diseases weakens health, reduces productivity and leads to food insecurity and a low GDP (Ossai 2021). Before the outbreak of the pandemic, the Sahel had been challenged by food insecurity; the pandemic exposed the extent of lack of capacity and unpreparedness of the governments in the region and the susceptibility of the food sub-sector in Africa (Chukwufumnaya and Oghuvbu 2020). As the Global Food Security Index (2021) presented in Table 3 shows, most states in the Sahel experienced a decline in food security during the pandemic, with a significant decline recorded in Burkina Faso, Senegal and Chad.

Table 3: Food Security Index during the pandemic

COUNTRY	RANK	2019	2020
Burkina Faso	85th	49.5	46.8
Cameroon	92nd	44.4	43.9
Chad	99th	43.8	41.7
The Gambia	-	-	-
Guinea	96th	40.6	42.8
Mali	76th	53.1	52.7
Mauritania	-	-	-
Niger	88th	49.8	49.9
Nigeria	97th	42.6	41.2
Senegal	89th	48.1	45.5

Source: Global Food Security Index (2021)

Climate Change

Before the pandemic, climate change had increased the temperature of the region by 1.5 degrees. As expected, this led to a decrease in farming activities and increased the chances of poor harvests, famine, hunger, drought and food insecurity. Meanwhile, the conflicts in the region were provoking massive displacements and disruption of economic activities. The Covid-19 pandemic curtailed agricultural activities further, thereby leading to additional loss of income and livelihood and intensifying food insecurity.

Climate change remains a major factor causing food insecurity in the region. It has affected not only agriculture but also up to 50 million nomads who depend on their cattle for a living. With limited access to water and scarce resources, when these nomads come into contact with farmers this often sparks conflict—as in Mali, Nigeria and Chad, among other pastoral regions—leading to further food insecurity. In 2017, about 33 million people in the region were food-insecure (Skretteberg 2019). According to FAO, IFAD, UNICEF, WFP and WHO (2021), climate change has led to irregular rainfall and, in extreme cases, floods, which threaten the livelihood of rural households who are especially vulnerable to these worsening climatic conditions. Meanwhile, 'climate change increase[s] both the risk and severity of violent conflict' (Tarif 2022:1). This is because 'conflict and war have long been accepted as significant constraints to development' (Lone and Ahmad 2020:373). Herein lies the elongation of conflict in the Sahel as occasioned by climate change. As Osland and Erstad (2020) observe, where pastoralism is a key occupation, adapting to a deteriorating climatic condition is difficult.

Furthermore, there is the challenge of vulnerable groups—the elderly, women, youth, unskilled workers and minorities—being especially affected by the pandemic (WEF 2021). The pandemic affected men and women differently. According to the World Health Organization (2020), women make up a significant ratio of the labour in sub-Saharan Africa, and for them the impact of the pandemic transcended job loss. It exposed women to gender-based violence and limited access to sexual and reproductive healthcare services. The WHO claims that live births, use of control pills and cases of caesarean sections dropped by 21 per cent, 90 per cent and 42 per cent respectively in selected African countries. In addition, births with skilled attendants dropped from 30,826 in 2019 to 4,749 in 2020, indicating the absence of health workers; many had been reassigned to the frontlines to shore up the decline in professional health workers needed to care for Covid-19

patients. Obi and Kabandula (2021) claim that the pandemic increased the incidence of gender-based violence, following reports of security forces abusing girls and women for defying lockdown protocols; some were raped during patrols. This form of abuse during the pandemic has been described as a shadow pandemic—a pandemic during the pandemic.

Widespread Economic Challenges

Except for Cameroon, a medium human-development state, all the states in the Sahel are low human-development states (UNDP 2020). They are generally characterised by a low human-development index, high multidimensional poverty index (which deteriorated in some states and remained stagnant in others with the occurrence of the pandemic), high gender-inequality index, high incidence of child malnutrition, a low health expenditure (as a percentage of GDP), high incidence of internally displaced persons, and a low skilled labour force (see Table 4). It is within this framework that the discussion on the Sahel is presented and the impact of Covid 19 is appraised.

Table 4: Development in the Sahel

COUNTRY	HDI 2019	MPI 2019	MPI 2020	GII	CM (%)	HE (% OF GDP)	IDP ('000s)	SLB	EIA (%)
Burkina Faso	0.452	-	-	0.594	24.9	6.9	560.0	5.0	25.2
Cameroon	0.563	0.243	0.232	0.560	28.9	4.7	969.0	19.9	43.4
Chad	0.398	0.533	0.517	0.710	39.8	4.5	176.0	7.6	76.6
The Gambia	0.496	0.204	0.204	0.612	19.0	3.3	-	35.0	27.1
Guinea	0.477	0.373	0.373	-	30.3	4.1	-	-	61.7
Mali	0.434	0.376	0.376	0.671	26.9	3.8	208.0	5.8	62.6
Mauritania	0.546	0.261	0.261	0.634	22.8	4.4	-	8.2	51.3
Niger	0.394	-	-	0.642	48.5	7.7	195.0	4.0	75.1
Nigeria	0.539	0.254	0.254	-	36.8	3.8	2,583	41.4	35.1
Senegal	0.512	0.288	0.263	0.533	18.8	4.1	8.4	10.8	30.0

Key: HDI – Human Development Index; MPI – Multidimensional Poverty Index; GII – Gender Inequality Index; CM – Child Malnutrition; HE – Health Expenditure; IDP – Internally Displaced Persons; SLB – Skilled Labour Force; EIA – Employment in Agriculture

Source: UNDP (2020, 2021)

Africa may have been spared the fatality rates of Covid-19 compared to the West, but it was not spared the intensification of vulnerabilities and the aggravation of pre-existing economic challenges (Abdel-Latif 2020). It is believed that Covid-19 affected development in the Sahel. To be sure, development is an important matter for all countries in the world. Among its indicators—such as education, social amenities, energy and healthcare (Edomah 2020)—health has serious far-reaching consequences for economic growth (Kinyondo and Pelizzo 2021). After all, health is wealth. If this is so, then the resultant effect of Covid-19 on economic growth is a reflection of the resilience of the health sector.

Kinyondo and Pelizzo (2021) claim that improved economic growth has been recorded in Africa since the beginning of the millennium. This is attributable to enhanced governance occasioned by the spread of democracy, increase in foreign direct investment, public health, the rise of new international players like China, and the cancellation of African debt. The absence of one of these factors, as occasioned by the pandemic, can lead to economic loss. The pandemic led to the loss of lives, the shutdown of key sectors of the economy, loss of income and reduced trade.

The majority of the countries in the Sahel are low-income states that are highly susceptible to external shock. As a result, the outbreak of the pandemic and its attendant lockdowns strained already embattled macroeconomic environments. The landlocked nations of Chad, Niger, Burkina Faso and Mali were seriously impacted because of their reliance on the seaports of their neighbouring countries. The pandemic denied them access to goods, basic commodities, exports and medical equipment (ACDC 2020). It was projected by experts that due to the continent's vulnerability to external shock, the continent would experience a recession not seen in over two decades, with a decline in growth from 2.4 per cent to -2 per cent to -5 per cent. Household income and consumption were projected to decline between 7 per cent and 14 per cent as a result of the food crisis (Micah 2020). According to the World Bank (2022), the states in the Sahel—except Guinea—recorded a downward revision in GDP during the pandemic (Table 5).

Meanwhile, in Nigeria, the drop in international oil consumption and price had severe economic impacts. Akinyetun *et al.* (2021a) observed that, as a result of the pandemic, Nigeria (a monoproduct and petrodollar economy) experienced reduced foreign exchange earnings, low fiscal revenue and an increase in the inflation rate, leading to a budget deficit of 50 per cent in 2020. The economic contraction increased the incidence of poverty and unemployment, which rose from 20.9 million in 2019 to 39.4 million in December 2020.

Table 5: GDP growth for Sahelian states 2019–2022

COUNTRY	2019	2020	2021e	2022f
Burkina Faso	5.7	1.9	6.7	5.6
Cameroon	3.7	0.7	3.4	4.0
Chad	3.2	-0.9	0.9	1.8
The Gambia	6.2	-0.2	4.0	6.0
Guinea	5.6	7.1	5.2	6.1
Mali	4.8	-1.6	4.0	5.2
Mauritania	5.8	-1.8	2.7	4.1
Niger	5.9	3.6	5.5	6.2
Nigeria	2.2	-1.8	2.4	2.5
Senegal	4.4	1.5	4.7	5.5

e= estimate; f= forecast

Source: World Bank (2022)

Coning (2021) claims that, excepting a few countries like South Africa, Kenya and Ghana, which provided an economic stimulus for businesses, tax relief and free water, most African states did not provide social protection measures and ended up deepening poverty in Africa generally, and in the Sahel region particularly. Although poverty was a common phenomenon in Africa before Covid-19, it is believed that the pandemic pushed 150 million people—9.4 per cent of the world's population—to extreme poverty (WEF 2021). According to the World Bank (2021), the most vulnerable groups are youth, women and informal-sector workers who lack access to social safety nets. Workers of the informal sector are mostly employed by small-scale enterprises, which could not withstand the impact of the pandemic. Many enterprises stopped operations temporarily, whereas several closed down permanently. The effect was increased unemployment and pervasive poverty.

For an area characterised by a low human-development index, growing poverty and an unprecedented humanitarian crisis, the development projections for the achievement of Agenda 2030 and 2063 suffered setbacks. The situation was further complicated by protracted conflict in the region (ACDC 2020). As Akinyetun *et al.* (2021b) note, sub-Saharan Africa—which before the pandemic had become a locus of insurgency and international terrorism—experienced an upswing in attacks during the pandemic, which led to the death of civilians and security forces, particularly in the Lake Chad Basin (Nigeria, Niger, Chad and Cameroon).

Extremist groups took advantage of the worsened economic conditions to radicalise frustrated and unemployed youths (Akinyetun *et al.* 2021c). The pandemic significantly increased youth unemployment and the contraction of GDP in many African countries due to low remittances and a decrease in exports (Abdel-Latif 2020). Even though the economic and environmental effects of the pandemic are yet to be fully quantified, it is clear that it increased unemployment: about 495 million jobs—14 per cent of the global workforce—were lost within six months (WEF 2021). The pandemic also increased the chances of inequality, business collapse, stagnation, loss of potential, uneven recovery and difficulty in achieving sustainable development. Indeed, the alteration to social interaction, the loss of jobs, social isolation and lack of education threaten social cohesion among the youth and may engender disillusionment, which further poses a threat to democratic consolidation. This is because the interplay of unemployment and inequality subjects youths to risks and, by extension, social cohesion erosion (Akinyetun et al 2021c; WEF 2021). After all, 'too many people have little left to lose' (WEF 2021: 20).

In Nigeria, where about 39.5 million jobs were lost during the pandemic, Covid-19-induced unemployment became an enabler of cybercrime (Akinyetun *et al.* 2021c). This was occasioned by the extended lockdown and pre-existing food insecurity. Ossai (2021) concurs that cybercrime and robbery became an alternative in the south of the country, while in the north, communal conflicts, banditry and attacks by ISWAP increased during the period, leading to protests by residents of affected communities. This was amplified by anger against the government for not providing financial support to mitigate the effect of the lockdowns. Although 'the damages inflicted through cybercrime usually take time to be noticed and may have far greater implications' (Akinyetun *et al.* 2021c: 45), it contributes to economic instability and impedes economic security.

The pandemic also drove an estimated 768 million people in Africa into hunger (the number stood at 650 million in 2019). It has been particularly devastating for children under the age of five who experienced stunting and malnutrition arising from the lack of nutrition during the pandemic. There was a 1.5 per cent rise in undernourishment in the world in 2020, to 9.9 per cent. Of this number, Africa accounted for 282 million undernourished people—46 million more than in 2019 (FAO, IFAD, UNICEF, WFP and WHO 2021). The trend is also attributable to conflict and climate-related disasters that impeded the production, harvesting, processing, transporting, financing, marketing and consumption of products. The ongoing conflict in the region and climate variability not only destroyed agricultural products but

also disrupted the agricultural process, thus leading to low productivity, low income, food insecurity and hunger. Additionally, the Covid-19 pandemic restricted the movement of farmers, goods and services and increased the chances of hunger. The knock-on effect of these disruptions was the destruction of the food value chain and stunting of non-food agro-industry growth.

The disease also led to a decrease in income for most African states. For oil-producing countries like Nigeria, Angola, DR Congo and Algeria, the decline in oil consumption occasioned by travel bans and lockdowns led to a drop in income, economic growth and GDP. For countries like South Africa, where the mining industry employs about 420,000 people, the sector was impacted by the weakened demand for iron ore, steel and lithium, which left a huge number of people unemployed and vulnerable. Meanwhile, in countries where tourism contributes significantly to the economy, like Tanzania, South Africa, Kenya and Ethiopia, the pandemic disrupted and impacted the sector, leaving many people unemployed. Generally, the aviation sector in various countries became unproductive due to the ban on travel in many parts of the world, leading to loss of revenue for private individuals and taxes for the government. Indeed, there was a reduction in the flow of remittances and foreign direct investments during the pandemic. The period also recorded increased capital flight (Lone and Ahmad 2020; Micah 2020).

Conclusion

Insecurity in Africa is a complex situation that requires a comprehensive, yet dynamic framework to be understood, owing to its multifaceted causation. Conflict in the region was influenced by marginalisation, worsening living conditions, political grievance, competition for resources occasioned by climate change, environmental degradation, increasing migration, weak governance, identity politics, elite manipulation, and then the Covid-19 pandemic—a global phenomenon with regional implications. Security in the region came under further threat during the pandemic due to a repositioning of state priorities—from counterinsurgency to border security to contain the spread of the virus—and a shift in insurgents' operations as a result of their reduced income. The pandemic also affected regional and international responses to conflict in Africa. Due to dwindling resources and the economic effects of the pandemic, funds earmarked for peacekeeping were diverted to address the health crisis, and travel restrictions and lockdowns limited peace operations significantly. This gave insurgents the opportunity to gather and sponsor attacks. Put differently, as states find it difficult to fund military

operations due to the economic impact of the pandemic, new domestic and armed groups become encouraged and empowered to take advantage of the lacuna to renew conflicts and sponsor inter-group attacks.

It is believed that the economic impact of the pandemic varies across regions, with low-income countries—as found in the Sahel—the worst hit due to the pre-existing disparity in access to education, security, income, technology and healthcare. Meanwhile, limited access to technology meant that many were left behind when schools and businesses moved their operations online. The pandemic not only affected citizens' wellbeing by reducing household income but also led to a fall in fiscal revenue, foreign exchange and foreign financial flow due to travel restrictions and a decline in demand for oil products. It caused a rise in unemployment and a surge in crime, including cybercrime, gender-based violence, abuse, looting and brutality. Within a short space of time, Covid-19 disrupted the efforts and progress made by peacebuilders. It is therefore expected that these peacebuilding networks will need to adapt to the new arrangement of curtailed travel. This might have a long-term effect on the spate of conflict in the region because peacebuilding efforts and mediation require face-to-face communication to be effective.

Given the findings, the paper recommends that attention be paid to security in the Sahel through regional cooperation and by sustaining the existing joint force operations and creating more units to reduce the incidence of arms proliferation, illegal migration and transnational organised crime. In addition, policies targeted at mitigating the effects of climate change must be initiated and fully implemented across the Sahelian states. This will reduce confrontation between herders and farmers and enable farmers to withstand the environmental impact and prevent a food crisis.

Governments in the region should also increase their health budget and enhance their capacity to respond to health emergencies such as the Covid-19 outbreak. Moreover, efforts to combat multidimensional poverty and unemployment through wealth creation, entrepreneurship and other welfare schemes should be initiated and sustained. This will reduce the vulnerability to violence and set the stage for the rehabilitation of armed groups and insurgents. Furthermore, conflict resolution should be promoted, particularly among competing and identity-based groups. This will decrease the chances of conflict escalation and arms proliferation. In the same vein, education and peace programmes should be sponsored by the various governments in conjunction with civil society to build a society of cohesion and peaceful coexistence.

Finally, it is pertinent that states in the Sahel promote good governance. As Kofi Annan said, 'good governance is perhaps the single most important factor in eradicating poverty and promoting development' (UN 1998). Good governance is not just about building a virile civil society or an effective state, it emphasises the promotion of development. It is recommended that states in the Sahel should promote good governance practices that emphasise civic engagement, inclusiveness, rural governance, citizen participation in decision-making, accountability, transparency, human rights, independent judiciary and the rule of law. This practice must give prominence to the vulnerable and marginalised groups—youths, women, minorities and the elderly.

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Covid-19 Lockdown and the 'Work-From-Home' Approach: Effect on Nigerian Academics

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Abstract

This article investigates the effect of the Covid-19 lockdown and the 'work-from-home' approach on academic activities in Nigeria, using bivariate and multivariable regression. The results show that factors such as inadequate power supply, electricity access, workspace and access to research materials, health status and care for children and the elderly during the Covid-19 lockdown were significantly associated with a decline in the time devoted to academic work. On the other hand, virtual teaching or learning and the ability to work from home more often had positive and statistically significant effects on weekly work hours. The study also finds that Covid-19 lockdowns had a stronger negative effect on female researchers than their male counterparts. The implication is that a prolonged lockdown will harm the education system in Nigeria by negatively affecting research outcomes in terms of weekly work hours. Thus, the recommendations emanating from the findings are discussed in the article.

Keywords: Covid-19; lockdown; 'work from home'; academics; Nigeria

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Résumé

Par une régression bivariée et multivariée, cet article examine l'effet du confinement provoqué par le Covid-19 et de l'approche « télétravail » sur les activités d'universitaires au Nigeria. Les résultats montrent que des facteurs tels que la fourniture inadéquate d'électricité, l'accès à l'électricité, la disponibilité d'un espace de travail et l'accès aux matériaux de recherche, l'état de santé et la fourniture de soins aux enfants et aux personnes âgées pendant le confinement ont été significativement associés à une baisse du temps consacré au travail universitaire. En revanche, l'enseignement ou l'apprentissage virtuel et la possibilité de travailler à domicile ont eu des effets positifs et statistiquement significatifs sur les heures de travail hebdomadaire. L'étude révèle également que les blocages dus au Covid-19 ont eu plus d'effets négatifs sur les chercheuses que sur leurs homologues masculins. Cela induit qu'un confinement prolongé nuira au système éducatif nigérian en impactant négativement les résultats de recherche en termes d'heures de travail hebdomadaire. Ainsi, les recommandations émanant de ces résultats sont discutées dans l'article.

Mots-clés : Covid-19 ; confinement ; « travailler à domicile » ; universitaires ; Nigeria

Introduction

Covid-19 is an infectious disease caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The mild symptoms include fever, dry cough, body pain, diarrhoea, fatigue and shortness of breath, while the severe symptoms are pneumonia, acute respiratory distress syndrome, sepsis and septic shock, which can cause death (Delivorias and Scholz 2020). The average incubation period is between two to fourteen days. The disease, which has a high rate of transmission (mostly through respiratory droplets), started in Wuhan, China and was first reported in December 2019. More than 1,800 people died and over 70,000 individuals were infected within the first fifty days of its emergence in the country (Shereen *et al.* 2020). Initially, the outbreak was declared by the World Health Organization (WHO) as endemic because of its spread in China and other neighbouring countries. However, on 11 March 2020, the disease was declared a pandemic by the WHO due to its global spread to all the continents of the world.

Covid-19 is one of numerous diseases revealed to be a pandemic because it spread rapidly from its original outbreak. Developed countries, especially in Europe, have been the most affected. On 14 June 2020, the United States of America (USA), Brazil and Russia were reported to be the most highly

infected countries in the world (VOA News 2020). Specifically, the USA was the most affected, with over two million confirmed cases and almost 200,000 deaths. The second most-affected country was Brazil, where over 850,000 cases and over 43,000 deaths were confirmed. Russia, the third most-affected country, had more than 530,000 confirmed cases and over 7,000 deaths. Globally, by 28 June 2020, about nine million individuals had been affected and there were over 500,000 deaths (BBC News 2020). Consequently, almost all the affected countries in the world ordered their citizens to stay at home to reduce the spread of the disease. As a result, most organisations ordered their employees to work from home, while only essential workers allowed at their workplace.

Africa as a continent was not immune to the outbreak. Notably, African countries started recording cases of Covid-19 in February 2020, with the first case reported in Egypt. In Nigeria, the first case of Covid-19 was reported on 27 February when an Italian who worked in Nigeria came into the country from Milan where the number of cases was reportedly high. In response to an increasing rate of infections in Nigeria, the government, through the Presidential Task Force on Covid-19, enforced the 'stay-at-home' directive to flatten the curve of the disease and reduce its spread. In addition, the government, through the Federal Ministry of Education and National University Commission, took the precautionary move to curtail the spread of Covid-19 by ordering the immediate closure of all educational institutions—primary, secondary and tertiary—on 26 March 2020.

Even with these measures, the number of cases continued to increase. By 14 June 2020, the Nigerian Centre for Disease Control (NCDC) reported that the number of confirmed cases was 15,682, 5,101 people had recovered from the disease and 407 were dead due to the disease. At the time of writing this paper, the country was still under partial lockdown and this was affecting the economy adversely. To mitigate the effect of the lockdown on the economy, many organisations introduced 'work from home' to reduce face-to-face contact in the workplace to avoid human suffering and the loss of lives while maintaining productivity, according to Delivorias and Scholz (2020).

Academics and researchers were not excluded, since all schools closed down. Some schools set up virtual learning, while others were not involved in virtual learning. According to Okocha (2020), 'poor Internet infrastructure and a lack of reliable electricity supplies' (2020:1) were the major reasons why Nigerian institutions battled with online learning. This also affected—either positively or negatively—lecturers' productivity when it came to writing article(s) for publication or personal development

in the area of specialisation. This implies that Covid-19 affected not only education but also academic and research activities across the world. The major question this present study intends to address is what has been the impact of the Covid-19 lockdowns and 'work-from-home' approach on academic activities in Nigeria?

Delving into the empirics, the answer to this question is far from being settled. For instance, Staniscuaski *et al*. (2020) reported that while many researchers had more time for their research activities, since they were not involved in teaching and administrative tasks, researchers who were parents of young children were faced with greater parental responsibility due to the closure of schools (see also Than 2020). Also, Staniscuaski *et al*. believed that the work of taking care of their children fell more to academic mothers than academic fathers, and as a result they became more involved in schooling their children and doing household chores than writing academic papers. Their findings show that Covid-19 negatively affected academic mothers more than academic fathers in writing scholarly papers. In the same vein, Than (2020:1), using Stanford University and other universities globally, argued in an online article that:

> Covid-19 has hampered not only education but academic research as well. Engineers and scientists are cut off from their labs and equipment. Crucial experiments have been disrupted. Field researchers and social and clinician scientists are unable to travel or work with human subjects. Even theoreticians and humanities scholars, who can presumably perform much of their work remotely, are feeling the repercussions of the pandemic due to the lack of in-person collaborations and access to collections.

Similarly, Guzman *et al*. (2020) confirm that conducting community-based research in developing countries was difficult during the pandemic period, due to the high person-to-person infection patterns of Covid-19. To those authors, Covid-19 threatened the success of continued face-to-face research. In addition, many conferences, workshops and seminars were either delayed or cancelled due to the SARS-CoV-2. This is confirmed by Gallo and Trompetto (2020). Those events that were not cancelled were done via online webinars, which not everyone was able to attend due to the lack of Internet services or poor power supply.

In the same vein, Cui *et al*. (2020) examined the gender dimension of academic research productivity in social sciences in response to the Covid-19 pandemic shock among different university scholars in the world. The authors collected data from 41,858 papers written by 76,832 authors and submitted on the Social Science Research Network from twenty-five

countries. The authors divided the sample periods into pre-Covid-19 and during the Covid-19 pandemic period to examine the variations in research productivity across gender. Their study reveals that within the first ten weeks of the pandemic in the US, research output by female scholars reduced by 13.9 per cent in comparison to their male counterparts. In addition, the authors replicate the analysis for other countries and find a significant reduction in the research productivity of female researchers during the lockdown period in twenty-one countries out of the twenty-five countries they examined.

Generally speaking, Covid-19 had a negative effect on education, with 'learning disruptions and decreased access to education and research facilities, job losses and increased student debts', as argued by Onyema *et al*. (2020:1). To add to this, the survey report of Ogunode (2020) shows that Covid-19 would drastically affect international grants and national funding for research activities of higher institutions in Abuja, Nigeria, thus reducing the research outcomes in these institutions in Abuja. Iwu *et al*. (2020) examined the experiences of academics working from home during Covid-19 in South Africa. They found that working from home was a discouraging task for academics, necessitating extensive organisational, personal and social adjustments. Based on the effect of the disruptions of Covid-19 on female researchers, Myers *et al*. (2020) revealed that Covid-19 did not affect all scientists equally. Female scientists, those in the 'bench sciences' and, especially, scientists with young children, experienced a substantial decline in time available to devote to research.

In examining the positive effect of Covid-19 on academic research, Wigginton *et al*. (2020) posited that during this time academic researchers studied different aspects of the social, economic and behavioural effects of Covid-19. As a result, they were able to develop causes, tests, therapies and vaccines that would aid treatment and prevent the transmission of the disease. According to the authors, by 19 May 2020 more than 13,700 papers on Covid-19 (Chen *et al*. 2020) had been published across the world and more than 3,700 pre-prints had been posted to the bioRxiv and medRxiv repositories. This narrative shows that many academic papers were produced, especially in the field of science. To add to this, Hussein *et al*. (2021) investigated the impact of Covid-19 on academic community sustainability in Iraq with the findings that Covid-19 encouraged the acquisition of technical skills, promoted self-development and offered an opportunity for researchers to attend electronic scientific discussions virtually.

Meanwhile, on 18 March 2020, a researcher named Marinkovic asked a question on ResearchGate, a research outlet: 'What is the impact of Covid-19 on your research/academic activities?' Mostly, the responses confirmed that Covid-19 was negatively affecting their research activities due to the following reasons: psychological trauma, parental responsibilities (especially among academic mothers), lack of access to technology, erratic power supply and unstable Internet services, among others. Some respondents viewed the pandemic period as a period for writing manuscripts for publication, particularly for those who already had sufficient data for publication. Some respondents advised researchers to change the methodology they were using for their academic papers. For instance, they could change from field-based surveys to online surveys (using Google online forms), or telephone interviews, for those who were involved with primary data. The belief was that all these would positively influence their research activities.

Along the same lines, a survey on the 'Covid-19 Impact on Global Scientific Community' was carried out by ResearchGate in March 2020. Some 3,000 international researchers responded within twenty-four hours. The responses showed that 82 per cent of respondents had their work affected by the pandemic; 67 per cent worked from home; 45 per cent now had more time to search for and read scientific literature; 43 per cent spent more time writing and submitting papers, doing peer review and collaborating with other scientists; 46 per cent were spending more time in keeping up to date with other scientific institutions and looking for new career opportunities; and 68 per cent were spending much less time attending research-related events (conferences).

Overall, the pandemic seemed to cause more harm than good (Shretta 2020), affecting economic and social activities globally. It forced most people to work from home (including academic researchers). On one hand, some researchers believed that they were more productive on campus as a result of motivation, access to Internet and electricity facilities and the lack of disturbance from home activities, which included caring for their children (for those with young children), doing house chores (with respect to academic mothers) and so on. On the other hand, some found that they were productive while working from home because they were not distracted by school activities. It is on this note that this present study sets out to examine whether working from home due to Covid-19 increased productivity among academic researchers in Nigeria. The study is also necessitated by the importance of research to nation-building and in coming up with solutions to the ravaging pandemic.

The remaining part of this study is organised as follows. Section 2 focuses on the methodology adopted in this study. Section 3 discusses the findings. Section 4 presents the concluding remarks with some recommendations that emanated from the findings.

Methodology and Data

This is a cross-sectional study that explores the effects of the Covid-19 lockdown approach on the research activities of academics in Nigerian institutions in order to describe the prevailing effect of the lockdown on research activities. The population of the study constitutes academics in Nigerian universities, polytechnics and colleges of education. With an estimated population of over 66,000 (*Trading Economics* 2020), a minimum sample size of 100 was arrived at using equation 1, wherein a 10 per cent precision level (e) was applied with a confidence interval of 95 per cent (Yamane1967, as cited in Glenn 1992):

$$n = N \Big/ 1 + N(e)^2$$

The survey instrument (questionnaire) was developed on Google Forms and was distributed via email and social media platforms for members of higher institutions and professional networks. A pilot survey was conducted to test the understanding of the questions and language clarity, and the final survey was collected during the peak period of Covid-19 restrictions by federal and state governments (May–June 2020). Although there was national strike action by the Academic Staff Union of Universities (ASUU) during the same period, our study could still gather data on the effect of Covid-19 restrictions because the strike action did not affect all Nigerian universities and it did not restrict the movement or access to research and academic facilities of all academics.

To ensure that the respondents were Nigerians and academic staff of higher institutions, the questionnaire inquired about their country of residence and whether or not they worked as academics in higher institutions. The questionnaire also addressed the sociodemographic characteristics of respondents, and their economic as well as academic activities during and before the lockdowns induced by Covid-19. Responses on perceived research productivity were obtained using a Likert scale of one to five, ranging from the ability to research as usual to the inability to carry out research. Factors strengthening inability were also captured to buttress the discourse.

A multistage random sampling approach was used to obtain a total of 141 samples, which had twenty-six invalid and 115 valid responses. Informed consent was given by all participants before submitting the forms. The analysis was conducted to describe the background information of respondents across gender, and the chi-square test was conducted to determine the association between the variations in work hours and explanatory variables. Multivariable regression was also conducted to establish the association between the outcome and explanatory variables, after considering their statistical level of significance.

The outcome variable for this study is the amount of time spent on research activities during the Covid-19 lockdown. This study focuses on the individual's research work hours due to the general lack of consensus on and the complex nature of measuring academic productivity using the input and output approach (Altbach 2015). Academics of various levels responded to the question on the average number of hours spent weekly, and count data approaches, Poisson regression and negative binomial regression were used in the analysis. Both regressions were employed because, unlike the Poisson regression, the negative binomial regression corrects for overdispersion of data where the conditional mean is smaller than the variance.

Motivated by prior empirical studies, such as Feng and Savani (2020), Myers *et al.* (2020), Staniscuaski *et al.* (2020) and Iwu *et al.* (2022), personal, technological and organisational factors were considered as dependent variables. For personal factors, information on sociodemographic characteristics, such as age, gender, education, academic cadre and family size, were elicited from respondents due to their general moderating effect on work hours. The technological factors used include Internet availability and electricity access, which otherwise would have been provided by universities in the absence of a lockdown. The organisational factors considered were access to research materials and general workspace conditions during the lockdown. In addition, the study controlled for self-rated health conditions during the same period given the theoretical relationship between health and productivity.

In this study, the age of the respondents was categorised into two groups—below forty years and above forty years. Although age is expected to have a negative effect because productivity generally declines with age, its impact on work hours during the pandemic is less clear. For gender, females are expected to be disproportionately affected given their need to provide care at various levels. Household size was categorised into two groups—five members, and above five members, following the national average household size of 5.1 (Statista 2019).

Since academics are expected to have a minimum of a Bachelor's degree, education was categorised dichotomously using the highest level of education obtained (those who do not possess a doctorate degree and those who possess a doctorate), while information on their sector of residence (rural or urban) was also documented.

Given the peculiarity of the Covid-19 pandemic, some institutions immediately commenced online teaching and examination for students whereas others did not. Participants were therefore asked if they were involved in virtual teaching or learning during this period because of its potential effect on working hours. Additionally, the ability to work from home was documented by the respondents on a scale of one to five, recategorised as 'occasionally' and 'often'. Other factors, such as electricity supply, Internet facility, workspace condition, the need to care for children or elderly household members and self-rated health status were included in the model as dummies. Prior to the interpretation of the result, a multicollinearity test was conducted using the variance inflation factors (VIF) and the data was analysed using STATA 16.1 (StataCorp 2020).

Results

The background information of the respondents presented in Table 1 shows that most of the participants were between the ages of thirty-nine and fifty-nine years, with more males than females, and a higher percentage (over 60 per cent) had a doctorate. Their household characteristics suggest that about two-thirds lived in households consisting of two to five members and over 90 per cent of the male respondents were household heads in contrast to the female respondents. The majority (83 per cent and 82 percent) resided in urban sectors and outside the university community, respectively. Besides, 66 per cent of the respondents worked at federal universities and a higher percentage of the participants (68 per cent) were mid-level academic staff.

Figure 1 presents the variations in the time allocated to work during and before the Covid-19 lockdown. In Figure 1a, the results suggest some changes in the self-rated performance of academics prior to and during Covid-19 lockdown, with a marginal drop in the self-rated performance from two to four and an increase in the lower scale (one and two). Meanwhile, 14 per cent rated their performance as very high before and during the pandemic-induced lockdown. Figure 1b suggests variations in the weekly working hours during the lockdown across gender. The share of time put in to work weekly for males was extended more positively, with a mean of twenty-six hours in comparison to the mean of seventeen hours reported by females. Marginal changes were

observed in the share of time allocated for research and supervision, with a higher percentage of respondents (over 40 per cent) experiencing a 25 per cent decline, but no remarkable change in conference participation and research funding during the lockdown. However, some respondents generally experienced changes that ranged from a 100 per cent decline to improvements.

Using the chi-square test of association, Table 2 presents the variations in the share of time allocated to work and their associated factors. The findings suggest that there is no association between age and changes in the share of time allotted to work during the pandemic lockdown. Gender also had no significant association, even though a higher percentage of females (42 per cent) reported a decline in the share of time devoted to work in comparison to male academics (22 per cent). Household size and the highest level of education also showed no significant association with variations in the share of time devoted to work during the Covid-19 lockdown. Other factors, such as inadequate power supply, electricity access, workspace, access to research materials and care for children and the elderly during the Covid-19 lockdown, were significantly associated with a decline in the share of time devoted to work during the pandemic.

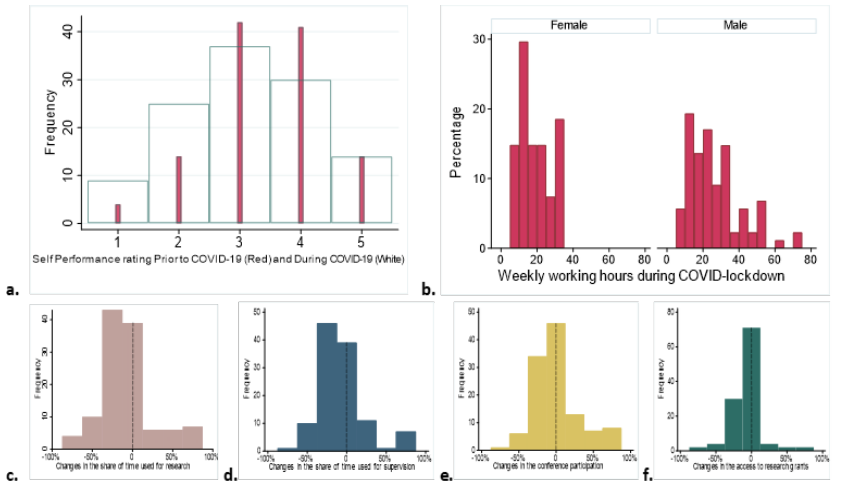
The findings from the Poisson regression and the negative binomial regression presented in Table 3 are largely similar. However, this study focuses on the negative binomial regression result because the Pearson goodness-of-fit results indicate that the distribution of the number of hours devoted to work significantly differs for a Poisson distribution using the p-value of less than 0.001 (which is below the standard threshold of 0.05). Furthermore, the likelihood-ratio test of alpha is equal to 0, the chibar2 (01) and the Prob>=chibar2, which is equal to 270.34 and 0.000 respectively, which suggests that the dispersion parameter is equal to zero while the outcome variable is over dispersed and is not sufficiently described by the simpler Poisson distribution—hence, the need to report the negative binomial regression rather than just the result from the Poisson distribution.

The coefficients reported suggest that gender significantly influenced the number of hours devoted to work weekly during Covid-19. That is, holding other variables constant in the model, males devoted more time to work weekly compared with females (IRR =1.20, P<0.01) during the lockdown. Virtual teaching or learning during this period also had a positive and statistically significant effect on the weekly working hours (IRR =1.70, P<0.01). The ability to work from home often (IRR =1.20, P<0.05) also had a positive and statistically significant effect on the weekly hours devoted

to work during the lockdown. While having a poor health status during this period had a negative and statistically significant effect on the weekly hours of work, other control variables, such as age, household size, level of education, etc., had no effect on the number of hours worked weekly during the Covid-19 lockdown.

Table 1: Background Information of Respondents

VARIABLES		MEN (77%)		WOMEN (23%)		TOTAL	
Individual characteristics							
Age (in years)	18–39 years	32	36.36	13	48.15	45	39.13
	39–59 years	52	59.09	13	48.15	65	56.52
	≥ 60 years	4	4.55	1	3.7	5	4.35
Education	Bachelor's degree	4	4.55	1	3.7	5	4.35
	Master's degree	31	35.23	9	33.33	40	34.78
	Doctorate degree	53	60.23	17	62.96	70	60.87
Household characteristics							
Household size	0–1	8	9.09	0	0	8	6.96
	2–5	54	61.36	22	81.48	76	66.09
	6	26	29.55	5	18.52	31	26.96
Household head	No	3	3.41	26	96.3	29	25.22
	Yes	85	96.59	1	3.7	86	74.78
Sector	Rural	8	9.09	5	18.52	13	11.3
	Urban	75	85.23	21	77.78	96	83.48
	Uncertain	5	5.68	1	3.7	6	5.22
Residence (within the institution)	No	72	81.82	22	81.48	94	81.74
	Yes	16	18.18	5	18.52	21	18.26
Academic characteristics							
Type	Federal	60	68.18	16	59.26	76	66.09
	State	15	17.05	5	18.52	20	17.39



	Private/Non-Governmental	13	14.78	6	21.59	19	16.52
Rank	Junior	14	15.91	9	33.33	23	20
	Mid-level	63	71.59	15	55.56	78	67.83
	Senior	11	12.5	3	11.11	14	12.17

Figures 1a–f: Changes in the allocation of work time

Note: Figure 1a—Self-performance rating on a scale of 1 through 5 pre-Covid-19 pandemic and during the Covid-19 pandemic lockdown. Figure 1b—Average number of hours spent on work weekly during the Covid-19 lockdown by gender. Figure 1c, 1d and 1e—The distribution of percentage changes in the share of time spent on research (c), supervision (d) and conference attendance (e) respectively. Figure 1f—The distribution of percentage changes in the access to research funds/grants.

Table 2: Variations in the share of time devoted to work and the associated factors

CHARACTERISTICS		DE-CLINE	CON-STANT	IN-CREASE	CHI-SQUARE (P-VALUE)
Age	18-39	0 (0)	31 (68.89)	14 (31.11)	χ^2 = 8.17 (0.12)
	40-59	4 (6.15)	36 (55.38)	25 (38.46)	
	60 and above	0 (0)	1 (20)	4 (80)	
Gender	Female	1 (3.7)	20 (74.07)	6 (22.22)	χ^2 = 3.51 (0.17)
	Male	3 (3.41)	48 (54.55)	37 (42.05)	
Household size	0-1	0 (0)	5 (62.5)	3 (37.5)	χ^2 = 2.35 (0.67)
	2-5	4 (5.26)	43 (56.58)	29 (38.16)	
	6-9	0 (0)	20 (64.52)	11 (35.48)	
Education	Bachelor's	0 (0)	2 (60)	5 (40)	χ^2 = 3.30 (0.51)
	Doctorate	3 (4.29)	37 (52.86)	30 (42.86)	
	Masters	1 (2.5)	28 (70)	11 (27.5)	
Electricity access	Adequate	4 (5.41)	31 (41.89)	39 (52.7)	χ^2 = 25.66 (<0.001)
	Inadequate	0 (0)	37 (90.24)	4 (9.76)	
Internet access	Adequate	4 (5.8)	28 (40.58)	37 (53.62)	χ^2 = 24.86 (<0.001)
	Inadequate	0 (0)	40 (86.96)	6 (13.04)	
Workspace condition/	Non-poor	4 (5.13)	33 (42.31)	41 (52.56)	χ^2 = 28.43 (<0.001)
	Poor	0 (0)	35 (94.59)	2 (5.41)	
Research materials	Non-poor access	4 (4.55)	43 (8.86)	41 (46.59)	χ^2 = 16.39 (<0.001)
	Poor access	0 (0)	25 (92.59)	2 (7.41)	
Caring for dependents (children, elderly etc)	No	4 (5.41)	28 (37.84)	42 (56.76)	χ^2 = 38.95 (<0.001)
	Yes	0 (0)	40 (97.56)	1 (2.44)	

Note: in Table 2, counts are given and the frequencies are provided in parentheses. Fisher's exact test was used to estimate the p-value in parenthesis.

Table 3: Factors influencing weekly working hours during Covid-19 lockdown

VARIABLES	POISSON (IRR)	STD. ERR	Z VALUE	NB (IRR)	STD. ERR	Z VALUE
Age—Under 40 years[ref]						
Age—40 years +	1.0466	0.1081	0.44	1.0570	0.0931	0.63
Gender—Female[ref]						
Gender—Male	1.2292	0.1165	2.18	1.1961	0.1113	1.92
Household size—5 members[ref]						
Household size—6 members +	1.0414	0.1242	0.34	1.0006	0.1049	0.01
Education—Master's degree[ref]						
Education—Doctorate degree	0.9139	0.1063	-0.77	0.9036	0.0921	-0.99
Sector—Rural[ref]						
Sector—Urban	0.9478	0.1321	-0.38	0.9944	0.1322	-0.04
Virtual classes—No[ref]						
Virtual classes—Yes	1.1752	0.1591	1.19	1.2461	0.1630	1.68
Work at home—Occasionally[ref]						
Work at home—Often	1.7078	0.1871	4.89	1.6967	0.1756	5.11
Electricity access—Adequate[ref]						
Electricity access—Inadequate	0.8951	0.1111	-0.89	0.9585	0.1109	-0.37
Internet access—Adequate[ref]						
Internet access—Inadequate	0.9897	0.1016	-0.10	0.9575	0.0998	-0.42

Workspace condition—Not poor[ref]						
Workspace condition—Poor	1.1672	0.1551	1.16	1.1423	0.1400	1.08
Caregiver—No[ref]						
Caregiver—Yes	0.7924	0.1035	-1.78	0.7841	0.0935	-2.04
Health status—Not poor[ref]						
Health status—Poor	0.6370	0.0996	-2.88	0.6077	0.0910	-3.33
Constant	16.2368	2.9336	15.43	16.0895	2.7485	16.26
Log pseudolikelihood	-552.2158			-418.0211	/lnalpha	-1.7964
Pseudo R^2=	0.2437			0.0678	alpha	0.1659
Prob>chi2=	<0.001			<0.001		

Note: IRR implies the incidence rate ratios and NB denotes the negative binomial result.

Discussion

The major preoccupation of this study is to unravel the effect of the Covid-19 lockdowns and 'work-from-home' approach on the academic activities of academics at Nigerian tertiary institutions. We employed the number of weekly working hours devoted to academic and research engagement at home to proxy their productivity during the lockdown period. The results from the study show that the number of working hours spent on research activities reduced significantly during the lockdown period. However, the results further revealed that the impact of the lockdowns and 'work-from-home' approach on academic activities varied across gender, with male researchers spending more time on research than their female counterparts during the lockdown period. The finding is not surprising given the enormity of domestic activities that female academics are expected to take on at home. This practice is evident in Africa and particularly in Nigeria where all the home responsibilities fall to women. This result validates the findings of Staniscuaski *et al.* (2020), Than (2020) and Cui *et al.* (2020), that Covid-19 lockdowns had a stronger effect on the academic productivity of female researchers than their male counterparts.

Furthermore, inferences from the chi-square test conducted showed that erratic power supply, poor workspace condition and poor Internet facilities were the major factors responsible for the decline in the number of working hours during the Covid-19 lockdown. The finding is in line with studies by Onyema *et al*. (2020) and Okocha (2020) that these factors had a significant effect on research and academic activities in Nigeria. There is no meaningful academic engagement that can be achieved when the electricity supply is not stable and there is no strong Internet connectivity to access the right materials for research activities. This challenge is more worrisome during the lockdown as academics do not have access to their offices where they can use alternative facilities and this means that there will be extra expenditure on fuel to generate electricity and Internet connectivity.

To buttress the finding above, the results from the chi-square test also reveal that caring for dependent children and elderly people significantly influences the number of working hours devoted to academic activities in Nigeria. This factor is more prevalent among female researchers due to the increase in childcare needs occasioned by school closure. The results are in tandem with the findings of Cui *et al*. (2020) and Alon *et al*. (2020). This implies that educated mothers would have to devote more time to cater for their children and elderly parents and this would, in turn, reduce the number of working hours on academic activities during the lockdown periods. The results from the negative binomial regression confirm the findings from the chi-square test, which suggests that gender plays an important role in affecting the number of working hours among Nigerian academics and researchers. The results also affirm that male researchers devote more time to work than the female researchers.

Lastly, on the other variables, evidence from the negative binomial suggests that virtual learning or teaching and the ability to work from home increased the number of working hours of Nigerian academics during the Covid-19 lockdowns, while health challenges significantly reduced the number of weekly work hours. The implication is that lecturers spend more time sourcing the right materials and preparing for their online classes and this by extension will increase the number of hours of work on a weekly basis. Similarly, it is often said that 'health is wealth'. Therefore, anyone who is not healthy cannot be productive; as such, people tend to spend a substantial number of their working hours taking care of their health rather than deploying it in productive academic engagement.

Conclusion

Covid-19 had a negative effect on education, in 'learning disruptions and decreased access to education and research facilities, job losses and increased student debts' as argued by Onyema *et al*. (2020:1). It is on this premise that this study investigated the effect of Covid-19 lockdowns and the 'work-from home' approach on academic activities in Nigeria. In achieving its objective, we employed primary data. The questionnaire was developed on Google Forms and distributed via emails and social media platforms for members of higher institutions and professional networks. Academics in Nigerian universities, polytechnics and colleges of education made up the study's population. The study used both chi-square test and multivariable regression to examine the effect of lockdown and the 'work-from-home' approach on Nigerian academics' activities. The study reveals that the effect of Covid-19 lockdowns on the number of weekly working hours varied across gender, with male researchers spending more time on work than their female counterparts.

In addition, the findings indicate that factors such as inadequate power supply, electricity access, workspace and access to research materials, as well as health status and increased care for children and the elderly, were significantly associated with a decline in the share of time devoted to work during the Covid-19 lockdowns. On the other hand, virtual teaching or learning and the ability to work from home more often had positive and statistically significant effects on the weekly hours devoted to work during the lockdown. The implication from these findings is that a prolonged lockdown in Nigeria will harm the education system thereby adversely affecting the outcomes of academics in terms of the weekly hours devoted to work.

This study is not without limitations. A serious challenge faced during the conduct of this research was the difficulty in getting our respondents to fill the Google Form, which affected the sample size of the study.

To curb the negative impacts of lockdowns and the 'work-from-home' approach on academic activities in Nigeria, the study recommends the following.

1. All necessary cautions should be put in place to ensure the safe resumption of academic activities on campus. These cautions include washing hands, wearing a face mask, using hand sanitiser, disinfecting the premises and maintaining social distance where possible.
2. Adequate infrastructure, such as power supply, access to electricity, a good workspace and access to research materials should be made available to academics if there is a need for continuous lockdown.

3. Improvement in energy and telecommunications infrastructure, in order to provide a more conducive work environment for academics and enable a prompt embrace of remote education in Nigeria.
4. Virtual learning or teaching should be given more attention by all Nigerian institutions, as it will promote and facilitate learning and teaching in the face of another outbreak.
5. Finally, studies of the effect of the Covid-19 lockdown and the 'work-from-home' approach on academic activities in other African countries could provide a useful comparative insight.

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Impact of Covid-19 Pandemic on the Financial Performance of SMEs in Nigeria: A Study of the South East Geopolitical Zone

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Abstract

This article explores the impact of the Covid-19 pandemic on the financial performance of small and medium-scale enterprises (SMEs) in the South East geopolitical zone of Nigeria. The study objective was to determine the extent to which the Covid-19 pandemic affected the revenue of SMEs, their profitability and their access to credit. The target population for the study were registered SMEs in the South East geopolitical zone of Nigeria, being Abia, Anambra, Ebonyi, Enugu and Imo. Using purposive sampling method, thirty SME owners from each zone were selected for the study, giving a total of 150 SME owners. The study adopted a quantitative research method, using a questionnaire. The findings revealed that the Covid-19 pandemic significantly reduced the profitability and revenue of SMEs but not their access to credit. The study therefore recommended the need for business owners to minimize cost and look for possible innovations/opportunities to grow sales and improve revenue. Also government should make soft loan available to SMEs to help cushion the effect of the pandemic on their financial performance. Finally, future research should consider other related variables that have not been covered in this article.

Keywords: Nigeria; SMEs; financial performance; Covid-19 pandemic

Résumé

Cet article porte sur l'impact de la pandémie de Covid-19 sur la performance financière des petites et moyennes entreprises (PME) de la zone géopolitique du Sud-est du Nigeria. L'objectif de l'étude était de déterminer l'impact de la pandémie de Covid-19 sur les revenus des PME, leur rentabilité et leur

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accès au crédit. L'étude avait pour population-cible les PME enregistrées dans la zone géopolitique du Sud-est du Nigéria, à savoir Abia, Anambra, Ebonyi, Enugu et Imo. Par la méthode d'échantillonnage raisonné, trente propriétaires de PME de chaque zone ont été sélectionnés pour l'étude, ce qui donne un total de 150 propriétaires de PME. L'étude a adopté une méthode de recherche quantitative utilisant un questionnaire. Les résultats ont révélé que la pandémie de Covid-19 a considérablement réduit la rentabilité et les revenus des PME, mais pas leur accès au crédit. L'étude recommande donc aux chefs d'entreprise de minimiser les coûts et de rechercher les innovations/opportunités possibles pour accroître les ventes et améliorer les revenus. Le gouvernement devrait également accorder des prêts à taux réduit aux PME afin d'atténuer les effets de la pandémie sur leurs performances financières. Enfin, les recherches futures devraient tenir compte d'autres variables connexes qui ne sont pas abordées dans le présent article.

Mots-clés : Nigeria ; PME ; performance financière ; pandémie de Covid-19

Introduction

Small and medium enterprise is critical to the growth and development of the global economy. It is a good source of job creation and of development for indigenous entrepreneurs and contributes to nation-building. Amidst all the challenges that regularly threaten the financial performance of SMEs, Covid-19 emerged towards the end of December 2019 from Wuhan, China (WHO 2020). On 11 March 2020, the World Health Organization (WHO) officially declared Covid-19 a pandemic (Cucinotta and Vanelli 2020). Covid-19 created a two-fold challenge—to health and the economy (WHO 2020). It affected nearly every business sector and industry across the globe (Islam *et al*. 2020). It generated panic globally, created unprecedented conditions that made governments come up with unusual policies aimed at fighting the disease, ranging from border closure, movement restriction and market closure to total lockdown. These measures adversely affected businesses and the global economy.

In Nigeria, both the federal and state governments took swift action to prevent the spread of the virus across the nation. The National Centre for Disease Control (NCDC), an agency of the Federal Government of Nigeria, oversaw the control of the spread of the virus across the nation (Ojukwu 2021). Recently, various analysts have projected a fall in aggregate demand and supply, dwindling exports and a rise in government expenditure as the negative effects of lockdown ripple across different sectors of Nigeria's economy (Aderemi *et al*.). This crisis particularly hit the revenue of SMEs, causing a sudden acute liquidity shortage, thereby threatening the survival of many viable businesses in the region (Enesi and Ibrahim 2021).

The Impact of Covid-19 on Business Enterprises in Nigeria

The business sector was not prepared for the pandemic or its associated challenges and so was badly hit by the crisis and the restrictions imposed to prevent the spread of the infection. The severity of lay-offs, reductions in hours of operation and limited access to credit impacted heavily on businesses. They also experienced great changes in overall operational costs. These were due to some confounding factors, including a rise in the cost of raw materials likely due to disruptions in supply chains, and increase in transportation cost due to the different lockdown measures (UNDP 2021). SMEs were more affected and more vulnerable than larger firms. The most significant negative impact of the pandemic on SMEs was the decline in sales revenues (Enesi and Ibrahim 2021). It is assumed that businesses may continue to experience the impact of the pandemic for some time (Abideen 2020).

Financial Performance

Financial performance is a subjective measure of the degree to which a firm can use assets from its primary mode of business to generate revenue (Oyedokun and Taiwo 2022). It is the effective implementation of monetary objectives to accomplish enterprise objectives. It measures the overall financial health of an enterprise. Good financial performance is very important for SMEs to survive and contribute to the growth of the economy (Okey-Colbert, Chinakwe and Aguwambe 2020).

SMEs encounter various challenges that critically affect their financial performance, such as lack of access to capital, inadequate infrastructure like electricity, financial illiteracy, unfavourable government policy, multiple taxes and levies by governments and other governmental agencies, fluctuation of forex, insecurity, corruption, high inflation rate and poor managerial skills, among others (Oyelola *et al*. 2013). Following the negative effect of the Covid-19 pandemic on the financial performance of SMEs, most SMEs started downsizing their staff strength to cope with the overhead expenses.

Covid-19 affected the financial performance of SMEs as measured by the following indicators in this study:

- *Revenue*: this is the gross inflow of economic benefits (cash, receivables and other assets) that arise from the ordinary operating activities of the business, such as the sales of goods and services, interest, royalties and dividends (Deloitte 2020).
- *Profitability*: this is the excess of revenue over expenditure attributed during the ordinary activities of the business before taxation (Ojukwu 2021).

- *Access to credit*: this relates to the ability of the enterprise to obtain financial services, including credit and other risk management services (Giang *et al*. 2019). The lack of access to financing is a major constraint to small business growth as businesses use capital to acquire resources (Carpenter and Peterson 2002).

Financial performance variables include gross profit margin, net profit margin, working capital, current ratio, financial leverage, inventory turnover, total asset turnover, return on equity, return on assets and operating cash flow (Stobierski 2020). Most SMEs could no longer use their assets to generate revenue because of low turnover and were challenged with operating liquidity to sustain their enterprises. The contraction in sales of goods and services as a result of the pandemic translated to a decline in revenue. This affected workers' wages, rental cost, loan repayment and delays in payments on accounts receivable. Due to inadequate cash flow, there were defaults in the repayment of loans and a direct decline in revenue (Abideen 2020).

Covid-19 as a topic and its macroeconomic effect have generated a lot of attention from researchers and led to several discourses. Much research has been done on the impact of Covid-19 on different sectors, including MSMEs, health, aviation, agriculture, education and others, but little has been done on the financial performance of SMEs, especially in developing countries like Nigeria. Therefore, this study fills this gap in knowledge and contributes to these debates by investigating the impact of Covid-19 on the financial performance of small and medium-scale enterprises (SMEs) in the South East geopolitical zone of Nigeria with a view to identifying the mitigating factors that can ensure the sustainability of these enterprises. The study intends to consider factors such as revenue, profitability and access to credit as the metrics of financial performance of SMEs.

Statement of the Problem

The Covid-19 pandemic and related containment measures had a heavy impact on economies across the world. The containment measures included restrictions on the movement of people, goods and services, as well as total lockdown, which affected consumers and investors. It had a negative impact on the financial performance of SMEs through its effect on their cashflow (which is generally limited under normal conditions), supplies, revenue, profitability, access to credit and lack of patronage of SME business generally (Enesi and Ibrahim 2021). The pandemic caused a decrease in production levels, sales and revenue, and an increase in deaths, unemployment and poverty, among other factors. It caused great losses for businesses and industries. The aggregate loss globally was projected to be more than USD 4 trillion (Ozili 2020). The lockdowns affected the purchasing rate of consumers, which fell from

approximately 59 per cent to 41 per cent from January 2020 to June 2020, which affected the productivity of SMEs (Bularafa and Adamu 2021). Nigeria's National Bureau of Statistics reported a dynamic increase in the national unemployment rate, from 23 per cent in 2019 to 27 per cent in Q12020, to 33.5 per cent in Q42020, respectively, due to the Covid-19 pandemic (James 2021).

SMEs are easily affected by environmental distortion. The environmental shock caused by the pandemic had a great effect on their routine activities and was a huge threat to their survival (Sullivan-Taylor and Branicki 2011). In particular, the pandemic hampered the financial performance of SMEs in Nigeria—most SMEs in Nigeria went out of business after the pandemic because of lack of operating funds. Herbert (2022) indicates that the reduction of revenue due to decreased demand, coupled with a tight credit market, could make many SMEs insolvent quickly. SMEs are typically more financially fragile and have a smaller cash cushion with weaker supply-chain finance capabilities than their larger counterparts. This makes them less resilient to crisis. The financial performance of most of Nigeria's SMEs dropped dramatically due to a disruption of demand and supply, the financial burden of operational expenses, a liquidity crunch, and the shutdown of production. This nosedive had important consequences for public finance, caused by the reduction of tax revenues (Syriopoulos 2020).

Business-owners and policy-makers require guidance to deal with the negative impact of such an event on business enterprise. This has spurred many researchers to start in-depth studies into identifying the measures that policy-makers and business-owners can adopt to reduce such an impact to the barest minimum in the future. Several authors have made a meaningful contribution to the study of the effect of Covid-19 on the performance of SMEs in Nigeria (Aderemi *et al*. 2020; Amuda 2020; Bularafa and Adamu 2021; Enesi and Ibrahim 2021). The generalities in the effect of the pandemic on the general performance of SMEs warrant this focus and objective studies to determine its actual impact on the financial performance of SMEs, with a broader scope for a holistic intervention that considers the contribution of this sector to economic development.

Objectives of the Study

1. To determine the extent to which Covid-19 affected the revenue of SMEs in the South East geopolitical zone of Nigeria.
2. To determine the extent to which Covid-19 affected the profitability of SMEs in the South East geopolitical zone of Nigeria.
3. To determine the extent to which Covid-19 affected SMEs' access to credit in the South East geopolitical zone of Nigeria.

Research Hypothesis

- H_{O1} Covid-19 had no significant effect on the revenue of SMEs in the South East geopolitical zone of Nigeria.
- H_{O2} Covid-19 had no significant effect on the profitability of SMEs in the South East geopolitical zone of Nigeria.
- H_{O3} Covid-19 had no significant effect on SMEs' access to credit in the South East geopolitical zone of Nigeria.

Review of the Literature

Conceptual Review

Covid-19 is an infectious disease that became prevalent towards the end of 2019 (Ohia, Bakarey and Ahmad 2020, in Bularafa and Adamu 2021). The pandemic and related containment measures took an extremely heavy toll on economies across the world. Global GDP declined by 4.5 per cent in 2020 (OECD 2020). Coronavirus was predicted to trim down the global economy by 3 to 6 per cent in 2020, with a fall in global trade by about 13 to 32 per cent (Jackson *et al*. 2021). The International Monetary Fund (IMF) estimated the contraction of global domestic product by 4.9 per cent, claiming that the effect of the pandemic on the global economy was beyond anticipated impacts (Mallum and Kadiri 2020; Yadav and Igbal 2021). SME revenue was hit hard, causing severe liquidity shortages. Access to finance became a major concern for these enterprises and many faced acute liquidity shortages as revenues dropped. Evidence indicates that operating expenses are often fixed and fall by only 6 per cent on average when revenues drop by 10 per cent (OECD 2020). Small enterprises are not able to cut operating expenses in proportion with their loss in revenues, creating pressure on their cash flow (Bank for International Settlements 2020).

Prasad (2021) studied the effect of the pandemic on the financial performance of the manufacturing, service and pharmaceutical sector of Indian SMEs between 2019 and 2020 and 2020 and 2021. The study selected a sample of 100 listed SMEs. The indicators of financial performance were total revenue, operating profit, net profit ratio and liquidity. The findings revealed that the pandemic negatively affected the manufacturing and service sectors. The study failed to reveal the methodology adopted, method of data collection and the method of data analyses. Its coverage of three sectors was reasonable but should have extended to other sectors.

Enesi and Ibrahim (2021) studied the effect of the pandemic on the performance of SMEs in Abuja-FCT Nigeria. The study adopted a quantitative research technique. Data was collected by means of a structured

questionnaire on ten selected SMEs with 100 respondents. Their findings indicated that the pandemic resulted in: loss of competent staff, following a reduction in staff salaries; low revenue or income generation; and lack of sincerity on the part of government to reduce the prevalence of the pandemic. However, the study focused on only one state of the country. Further research is needed to identify the impact of Covid-19 on SMEs in other states within the six geopolitical zones of Nigeria, hence the current study.

Aderemi *et al*. (2020) explored the impact of the Covid-19 pandemic on SMEs in Nigeria, focusing on SMEs in Ogun State, which were engaged in three essentials—food and consumables, pharmaceuticals, and oil and gas. The study made use of qualitative primary data. Its findings showed that the enterprises experienced a moderate reduction in production and sales during the lockdown. However, the study was limited in scope and did not consider the impact of the virus on the financial performance of SMEs, which is the gap the current research intends to fill.

In another study, Amuda (2020) surveyed the impact of the coronavirus on SMEs using secondary sources of data collection to gather vital information. The findings indicated that Covid-19 caused uncertainties in all spheres of human endeavours. In not using primary data, the study created a research gap.

Ojukwu (2021) examined the impact of the pandemic on the financial performance of micro enterprises (MEs) in Nigeria, adopting the documentary and survey method with a special focus on Ultra-Modern Market, Diobu, in Port Harcourt. A sample of 160 MEs was selected. Regression analysis and correlation matrix techniques were used to test the hypothesis. The study found that the pandemic had a negative and significant impact on the revenue of MEs. The study focused on only micro enterprises, which necessitates further study. It was limited further in centering only on the market in Mile 3, Diobu, Port Harcourt. The current study intends to broaden the scope by investigating SMEs in the South East geopolitical zone of Nigeria. From the literature reviewed the researcher presents some of the gaps in literature as relates to the impact of Covid-19 on business enterprises and financial performance, which the present study attempts to fill.

Theoretical Review

The study used system theory and prospect theory. System theory was proposed by Bertalanffy in the 1940s. The theory assumes that every system has causal boundaries, is influenced by its context, defined by its structure and expressed through its relations with other systems. A system 'is more than the sum of its parts'. Changing one component of a system may affect other components of the whole system. A unit cannot function appropriately

without depending on other units (Bularafa and Adamu 2021). There are three elements of a system: micro, mezzo and macro. Each element functions as a unit of a whole with different sub-units. Thus, Covid-19 can be seen as an element that interrupted the elements or boundaries of wellbeing by weakening the health structure and social system. The relevance of this theory to this study is that SMEs cannot function appropriately without finance. When the SME's financial performance is affected by a pandemic like Covid-19, the whole system that is the SME will be drastically affected.

Prospect theory, which was proposed by Tversky and Khneman in 1992, assumes that investors value profit and losses differently, placing more weight on perceived profit versus perceived losses (Chen 2021). The theory is relevant in the sense that profit which is valued more by investors can only be achieved when an enterprise like SME has improved financial performance. When this financial performance is affected by a pandemic like Covid-19, it devalues the firm and deters investors who could have invested in it to increase growth. Prospect theory accelerates the prediction into the near future about how a manager will react under a threat situation. The relevance of this theory to the study is that managers of SMEs are expected to predict measures to manage the financial performance of their business as it is affected by the pandemic.

Empirical Review

Enesi and Ibrahim's study (2021) on the performance of SMEs in Abuja-FCT Nigeria used a quantitative research technique. Data was collected through administration of a structured questionnaire to a sample size of eighty SMEs. The data was presented in a bar chart with the aid of a simple percentage for the analysis, while chi-square was used to test the hypothesis. The findings indicated that the pandemic led to a reduction in revenue of the enterprise. It was recommended that business should adopt the e-business model. It was also recommended that MEs should develop resilience through adopting emerging technologies to drive sales and manage inventory properly and boost profits.

Bularafa and Adamu (2021) carried out a study on the effect of the pandemic on SME performance in Nigeria, adopting a survey research design data was obtained through a questionnaire administered to 278 SMEs in Yobe State. The findings revealed that market closure, movement restriction and lockdown were the three variables that had a significant negative effect on the SMEs' performance. The highest among the variables was the market closure. It was recommended that proactive plans should be put in place for SMEs in anticipation of events such as a pandemic that can hurt businesses.

Methodology

This study was carried out in the South East geopolitical zone of Nigeria. It adopted a descriptive survey research design using a structured questionnaire to solicit the opinion of the respondents and to understand the impact of the Covid-19 pandemic on the financial performance of SMEs in the South East geopolitical zone of Nigeria. The population of the study were SMEs in the chosen geopolitical zone, particularly registered SMEs in Abia, Anambra, Ebonyi, Enugu and Imo. Using the purposive sampling method, a sample of 30 SME owners were selected from each zone, giving a total of 150 SMEs owners. 150 questionnaires were sent to the respondents by email, out of which 140 were filled and returned.

The responses were distributed according to a five-point Likert rating scale. The scale was subjected to item analysis to ensure it was valid and reliable. Reliability was tested using Cronbach's alpha reliability test, to determine the internal consistency of the instrument and average reliability coefficient. The mean was used to answer the three research questions. Making decisions on the research questions depended on the level of dispersion of the mean. The mean responses below 3.0 were rated 'below average or expectation', while those above 3.0 were rated 'above expectation'. The Pearson correlation test was further used to ascertain the level of impact of Covid-19 pandemic on the three variables of financial performance of SMEs used, which included revenue, profitability and access to credit. Acceptance or rejection of null hypotheses was based on the probability. When the value was less than 0.05, the hypothesis was rejected, but if otherwise, it was accepted. The correlation coefficient was used to present the extent of the relationship between the Covid-19 pandemic and financial performance as measured by revenue, profitability and access to credit.

Discussion of Findings

Table 1 presents the extent to which the Covid-19 pandemic affected the revenue of SMEs in the South East geopolitical zone of Nigeria using the mean value and standard deviation. Analysis showed that the value of the pooled mean rating is 3.99 on a five-point Likert scale. This means that the extent to which the pandemic affected SME revenue is above average or higher than the expected mean of 3.0. The standard deviation value is 1.2492, which shows that the respondents' responses are spread around the mean. The correlation coefficient is 0.664 (see Table 2) which shows that the extent of relationship between the pandemic and SME revenue is positively and moderately correlated at 66.4 per cent.

Table 1: Respondents' Answers to Research Question 1

To what extent did Covid-19 affect the revenue of SMEs in the South East geopolitical zone of Nigeria?

	The extent to which Covid-19 affected the revenue of SMEs	**VHE**	**HE**	**A**	**LE**	**VLE**	**TO-TAL**	**X**	**SD**
1	The revenue of the business decreased due to disruption in business activities.	85 (425)	25 (100)	15 (45)	10 (20)	5 (5)	140 (595)	4.28	1.077
2	Wage expenses imposed a greater cost challenge on the business because of lockdown of productive sectors.	70 (350)	20 (80)	36 (108)	10 (20)	04 (04)	140 (562)	4.04	1.119
3	Rent and operational costs could not be paid following market closure measures.	50 (250)	60 (240)	10 (30)	10 (20)	10 (10)	140 (550)	3.95	1.144
4	Sale of goods and services decreased due to the pandemic.	70 (350)	20 (80)	20 (60)	10 (20)	20 (20)	140 (530)	3.80	1.466
5	Market closure led to decrease in supply of goods/services	75 (375)	22 (88)	12 (36)	15 (30)	16 (16)	140 (545)	3.88	1.440
	Pooled mean							3.99	1.249

Note: VHE = very high extent, HE = high extent, A =average, LE = low extent, VLE = very low extent

Source: Author's field survey

Test of Hypothesis 1

H_{O1} Covid-19 has no significant effect on the revenue of SMEs in the South East geopolitical zone of Nigeria.

Table 2: The Correlation Relationship Between the Pandemic and the Revenue of SMEs in the South East geopolitical zone of Nigeria

VARIABLES	N	R (CORRELATION COEFFICIENT)	r (P-VALUE)	REMARK
Covid-19 pandemic	140	0.664	0.000	Reject the null hypothesis
Revenue of SMEs in the region	140			

Note: N = number of respondents; R = correlation coefficient; r = probability value.

Source: SPSS 20

Table 2 presents the correlation relationship between the Covid-19 pandemic and the revenue of SMEs in the region. Analysis shows that the observed correlation coefficient of 0.000 is significant (at $P<0.05$), because the probability value is less than 0.05 at 5 per cent level of significance. The results therefore led to the rejection of the null hypothesis one, which stated that: Covid-19 has no significant effect on the revenue of SMEs in the region. The conclusion is that the Covid-19 pandemic had a significant effect on the revenue of SMEs. It significantly decreased revenue of SMEs over the period in view. Reliability was tested with Cronbach's alpha reliability test, to determine the internal consistency of the instrument. An average reliability coefficient of 0.976 was obtained, which proved that there is internal consistency in the research instruments used.

Table 3: Respondents' Answers to Research Question 2

To what extent did Covid-19 affect the profitability of SMEs in the South East geopolitical zone?

	The extent to which Covid-19 affected the profitability of SMEs in Nigeria	**VHE**	**HE**	**A**	**LE**	**VHE**	**TO-TAL**	**X**	**SD**
1	Covid-19 pandemic affected the degree of profitability of businesses due to business closure.	72 (360)	35 (140)	21 (63)	5 (10)	07 (07)	140 (580)	4.14	1.127
2	Many business-es failed during the pandemic.	60 (300)	40 (160)	10 (30)	10 (20)	20 (20)	140 (530)	3.81	1.409
3	Covid-19 re-duced the profit margin of the business.	90 (450)	10 (40)	15 (45)	15 (30)	10 10	140 (575)	4.15	1.280
4	Market closure led to low rate of return on investment.	75 (375)	22 (88)	13 (39)	15 (30)	15 (15)	140 (547)	3.93	1.28
5	Low utilisation of resources by the enterprise resulted in low profit-making during the pandemic.	60 (300)	20 (80)	20 (60)	18 (36)	22 (22)	140 (498)	3.61	1.381
	Pooled mean							3.93	1.280

Note: VHE = very high extent, HE = high extent, A =average, LE = low extent, VLE = very low extent.

Source: Author's field survey

Table 3 presents the extent to which the pandemic affected SME profitability in the South East geopolitical zone of Nigeria using the mean value and standard deviation. Analysis shows that the value of the pooled mean rating is 3.928 on a five-point Likert scale. This means that the extent to which the pandemic affected SME profitability is above average or higher than the expected mean of 3.0. The standard deviation value is 1.0394. It shows that the respondents' replies are spread around the mean and were consistent with one another. There is a correlation coefficient of 0.538 (see Table 4), which shows that the extent of relationship between the Covid-19 pandemic and profitability of SMEs is positively and moderately correlated at 53.8 per cent.

Test of Hypothesis 2

H_{O2} Covid-19 had no significant effect on the profitability of SMEs in the South East geopolitical zone of Nigeria.

Table 4: Correlation Relationship between the Pandemic and Profitability of SMEs in the South East geopolitical zone of Nigeria

VARIABLES	N	R (CORRELATION COEFFICIENT)	r (P-VALUE)	REMARK
Covid-19 pandemic	140	0.538	0.001	Reject the null hypothesis
Profitability of SMEs in the region	140			

Note: N = number of respondents; R = correlation coefficient; r = probability value.
Source: SPSS 20

Table 4 presents the correlation relationship between the Covid-19 pandemic and SME profitability in the South East geopolitical zone of Nigeria. Analysis shows that the observed correlation coefficient of 0.000 is significant (at $P<0.05$), because the probability value is less than 0.05 at 5 per cent level of significance. The results therefore led to the rejection of the null hypothesis two, which stated that Covid-19 had no significant effect on the profitability of SMEs in the region. The conclusion is that the Covid-19 pandemic had a significant effect on SME profitability. It significantly decreased the profit of SMEs over the period in view. Reliability was tested with Cronbach's alpha reliability test, to determine the internal consistency of the instrument. An average reliability coefficient of 0.985 was obtained, which proved that there is internal consistency of the research instruments used.

Table 5: Respondents' Answers to Research Question 3

To what extent did Covid-19 affect SMEs' access to credit in the South East geopolitical zone of Nigeria?

	The extent to which Covid-19 affected SME access to credit	**VHE**	**HE**	**A**	**LE**	**VLE**	**TO-TAL**	**X**	**SD**
1	The interest rates charged by banks are unsustainable thereby limiting access to credit during the pandemic.	21 (105)	26 (104)	25 (75)	36 (72)	32 (32)	140 (388)	2.81	1.367
2	Weak capital structure of SMEs to meet collateral requirement hinders SME access to credit.	75 (375)	20 (80)	15 (45)	18 (36)	12 (12)	140 (548)	3.91	1.391
3	Government strict regulatory measures to curb the challenge of Covid-19 affected SMEs' access to credit.	90 (425)	20 (80)	22 (66)	05 (10)	03 (03)	140 (584)	4.54	2.637
4	Lack of awareness of available government grants/ low-interest loan opportunities hinders SMEs' access to credit.	80 (400)	14 (56)	16 (48)	10 (20)	20 (20)	140 (544)	3.86	1.539
5	Lack of free flow of information between SMEs and financial institutions affected SME access to credit.	20 (100)	30 (120)	30 (90)	25 (50)	35 (35)	140 (395)	2.84	1.371
	Pooled mean							3.59	1.661

Note: VHE = very high extent, HE = high extent, A =average, LE = low extent, VLE = very low extent
Source: Author's field survey

Table 5 presents the extent to which the Covid-19 pandemic affected SME access to credit in the South East geopolitical zone of Nigeria using the mean value and standard deviation procedure. Analysis shows that the value of the pooled mean rating is 3.592 on a five-point Likert scale. This means that the extent to which the pandemic affected access to credit of SMEs was above average or higher than the expected mean of 3.0. The standard deviation value is 1.661, and showed that the respondents' responses are spread around the mean and consistent with one another. There is a correlation coefficient of 0.270 (see Table 6), which shows that the extent of the relationship between the Covid-19 pandemic and SME access to credit was positively and moderately correlated at 27 per cent.

Test of Hypothesis 3

H_{O3} Covid-19 had no significant effect on SME access to credit in the South East geopolitical zone of Nigeria

Table 6: Correlation Relationship Between the Pandemic and SMEs' Access to Credit in Nigeria

VARIABLES	N	R (CORRELATION COEFFICIENT)	r (P-VALUE)	REMARK
Covid-19 pandemic	140	0.270	0.080	Accept the null hypothesis
SME access to credit in the region	140			

Note: N = number of respondents; R = correlation coefficient; r = probability value.
Source: SPSS 20

Table 6 illustrates the correlation between the Covid-19 pandemic and SME access to credit in the South East geopolitical zone of Nigeria. Analysis shows that the observed correlation coefficient of 0.080 is insignificant (at $P>0.05$), because the probability value is greater than 0.05 at 5 per cent level of significance. This therefore led to the acceptance of the null hypothesis, which stated that Covid-19 had no significant effect on SME access to credit in the region. The conclusion is that the Covid-19 pandemic had no significant effect on SME access to credit over the period in view. Hence, Covid-19 did not significantly decrease SME access to credit. Cronbach's alpha reliability test was used to determine the internal consistency of the instrument. An average reliability coefficient of 0.820 was obtained, which proved that there was internal consistency of the research instruments used.

Conclusion

In conclusion, the study findings indicate that the Covid-19 pandemic had a devasting effect on the financial performance of SMEs in the South East geopolitical zone of Nigeria, which may ultimately lead to the liquidation of some businesses due to a reduction in demand and supply, revenue and profitability. Some SMEs are restructuring to remain efficient amidst the pandemic. The prevalence of the pandemic will change the dynamics of doing business. The study concludes that the pandemic significantly and negatively affected the financial performance of SMEs. This position agrees with the findings of Ojukwu (2021) and the survey of Dushime and Osele (2021). It is advisable for SMEs to assess the financial damages their companies may face and strategically address protection measures that will assist in mitigating the impact of the pandemic.

The following recommendations can help to ameliorate the negative and significant impact of the pandemic on the financial performance of SMEs in the South East geopolitical zone of Nigeria.

1. There is a need for business owners to adapt to new norms and emerging technology, motivate themselves and their workers to see possible/innovative opportunities to grow, and increase sales to improve their revenue.
2. SME owners should develop resilience to navigate through this pandemic, reduce overhead expenses, cut down on wages, rent and other operational costs, minimise costs and improve profit margins.
3. To improve access to credit, government/financial institution should make loans available to SMEs without strict adherence to the documentation requirements, such as CAC registrations, tax clearance certificate, collateral and audited accounts, which are standard requirements in the collection of any facility from financial institutions. Rather, documents based on their data tied to their Bank Verification Number (BVN), which is the means of identifying the SME, can be used.
4. Government should make grants/soft loans available to SMEs, relax loans and defer tax payments to help them cushion the effect of the pandemic on their financial performance. Lower interest rates could be embarked on by the appropriate policy-makers to help SMEs remain financially afloat.

The limitations of the study created room for suggestions for further studies:

1. The study explored the impact of Covid-19 on the financial performance of SMEs in the South East geopolitical zone of Nigeria; further research could be carried out across other geopolitical zones of the country.

2. The study considered some variables such as revenue, profitability and access to credit as the metrics for financial performance; further research could consider other variables.
3. The study did not consider the impact of financial institutions/government intervention on SME operation over the period in view; further research could consider this.

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APPENDIX: Mean Result

Table A1: Covid-19 and SME revenue

	ITEM 1	ITEM 2	ITEM 3	ITEM 4	ITEM 5
Mean	4.28	4.04	3.95	3.80	3.88
N	139	139	139	138	137
Std. Deviation	1.077	1.119	1.144	1.466	1.440
Variance	1.160	1.252	1.309	2.148	2.074
Minimum	1	1	1	1	1
Maximum	5	5	5	5	5
Sum	595	561	549	524	532
Skewness	-1.394	-.764	-1.255	-.855	-.931
Std. Error of Kurtosis	.408	.408	.408	.410	.411
% of Total N	100.0%	100.0%	100.0%	100.0%	100.0%

Reliability Statistics

Cronbach's Alpha	N of Items
.976	5

Table A2: Covid-19 and SME profitability

Report

	ITEM 1	ITEM 2	ITEM 3	ITEM 4	ITEM 5
Mean	4.14	3.81	4.15	3.93	3.61
N	140	140	140	140	140
Std. Deviation	1.127	1.409	1.280	1.381	1.487
Sum	579	533	581	550	505
Minimum	1	1	1	1	1
Maximum	5	5	5	5	5
Range	4	4	4	4	4
Variance	1.269	1.984	1.639	1.909	2.211
Kurtosis	1.015	-.371	-.024	-.442	-1.120
Skewness	-1.313	-.999	-1.182	-.983	-.591

Reliability

Reliability Statistics

Cronbach's Alpha	N of Items
.985	140

Table A3: Covid-19 and SME access to credit

Report

	ITEM 1	ITEM 2	ITEM 3	ITEM 4	ITEM 5
Mean	2.81	3.91	4.54	3.86	2.84
N	140	140	140	140	140
Std. Deviation	1.367	1.391	2.637	1.539	1.371
Minimum	1	1	1	1	1
Maximum	5	5	33	5	5
Range	4	4	32	4	4
Variance	1.869	1.935	6.955	2.368	1.879
Kurtosis	-1.204	-.614	98.921	-.750	-1.234
Skewness	.218	-.918	9.038	-.934	.063
% of Total N	100.0%	100.0%	100.0%	100.0%	100.0%

Reliability Statistics

Cronbach's Alpha	N of Items
.820	140

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Digital Learning Response in the Midst of the Covid-19 Pandemic: The Case of Mauritius

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Abstract

This article investigates learners' perception of their ability to adapt to online learning and the challenges they encountered as well as the opportunities they found in this new e-learning environment, in the midst of the Covid-19 pandemic. A comprehensive survey was undertaken using an online questionnaire circulated among male and female students across various faculties at five universities and business schools in Mauritius. The results indicate that Covid-19 was a major disruption in higher education studies. Despite the online learning approach, students enrolled in STEM degrees were more impacted compared to those in non-STEM degrees. Around one-third of the students asserted that online learning was a major challenge, more so for those in the lowest-income group who lacked the necessary digital tools to adapt to this new learning environment. A non-conducive home environment further had a negative bearing on students' concentration and ability to cope with their studies. We noted that postgraduate students adapt to digital learning better compared to undergraduates. There is thus a need to rethink, revamp and redesign the education system to be prepared for future shocks and build resilience through the application of best practices in the digitalisation of the education system.

Keywords: digital learning; learners' perceptions; higher education; STEM degrees; Covid-19

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Résumé

L'article étudie la perception qu'ont les apprenants de leur capacité à s'adapter à l'apprentissage en ligne et les défis qu'ils ont rencontrés ainsi que les opportunités qu'ils ont trouvées dans ce nouvel environnement d'apprentissage en ligne, au milieu de la pandémie de Covid-19. Une enquête exhaustive a été menée à l'aide d'un questionnaire en ligne distribué aux étudiants et étudiantes de différentes facultés de cinq universités et écoles de commerce de l'île Maurice. Les résultats indiquent que la pandémie de Covid-19 a fortement perturbé les études supérieures. Malgré l'approche de l'apprentissage en ligne, les étudiants inscrits dans les filières STIM ont été plus touchés que ceux des filières non STIM. Environ un tiers des étudiants ont affirmé que l'apprentissage en ligne constituait un défi majeur, surtout pour les étudiants les plus modestes qui ne disposaient pas des outils numériques nécessaires pour s'adapter à ce nouvel environnement d'apprentissage. Un environnement familial peu propice a également eu un impact négatif sur la concentration des étudiants et leur capacité à suivre leurs études. Nous avons constaté que les étudiants de troisième cycle s'adaptent mieux à l'apprentissage numérique que les étudiants de premier cycle. Il est donc nécessaire de repenser, de réorganiser et de redéfinir le système éducatif afin de se préparer aux chocs futurs et de renforcer la résilience grâce à l'application des meilleures pratiques en matière de numérisation du système éducatif.

Mots-clés : apprentissage en ligne ; perceptions des apprenants ; enseignement supérieur ; filières STEM ; Covid-19

Introduction

Since the Covid-19 pandemic started, much human activity has moved online (Donthu and Gustafsson 2020; Kramer and Kramer 2020). The education system has been no exception, and has encountered profound changes (Marinoni and Van't Land 2020). Education systems across the globe reacted to the pandemic by closing schools, universities and training institutions, and rolling out remote-learning options for students as an emergency response (World Bank 2021). The traditional models of learning and teaching proved to be redundant (Lemay and Doleck 2020). Thus, most higher education institutions have precipitated their move to online teaching and learning activities and have reconsidered ways of teaching and assessment (García-Peñalvo *et al*. 2021).

School closures in fact compounded an ongoing learning crisis for many. Education was disrupted across more than 191 countries and affected around 1.5 billion students and 63 million primary and secondary teachers (UNESCO 2021). In October 2021, 32 per cent of countries across the world

had fully or partially closed their schools and universities. The lengthiest closures were in South Asia, and Latin America and the Caribbean, with an average of 429 and 387 days, respectively (World Bank 2021).

The remote-learning response of countries as a result of the Covid-19 pandemic varied and included multiple modes. According to the World Bank Report (2021), most countries delivered remote learning via online media (91 per cent) and TV (85 per cent), followed by paper-based take-home materials (82 per cent) and mobile phones (70 per cent). A multimodal remote-learning approach was adopted by 97 per cent of countries within Latin America and the Caribbean, followed by 93 per cent in Europe and Central Asia and 80 per cent in the Middle East and North Africa (World Bank 2021). However, students and teachers worldwide have been struggling with this rapid transition to online learning, even those in countries with reliable infrastructure and household connectivity. Disparities in online learning are significant across low-income countries and in particular in the global South, where nearly 90 per cent of students in sub-Saharan Africa do not have computers at home while 82 per cent are unable to connect online (World Bank 2021).

On 20 March 2020, following the confirmation of the first Covid-19 cases in Mauritius, the government took bold action and announced a sanitary lockdown[1] of the island in a bid to stop the spread of the pandemic. Initially meant to last two weeks, the curfew was extended; it ended on 31 May. Schools and universities were closed from 19 March and students did not attend classes until 1 July 2020—a period of more than two months. This critical situation forced all educational institutions to adopt online teaching and learning almost overnight. Even the law was amended with respect to this in order to maintain a continuity of teaching and learning for all through remote learning and to mitigate the immediate impact of school closures, particularly for the most vulnerable. The Covid-19 (Miscellaneous Provisions) Bill and the Quarantine Bill facilitated digital education to ensure that learning remained uninterrupted during the Covid-19 outbreak.

While primary and secondary school in Mauritius involved a blend of distance and online learning, including broadcast lessons, higher education embarked mostly on online teaching and learning (including thesis supervision and assessments). The overnight shift from traditional classroom teaching and learning to online has had a number of implications and challenges for both lecturers and students at most universities, more so in that they were not fully prepared for such an abrupt switch. Most universities in Mauritius have now engaged with a blended teaching and learning approach. This is in a bid to reduce interaction between students and avoid crowds, hence minimising the spread of the virus and infection rates. For instance, the

island's oldest university, the University of Mauritius, offered more than 50 per cent of its modules online after the removal of mobility restrictions and all education institutions were reopened in July 2020.

With this sudden shift away from classrooms in Mauritius, the aim of this article is to investigate the learners' perception of online learning in the midst of the Covid-19 pandemic and evaluate the extent to which learning took place through digital means. It further investigates the opportunities and challenges of online learning to provide an assessment of the extent to which university students were able to adapt to this new learning and teaching method. Our focus will be on higher education given that the shift to online and now blended teaching and learning has been much more pronounced and appears to be increasingly the norm at this level.

To explore learners' perspectives, a comprehensive questionnaire was designed as per the online-learning climate scale model proposed by Kauffman *et al*. (2015). The target group was students enrolled in undergraduate or postgraduate degrees at public and private universities in Mauritius.[2] The questionnaire was circulated online to business and social sciences students across five universities; 575 usable responses were recorded. An analysis of the feedback enabled us to evaluate learners' perception of digital learning in the country and is meant to assist in the recommendation of measures that will optimise digital learning in higher education in Mauritius.

The rest of this paper is organised as follows: the next section is a brief review of the related literature, followed by the methodology, survey design and sampling; then an analysis and discussion of the results, and the conclusions and policy recommendations.

Literature Review

Theoretical review and conceptual framework of an online learning environment

The traditional classroom is no longer the only place to get access to formal education. The brick-and-mortar structure of learning has lost its importance mainly with advances in technology and the Internet. Today, the Internet has made online learning possible and students as well as educators find that it enhances the learning process (Nguyen 2015). Online learning consists of purely online and hybrid learning. The purely online programme refers to programmes delivered completely over the Internet while the hybrid or blended mode combines online and traditional in-class learning (Nguyen 2015). The online learning environment is considered to be in a unique cultural context. Cyberspace is identified by Benedikt (1991) to have 'a

geography, a physics, a nature, and a rule of human law'. Learners have predeterminations when they come to online learning. Further, Kirby and Boak (1987) argue that Internet skills alone are not enough to determine competency in Internet usage. It is important to note that learners' Internet efficacy allows them to efficiently cope with the necessities of working in this environment. Hence, teachers must make sure that learners are able to use technology and access the Internet effectively.

The technology-enhanced learning environment can be used to discuss the concept of online learning. It refers to the application of technology in the context of education in order to help the process of learning and ease the communication between students and educators. More so, it helps to diffuse multimedia teaching materials as well as motivate students to engage in research and discuss actively their personal understandings in online discussion forums (Tsai 2017). With technology, students can develop better methods of learning (Tsai 2009). The different technology-enhanced learning methods are mobile learning, Internet-assisted learning, global learning and online education.

Learning environments can be defined as a composite and dynamic system where certain strategies are applied and the available resources are used to attain certain planned learning goals. There are four core components of a technology-enhanced learning environment, illustrated in Figure 1.

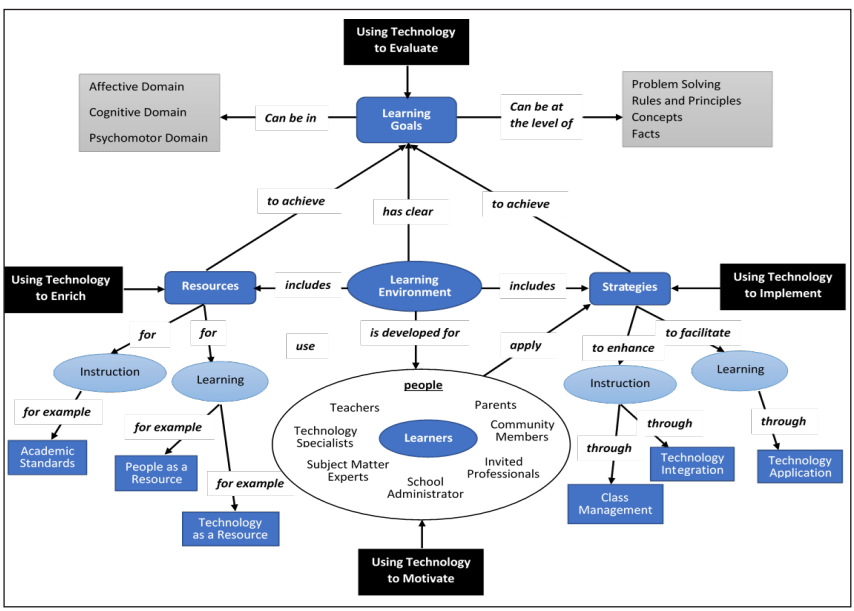

Figure 1: Core components of a technology-enhanced learning environment
Source: Wang and Kinuthia, 2004

The four core components of a technology-enhanced learning environment, as per Wang and Kinuthia (2004), comprise:

1. Technology used to evaluate learning goals.
2. Technology used to motivate learners and other stakeholders.
3. Technology used to enrich resources.
4. Technology used to implement strategies.

These four components function together to ensure a dynamic learning environment. The authors specify that any learning environment should have learning goals and these could be in any sphere of learning, such as affective, cognitive and psychomotor, and at any levels of learning, such as the learning of concepts, rules, principles, facts and so on. More so, learning goals will help to decide the resources, people and the different strategies needed in the learning environment. People are also crucial in the learning environment. In fact, they are at the centre of this environment. Initially, the people involved in the learning environment are learners and educators. However, there are other people involved in this chain. These include parents, school administrators, technology specialists, and so on. In addition, the learning environment is enhanced with resources, which are identified as the third core component. These include human resources, financial resources, information and technology resources, and learning and instructional resources. While information and technology resources include all technology equipment, learning resources include all materials needed for learning. Teaching plans and similar documents are the instructional resources. Finally, strategies imply the intellectual efforts needed to use the different skills and resources to achieve the goals effectively and efficiently. These include learning strategies, instructional strategies and management strategies. The strategies enhance and facilitate learning.

These core components are interrelated and combined in a unified system in order to result in a dynamic learning system. A technology-enhanced learning environment makes use of technology to motivate its learners. The way learning materials are presented and discussed creates a strong motivation for learners. Technology enables learners by providing well-defined guidance, instant feedback and immediate satisfaction to both learners and educators. Technology provides the learning resources needed for specific learning tasks.

Literature Review

In line with the objectives of this paper, we review the existing empirical literature that assesses the extent to which online learning and teaching were adopted and improved across countries in the wake of the pandemic,

students' adaptation to the online learning environment, their ability to cope with online learning, class interactions and collaboration, and the challenges they encountered and opportunities gained from the online learning setting.

While several scholars have discussed the benefits of using online learning platforms (video-based learning, online group learning, one-to-one online learning and so on), their effectiveness, accessibility and limitations need to be accounted for (Lorenzetti 2013). Evidence shows that higher education has received more attention when it comes to online learning (Hachey *et al*. 2022). This is explained by the greater costs of higher education and the importance of a higher degree to secure a better-paid job (Dynarski and Scott-Clayton 2013). Online learning represents an effective tool to reduce the cost of higher education and facilitates access to a greater number of students (Bartley and Golek 2004; Bowen 2013). It is a learning environment that is distinct from face-to-face learning (Bazelais, Doleck and Lemay 2018).

Studies prior to the start of the Covid-19 pandemic have analysed the relationship between students' perceptions of online learning practices, the learning climate and social belonging across age and gender (Navarro and Shoemaker 2000; Rovai and Jordan 2004; Nguyen 2015; Koohang *et al*. 2016; Gómez-Rey, Barbera and Fernández-Navarro 2017; Cole, Lennon and Weber 2019). There is evidence that students are greatly satisfied with online learning and that their learning outcomes are as good as or even better than those of traditional learning (Navarro and Shoemaker 2000; Bernard *et al*. 2004). Students tend to benefit more from online and blended learning compared to the traditional learning in classrooms as these technologies contribute towards cognitive support and improve student interaction with educators or among students themselves.

Zhang and Wang (2006) show that interactive videos are crucial as they help students to better analyse the subject, which results in an enhanced understanding of the study materials. Software like 3D technology and multidimensional representations have made online learning the same as classroom learning or even better. Feeley and Parris (2012) show that online learning results in better learning outcomes and enhanced learning perceptions as well as increased motivation to learn. Students also have a greater sense of community in an online and blended learning environment compared to the traditional classroom (Rovai and Jordan 2004). These positive learning results include higher test scores (which implies improved learning), enhanced use of class materials, better learning perception, improved sense of community among students, lower rate of failures, and fewer dropouts from the educational institutions (Nguyen 2015). Gonzàles-Gómez, Jeong and Rodríguez (2016) also highlighted the benefits of online

learning in terms of making the learning environment a more social, flexible and personal platform, which in turn promotes student-centred learning and a social-constructivist approach to learning.

However, online learning does have its limitations and existing empirical works have noted that it cannot replace all the activities that normally take place in a face-to-face learning environment. Students also have reservations about the technological proficiency and adequate course designs of online education. In some studies, they noted that students who followed the course online performed worse on assessments than those in the same course in the traditional environment (Saghafi, Franz and Crowther 2014). In effect, both learning settings complement each other and therefore a blended learning approach is the preferred option (Northey *et al*. 2015).

Cole-Lewis, Ezeanochie and Turgiss (2019) argue that a successful online learning environment must address the social dimension to counter the absence of physical interactions and overcome the distance component. Active and interactive learning strategies are vital in creating opportunities for more connection and exchange (Doleck, Bazelais and Lemay 2017; Kaufmann and Vallade, 2020). Pokhrel and Chhetri (2021) identify some broad challenges encountered with e-learning, namely: accessibility, flexibility, affordability, learning pedagogy and lifelong learning and education policy. Similarly, Arslan (2021) and Hehir *et al*. (2021) argue that hybrid courses result in less interaction with the subject materials and a feeling of isolation, and these contribute towards low achievement. Low performance was also attributed to the fact that students had issues dealing with several concepts and with insufficient teaching compared to in-class learning. Reduced in-person interaction between learners and educators may cause major challenges in the long run. Students perceived that there were advantages and disadvantages to online learning (Ebner and Gegenfurtner 2019).

The transition to remote learning has also been studied in the wake of the Covid-19 pandemic. Studies like Simamora *et al*. (2020) investigated lecturers' perspectives on e-learning during the Covid-19 pandemic in higher education in Indonesia. Their results show that online learning applications are beneficial for some lecturers to deliver lecture materials without face-to-face interactions but there are major obstacles, like inadequate Internet access. Technological developments and appropriate infrastructure facilities are vital in supporting online learning and in making it effective. Similarly, Paudel (2020) examined the forceful shift in the mode of learning and teaching from face to face to online in Nepal's higher education sector, across a sample of 280 teachers and students from five universities. Their findings indicate that the benefits derived from online education were in terms of

greater connection with practitioners and the global community as well as to a huge and authentic resource of knowledge. However, major challenges were noted in terms of Internet connectivity, limited time-management skills and computer literacy.

Akuratiya and Meddage (2020) assessed students' perception of online learning during the Covid-19 pandemic across 130 students at the ATI in Dehiwala, Sri Lanka. Their results reveal that 62.5 per cent had little or no experience with online learning prior to Covid-19, and with the rapid shift to digital means with lockdown measures, around 55 per cent showed their preference for the blended learning of traditional and online learning. Students connected to the Internet mainly via smartphone (around 44 per cent). Many challenges to learning were reported, however, in terms of reduced interaction between lecturers and friends (64.1 per cent), social isolation (55.5 per cent) and technical problems (57 per cent). These challenges notwithstanding, there was a favourable perception of online learning in terms of easy access to online materials and ability to learn at their own pace. Around 83 per cent of students stated that they would include online learning in their course in the future.

Likewise, Elshami *et al.* (2021) analysed the satisfaction of students and teachers with online learning during the Covid-19 pandemic among 358 students and 70 teachers in the United Arab Emirates. They observed that around 72 per cent of students and 82 per cent of teachers had no prior experience with the online learning and teaching environment. In addition, 69 per cent of students were less satisfied with online learning and 42 per cent would not recommend this mode. However, 63 per cent of teachers were more satisfied with online than in-person learning.

Lemay, Bazelais et Doleck (2021) analysed student perceptions of the transition to online learning in North America, reporting that two-thirds had difficulty concentrating in online learning, which led to a high level of stress and anxiety. Students preferred to get back to in-class instruction and wanted institutions to reopen after the different waves of Covid-19. Their results show the high emotional and psychological toll of fully remote learning during the pandemic when social connection was lacking after so many months of enforced social distancing and isolation. The social and affective dimension of online learning (Calderón-Garrido, León-Gómez and Gil-Fernández 2021) thus becomes important for students and educators.

Similarly, Li *et al.* (2021) assessed the perceptions of students on online learning during Covid-19, based on a large nationally representative sample across ninety medical schools in China. Their results show that around 62 per cent of students were either satisfied or extremely satisfied with the

online learning programmes during the pandemic. However, they also encountered a number of issues, the most common of which were network congestion (77 per cent), limited interaction between learners and educators (45 per cent), lack of timely feedback (10 per cent), and poorly prepared materials by instructors (6 per cent).

In line with the existing literature, this paper uses Mauritius as a case study to study the transition to online learning as a result of the Covid-19 pandemic. Compared to the extant work, this paper builds on the theoretical framework of Wang and Kinuthia (2004) to assess different components of the online learning environment via learning goals, motivation of learners, digital means used to enrich resources, and how to implement strategies for an effective technological approach to ensure adequate online learning. Our study involved a large sample of students across various universities and business schools in Mauritius. Mauritius is an important case study because, as a resource-poor country, human capital is its only resource where economic progress and development depends entirely on an educated labour force. Covid-19 highly impacted on the education system of the country, with lost school days and difficulties for certain segments of the population to connect to the digital environment. Hence, Mauritius represents a pertinent case study to assess the adoption and coping ability of students in an online learning environment.

Data and Methodology

Guided by the conceptual framework of Kauffman (2015), our methodology rests on a survey of 575 students in various areas of study enrolled across five different universities and business schools. First, the quantitative approach helped us to investigate university students' perception of online learning in the midst of the Covid-19 pandemic. Second, the survey questionnaire made it appropriate to model the broad range of factors that affect the performance and satisfaction of learners within the online learning environment. Lastly, the paper evaluates the opportunities as well as the challenges of online learning.

Data and sampling strategy

In 2019, a total of 48,568 students were enrolled in higher education in Mauritius, with 41,451 (85 per cent) studying locally and 7,117 overseas (Higher Education Commission 2020). There were fifty-four higher education institutions in December 2020, including forty-four registered private higher education institutions and ten publicly funded higher

education institutions (Higher Education Commission 2020). The study focuses on five main local institutions, whose students totalled around 30,467. This represents 75 per cent of the total number of students across higher education institutions in Mauritius.

The random sampling technique was adopted to ensure that each student had an equal chance of being selected. As such the comprehensive survey undertaken via an online questionnaire was circulated to male and female students at different schools or faculties of five universities and business schools. All the students could access the link to the online platform and each student of these selected universities carried an equal opportunity of being chosen as a part of the sampling process.

We used two important statistics—the survey's margin of error, and confidence level—to ensure that the sample represented the population. An 'acceptable' margin of error is between 4 per cent and 8 per cent at the 95 per cent confidence level (Hazra 2017). We calculated the margin of error at different sample sizes to determine the actual sample size. With a margin of error of 4 per cent and a 95 per cent confidence interval, the sample size was 589 respondents. We managed to get 575 responses with a margin of error of 4.1 per cent. This means that the statistics are within 4.1 percentage points of the real population value 95 per cent of the time.

Survey questionnaire

Prior to the finalisation of the survey instrument, we undertook a pilot of the questionnaire. After taking on board comments received, a revised questionnaire was uploaded online and the web link was shared with students at the different universities and business schools. The questionnaire includes information pertaining to sociodemographic profile as well as information linked to the different dimensions postulated in the theoretical framework. The various elements covered in the questionnaire relate to the impact of Covid-19 on the student's learning environment, their ability to adapt to the online learning environment, their views on online instructions and, lastly, on class interactions within the online teaching environment. Confidentiality of information was strictly maintained. There was no access to students' responses and the information gathered was not used to identify respondents' records. Responses were accepted at face value and there was no data extrapolation. We also took note that perceptions are subjective and that different students will have different, but equally valid views.

Data Analysis and Findings

This section depicts an analysis of the data collected from the survey of 575 students doing part-time and full-time undergraduate and postgraduate degrees in different universities and business schools.

Learner characteristics

Table 1 shows the sociodemographic profile of learners surveyed across the five main universities in Mauritius. In the sample, there is a higher percentage of young women (67 per cent) relative to young men (33 per cent). This is in line with the gender distribution of the overall population of students enrolled in higher education in Mauritius—58 per cent female and 42 per cent male (Statistics Mauritius 2020). The growth of women's participation in higher education has been stronger than that of men over the recent years with young women outnumbering men and this trend is accelerating year upon year in many other countries.

Table 1: Descriptive Statistics—Sociodemographics of Learners Surveyed

VARIABLES	%	VARIABLES	%
Gender		**Age categories**	
Female	66.84%	<20	8.29%
Male	33.16%	20–24	81.69%
Programme enrolled		25–29	6.39%
Postgraduate	5.87%	30–34	1.55%
Undergraduate	94.13%	35–39	0.86%
Full time/ Part time		40–44	0.69%
Full time	89.46%	45–49	0.17%
Part time	10.54%	55–59	0.35%
Area of study		**University attended**	
Agricultural food and science	4.49%	Middlesex University	1.90%
Agricultural production and systems	4.32%	Open University	0.35%
Applied sustainability and enterprise development	0.17%	Rushmore Business School	0.17%
Biosciences and ocean sciences	0.17%	Université des Mascareignes	24.00%
Civil engineering	2.25%	University of Mauritius	73.56%

Digital technologies	2.07%	**Household income categories**	
Economics and statistics	12.95%	Less than MUR 10 000	14.68%
Electrical and electronic engineering	3.11%	MUR 10,001–14,999	17.96%
Finance and accounting	42.14%	MUR 15 000–MUR 29 999	32.47%
Health sciences	0.17%	MUR 30 000–49,999	25.22%
Information and communication technologies	5.18%	MUR 50 000–100,000	8.46%
Law	0.17%	More than MUR 100,000	1.21%
Management	14.68%	**Performance (in terms of CPA)**	
Mathematics	0.52%	Less than 40	2.49%
Mechanical and production engineering	0.86%	40–49	3.39%
Social studies	1.21%	50–59	17.19%
Software and information systems	5.53%	60–69	41.18%
		70–80	34.16%
		More than 80	1.58%

Source: Authors' computation from survey, 2020

Most students (around 89 per cent) were enrolled in full-time programmes in various areas of specialisation, from agriculture to information and communication technologies, electrical and electronic engineering, economics and statistics, management and finance and accounting. A high percentage of respondents were enrolled at the University of Mauritius (74 per cent), which is the main publicly funded university. It usually registers the highest number of students compared to other local institutions and is an averagely selective institution with an admission rate of around 70 per cent to 80 per cent for locals. From the profiling exercise, a student in higher education in Mauritius is likely to be aged between twenty and twenty-four years, enrolled in a full-time undergraduate degree mainly in soft sciences like management, finance, accounting or business at the University of Mauritius. Respondents were also asked about their average monthly household income and the data reveals that 32.5 per cent are in the average household income category of MUR 15,000–29,999, followed by 25.2 per cent with a household income ranging between MUR 30,000 and 49,999.

Impact of Covid-19 on students in higher education institutions

Although higher education institutions have been quite fast in replacing face-to-face lectures with online learning, learning and examinations have been highly impacted by the pandemic and lockdown. Perhaps most importantly, the crisis raises questions about the value offered by a university or business school education, which includes networking and social opportunities as well as educational content.

Online platforms such as Google Meet, Zoom, Microsoft Teams, Skype, Google Classroom, Moodle and YouTube videos were the main ones used across the local universities surveyed. Online learning tools ranged from educational content (which students could probe at their own discretion), to formalised learning programmes (conducted at their own pace), to real-time lessons (led by teachers using virtual meeting platforms). There has been a pedagogical shift from the traditional method to the modern approach of teaching-learning, from classroom to Zoom, from personal to virtual and from seminars to webinars (Mishra, Gupta and Shree 2020). Lederman (2020) stated that due to the pandemic instructors and learners found themselves in a situation where they were compelled to adopt the digital academic experience in the teaching-learning process.

The survey found that there were various tools used to ensure that learning took place during the lockdown and during the post-lockdown period. In essence, remote learning became a lifeline for education, and the opportunities that digital technologies offer go well beyond a stopgap solution (Schleicher 2020). In the sample, around 52 per cent of learners spent between two and four hours daily on online lectures and tutorials, while 34 per cent spent less than two hours and 14 per cent spent more than more hours on online learning. Across gender, a higher percentage of male students (15 per cent) spent more than four hours on their online course daily compared to their female counterparts (13 per cent). Around 35 per cent of young women spent less than two hours on their studies online relative to 32 per cent of young men.

The most immediate impact of Covid-19 was the temporary suspension of classroom activity in higher education institutions, which left students—particularly undergraduates—in a completely new situation, without a clear idea of how long the impact would last and feeling its immediate effect on their daily life and on the continuation of their

studies. They had to connect with their instructors online to ensure that the materials were covered and completed. In terms of the frequency of connecting with instructors online during the lockdown, the survey shows that 27.6 per cent of learners met their teachers virtually once a week and 27.8 per cent did so a few times a week. Again, a gender differential was noted, with male learners being more frequent in their interaction with their teachers—32.3 per cent met virtually a few times a week (compared to 25.6 per cent for female learners), 8.9 per cent once a day (relative to 7.5 per cent of female students) and 6.8 per cent several times a day (compared to 4.7 per cent of female learners). Most female students met their instructors virtually once a week (30.2 per cent).

Further, students were asked about the extent to which Covid-19 had disrupted their studies. Table 2 presents the findings, where it is noted that around 43 per cent of learners found that the pandemic was somewhat disruptive to their studies and around 28 per cent stated that it was very disruptive. In contrast to Mugo, Odera and Wachira (2020), who show a disproportionate effect of the Covid-19 pandemic on women in higher education, there is not much difference across gender in our sample, while differences across areas of study are noted. Students from the fields of mechanical and production engineering, civil engineering as well as mathematics found the impact of the pandemic very disruptive to their studies. An in-depth analysis of the data shows that students enrolled in STEM degrees were more likely impacted by the pandemic compared to those in non-STEM degrees. This may be explained by the nature of the modules, being highly technical and mathematical.

It can also be observed that students with a lower average household income (less than MUR 30,000) experienced very disruptive effects of the pandemic on their studies. This could be attributed to a number of factors, namely lack of resources, IT equipment, and irregular or no Internet connection, among others. The survey participants were asked whether they used their own laptop or desktop or that of their parents/siblings for online learning. We note that 20 per cent of those in the lower income bracket of less than MUR 30,000 used the IT equipment of their parents and siblings. In terms of Internet connection, most respondents used their own Wi-Fi connection and only a small percentage used mobile data or that of their neighbours.

Table 2: The Impact of Covid-19 on University Students' Learning

How Disruptive Has The Covid-19 Outbreak Been To Studies Of University Students?	NEUTRAL	NOT DISRUPTIVE AT ALL	NOT SO DISRUPTIVE	SOMEWHAT DISRUPTIVE	VERY DISRUPTIVE
Gender					
Female	9.82%	1.29%	15.50%	45.48%	27.91%
Male	13.02%	6.77%	15.10%	38.02%	27.08%
Total	10.88%	3.11%	15.37%	43.01%	27.63%
Areas of study					
Agricultural food and science	11.54%	3.85%	3.85%	57.69%	23.08%
Agricultural production and systems	0.00%	8.00%	16.00%	52.00%	24.00%
Civil engineering	15.38%	15.38%	7.69%	23.08%	38.46%
Digital technologies	16.67%	0.00%	0.00%	58.33%	25.00%
Economics and statistics	6.67%	2.67%	16.00%	46.67%	28.00%
Electrical and electronic engineering	11.11%	0.00%	16.67%	50.00%	22.22%
Finance and accounting	10.66%	2.05%	18.03%	40.98%	28.28%
Information and communication technologies	16.67%	3.33%	13.33%	43.33%	23.33%
Management	9.41%	1.18%	15.29%	44.71%	29.41%
Mathematics	0.00%	0.00%	33.33%	33.33%	33.33%
Mechanical and production engineering	40.00%	0.00%	0.00%	20.00%	40.00%
Social studies	14.29%	0.00%	14.29%	57.14%	14.29%
Software and information systems	21.88%	9.38%	12.50%	28.13%	28.13%
Total	10.88%	3.11%	15.37%	43.01%	27.63%

Household income categories					
Less than MUR 10,000	16.47%	1.18%	15.29%	37.65%	29.41%
MUR 10,001–14,999	0.00%	28.57%	14.29%	28.57%	28.57%
MUR 15 000–29 999	15.38%	3.85%	11.54%	37.50%	31.73%
MUR 30 000–49,999	10.11%	2.66%	16.49%	43.09%	27.66%
MUR 50 000 - 100,000	7.64%	2.08%	16.67%	47.22%	26.39%
More than MUR 100,000	6.12%	6.12%	16.33%	51.02%	20.41%
Total	10.88%	3.11%	15.37%	43.01%	27.63%

Source: Authors' computation from survey, 2020

The main concerns of students during the lockdown, when universities and business schools had to move to an online environment, were the loss of contact with their instructors, followed by difficulties in keeping up with coursework and assignments, being physically isolated from classmates, and inability to keep up with extra-curricular activities. Figure 2 shows these concerns by gender. While female students were more worried about keeping up with assignments and coursework, male learners were more apprehensive of the loss of contact with professors.

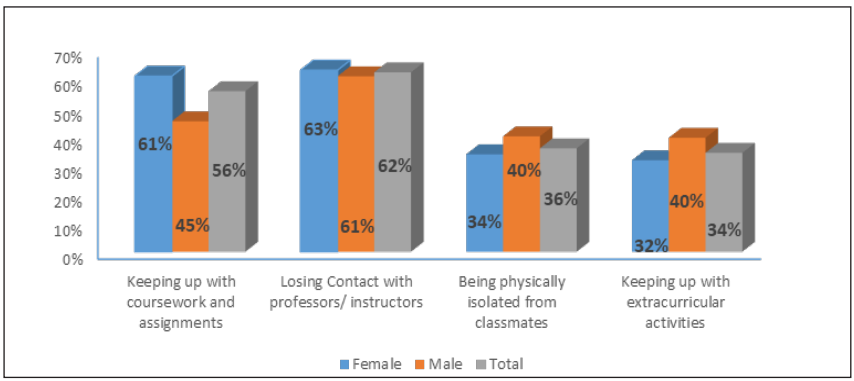

Figure 2: Learners' concerns about university shifts to an online learning environment during Covid-19, by gender

Source: Authors' computation from survey, 2020

Table 3: Online Versus Classroom Learning

Do You Prefer Online Learning More Than Face-To-Face Lectures?	NEUTRAL	NOT AT ALL	NOT SO MUCH	QUITE	VERY MUCH
Gender					
Female	12.40%	21.71%	37.47%	18.09%	10.34%
Male	20.31%	19.79%	25.52%	19.27%	15.10%
Total	15.03%	21.07%	33.51%	18.48%	11.92%
Programme of study					
Postgraduate	14.71%	11.76%	11.76%	11.76%	50.00%
Undergraduate	15.05%	21.65%	34.86%	18.90%	9.54%
Total	15.03%	21.07%	33.51%	18.48%	11.92%
Area of study					
Agricultural food and science	23.08%	15.38%	42.31%	15.38%	3.85%
Agricultural production and systems	24.00%	0.00%	36.00%	28.00%	12.00%
Civil engineering	15.38%	23.08%	46.15%	15.38%	0.00%
Digital technologies	25.00%	25.00%	33.33%	16.67%	0.00%
Economics and statistics	6.67%	30.67%	30.67%	17.33%	14.67%
Electrical and electronic engineering	16.67%	11.11%	33.33%	5.56%	33.33%
Finance and accounting	13.11%	23.36%	39.75%	14.75%	9.02%
Information and communication technologies	30.00%	16.67%	23.33%	13.33%	16.67%
Management	16.47%	20.00%	27.06%	21.18%	15.29%
Mathematics	0.00%	33.33%	33.33%	33.33%	0.00%
Social studies	0.00%	14.29%	57.14%	14.29%	14.29%
Software and information systems	18.75%	15.63%	9.38%	37.50%	18.75%

To What Extent Have You Been Able To Cope With Online Learning?	NEUTRAL	NOT AT ALL	NOT SO MUCH	QUITE	VERY MUCH
Gender					
Female	21.96%	2.58%	25.84%	37.73%	11.89%
Male	20.31%	3.13%	23.44%	34.38%	18.75%
Total	21.42%	2.76%	25.04%	36.61%	14.16%
Programme of study					
Postgraduate	2.94%	0.00%	20.59%	38.24%	38.24%
Undergraduate	22.57%	2.94%	25.32%	36.51%	12.66%
Total	21.42%	2.76%	25.04%	36.61%	14.16%
Area of study					
Agricultural food and science	30.77%	3.85%	11.54%	50.00%	3.85%
Agricultural production and systems	32.00%	0.00%	8.00%	32.00%	28.00%
Civil engineering	15.38%	0.00%	23.08%	30.77%	30.77%
Digital technologies	25.00%	0.00%	58.33%	8.33%	8.33%
Economics and statistics	20.00%	2.67%	29.33%	29.33%	18.67%
Electrical and electronic engineering	16.67%	0.00%	11.11%	50.00%	22.22%
Finance and accounting	23.77%	3.28%	26.64%	37.70%	8.61%
Information and communication technologies	23.33%	3.33%	23.33%	36.67%	13.33%
Management	16.47%	2.35%	23.53%	38.82%	18.82%
Mathematics	0.00%	33.33%	33.33%	33.33%	0.00%
Mechanical and production engineering	0.00%	0.00%	20.00%	60.00%	20.00%
Social studies	14.29%	0.00%	42.86%	28.57%	14.29%
Software and information systems	15.63%	3.13%	25.00%	37.50%	18.75%

Source: Authors' computation from survey, 2020

Adapting to online learning and meeting learning objectives

Digital technology proposes new answers to the questions of what people learn, how they learn, and where and when they learn. It has enabled teachers and students to access specialised materials well beyond textbooks, in multiple formats, and in ways that can bridge time and space. Hence, students were asked about their preference for face-to-face or online teaching. The data shows that 33.5 per cent of students did not like online learning much, with 37 per cent of female students asserting that they did not like it so much compared to 25.5 per cent of male learners. Only 18 per cent of students in the survey showed some preference for online learning, while 12 per cent had a high preference for the online mode of delivery compared with face-to-face sessions. Across degrees, postgraduate students preferred online learning, whereas undergraduate students tended to choose face-to-face instruction.

By study discipline, students of electrical and electronic engineering, ICT and software and information systems preferred online learning. Those students who preferred face-to-face sessions and did not like the online mode of delivery at all, were mainly from mathematics and the soft sciences, with around 33 per cent of students from mathematics, followed by 31 per cent from economics and statistics, 23 per cent from finance and accounting and 20 per cent from management.

The survey also probed students' ability to cope with online learning during and after the Covid-19 lockdown. Overall, around 37 per cent were quite able to manage, 27.8 per cent were not able to cope, while 14 per cent stated that they could adapt easily with the online delivery mode of lectures and tutorials. In terms of gender, male students were able to cope better with the online learning environment than female learners. An important difference is noted between undergraduate and postgraduate students, where the latter seem to have coped successfully (38.2 per cent) compared to undergraduates (12.7 per cent). By area of study, a higher percentage of learners from civil engineering (31 per cent), agricultural production and systems (28 per cent), electrical and electronic engineering (22 per cent) and mechanical and production engineering (20 per cent) adapted to the online learning environment. Students in STEM programmes are in a better position to adapt and cope with the new technologies compared to those in non-STEM degrees.

Students were also asked whether or not the learning objectives of their modules/ courses had been met by their online lectures. Table 4 indicates that postgraduate students and male learners felt that the learning objectives were met though the online teaching environment. In contrast, most female and undergraduate students stated that the learning objectives were only partially met.

Table 4: Achieving Learning Objectives via Online Lectures

	NEUTRAL	NOT AT ALL	NOT SO MUCH	QUITE	VERY MUCH
Gender					
Female	29.46%	3.88%	24.03%	32.56%	10.08%
Male	27.60%	3.65%	19.79%	33.85%	15.10%
Total	28.84%	3.80%	22.63%	32.99%	11.74%
Programme of Study					
Postgraduate	29.41%	0.00%	8.82%	20.59%	41.18%
Undergraduate	28.81%	4.04%	23.49%	33.76%	9.91%
Total	28.84%	3.80%	22.63%	32.99%	11.74%
Area of study					
Agricultural food and science	38.46%	3.85%	11.54%	38.46%	7.69%
Agricultural production and systems	32.00%	0.00%	8.00%	48.00%	12.00%
Civil engineering	23.08%	7.69%	7.69%	53.85%	7.69%
Digital technologies	50.00%	0.00%	33.33%	8.33%	8.33%
Economics and statistics	24.00%	5.33%	32.00%	26.67%	12.00%
Electrical and electronic engineering	22.22%	0.00%	11.11%	44.44%	22.22%
Finance and accounting	28.28%	3.69%	27.05%	31.56%	9.43%
Information and communication technologies	40.00%	3.33%	10.00%	26.67%	20.00%
Management	30.59%	4.71%	18.82%	36.47%	9.41%
Mathematics	0.00%	33.33%	33.33%	33.33%	0.00%
Mechanical and production engineering	40.00%	0.00%	20.00%	40.00%	0.00%
Social studies	14.29%	0.00%	28.57%	28.57%	28.57%
Software and information systems	25.00%	3.13%	15.63%	31.25%	25.00%
Total	28.84%	3.80%	22.63%	32.99%	11.74%

Source: Authors' computation from survey, 2020

Information was also gathered on the clarity of the online courses, assignments and the instructions provided on the use of technology adopted during the course. The majority of students surveyed postulated that the online courses were appropriately organised and proper guidelines were provided on assignment and digital tools.

Class interaction and collaboration in the online learning environment

There is increasing evidence that classroom techniques designed to get students to participate in the learning process produce better educational outcomes at virtually all levels (Reuell 2019). Students learn better when they are actively engaged in the learning process, rather than just passively listening to a lecture. The survey analyses the online class interactions among students and between the instructor and the learners. The data shows that 37 per cent of students felt that student-to-student interaction in an online learning environment was important, 24 per cent stated that it was very important while for 27 per cent interaction among students was somewhat important. This interaction was extremely important for undergraduates (25 per cent) compared to postgraduates (12 per cent). This can be explained by the fact that undergraduate learners spend relatively more time on campus and this contact plays an important role in their learning environment. It is very important for learners to comfortably interact with each other, ask questions and contribute to group work. When students and teachers are physically distant, which is the case in online learning, it becomes more critical to create a social connection (Lee *et al.* 2020). Students were also asked whether they found that the instructor was respectful, understanding and supportive during this challenging period of the lockdown. The majority of learners surveyed were of the opinion that their instructor(s) were very accommodating and helpful.

Challenges and opportunities of online learning

The Covid-19 pandemic has raised significant challenges for the higher education community worldwide. Table 5 shows the challenges encountered by students in adapting to the online teaching-learning process. In the main these were lack of concentration in an online learning environment, noise and disturbances at home which prevented them from concentrating, followed by the fact that they found it difficult to ask questions during online lectures or tutorials. Song *et al.* (2004) showed that lack of communication and technical problems were most challenging for online learners. Our results show that the home environment also plays an important role in the ability of the learner to concentrate and benefit fully from online learning.

Table 5: Challenges of Online Learning

CHALLENGES	AGREE	DIS-AGREE	NO OPIN-ION	STRONG-LY AGREE	STRONG-LY DIS-AGREE
I find online learning time-consuming	20.21%	39.38%	20.21%	6.56%	13.64%
Computers are too compli-cated for me	4.84%	41.11%	9.33%	1.21%	43.52%
I get Internet problem at home and thus cannot always follow online classes	29.19%	33.16%	13.64%	6.56%	17.44%
Internet connection is costly and thus cannot always connect online for studies	16.06%	40.24%	23.66%	4.49%	15.54%
At home there is lots of noise/disturbance and I cannot concentrate	31.95%	24.87%	12.09%	20.38%	10.71%
I should share my laptop/ desktop with my siblings who are also studying online	24.35%	28.32%	12.26%	13.82%	21.24%
I feel it difficult to ask questions to my lecturer on an online platform	30.40%	21.24%	18.31%	19.00%	11.05%
I can concentrate more in a classroom environment than online	25.73%	14.51%	15.89%	35.75%	8.12%

Source: Authors' computation from survey, 2020

Next, the survey probes the opportunities from online learning as seen from the students' perspective. Table 6 shows that around 57 per cent of students found online learning interesting while around 55 per cent stated that the assignments presented to them during the course were clearly set out. However, interaction among students and between the instructor and the learner remains a hurdle in the online delivery mode across undergraduate and postgraduate degrees.

Table 6: Opportunities of Online Learning

OPPORTUNITIES	AGREE	DIS-AGREE	NO OPIN-ION	STRONG-LY AGREE	STRONG-LY DIS-AGREE
I find online learning interesting	43.01%	15.72%	21.24%	13.82%	6.22%
The assignments presented to me during the course were clear	42.66%	19.69%	20.21%	12.26%	5.18%
Interacting with my classmates online allows me to build a strong relationship with them	17.62%	25.73%	26.25%	8.81%	21.59%
E-learning allows a more effective interaction between the student and teacher than face-to-face classes	15.20%	31.78%	22.28%	8.46%	22.28%
E-learning gives the lecturer the chance to guide, discuss and answer students' questions more than the traditional teaching	21.76%	27.98%	21.76%	8.29%	20.21%
All the skills I have learned via e-learning are useful and effective	37.82%	10.02%	31.26%	13.82%	7.08%

Source: Authors' computation, Survey 2020

Conclusion and Policy Implications

The paper adopts the technology-enhanced learning environment model as per Wang and Kinuthia (2004) to assess perceptions of students on online learning in Mauritius and their ability to adapt to this new digital environment. Based on our findings, it can be noted that the pandemic disrupted undergraduate and postgraduate studies across five universities and business schools in Mauritius. Around 43 per cent of learners in the survey found that the pandemic was somewhat of a disruption to their studies and around 28 per cent stated that it was very disruptive. One implication of the results can be found at the theoretical level, where the technology-enhanced learning environment framework can be extended to incorporate external factors, such as shocks like the Covid-19 pandemic, and thus could be tested in the context of exclusive online teaching and learning.

Further, our study shows that though there is no gender divergence in terms of the impact of the pandemic on female and male learners, students from various fields were affected differently. Those in the fields of mechanical and production engineering, civil engineering as well as mathematics found the impact of the pandemic very disruptive to their studies. It can be postulated that students enrolled in STEM degrees were more impacted by the pandemic compared to those in non-STEM degrees. Hence, there is a need to adapt the online learning environment and tools to the specificities of different areas of study. Universities must consider moving non-STEM online in times of shocks like the Covid-19 pandemic, but for classes that require a hands-on lab component, institutions may wish to keep those courses in-person while ensuring physical distancing and other safety measures to prevent the spread of the virus.

In terms of their ability to adapt to online learning, our results reveal that around 37 per cent were quite able to manage, 27.8 per cent were not able to cope, while 14 per cent stated that they could adapt easily to the online delivery mode. Students encountered difficulties in coping with this new learning tool, as important elements—like social connection and exchange between learners and educators and among learners themselves, conflict resolution and creative problem-solving—were missing. Social connections remain a fundamental issue to be dealt with but this was especially so in the midst of the Covid-19 pandemic.

Social media can be used by higher education institutions to promote teaching and learning and motivate students to be active participants as well as establish connections in the university community. Social media platforms like Facebook, Instagram Information and Twitter, among others, offer the chance for students to develop self-confidence to participate within teams, build trust between peers and allow for in-depth discussions. Social media networking enables communication in real time and across different regions and countries.

The results further reveal that students enrolled in STEM programmes were in a better position to adapt and cope with the new online tools compared to non-STEM students. STEM students tend to have more extensive exposure to technology, time-management and self-directed learning so they adapt more readily to online learning than others. Thus, it may serve as a best-practice approach to train non-STEM and STEM students and faculties on using educational technology in online-learning courses before starting the semester or at the onset.

There is also evidence that the home environment may not be supportive of or conducive to online learning, as the main challenge reported by learners was the lack of concentration in an online learning environment with noise and disturbances at home. Parents should be clearly guided as to their needs of their children in terms of an adequate learning setting at home that will enable them to concentrate better on their studies. The findings further indicate that students from low-income groups have greater difficulty adapting to the new online-learning environment. Hence, increased access to hardware and Internet connectivity for all students is fundamental to access courses and resources remotely. Some students may need more help than others in accessing these digital devices, so these specificities should be considered by higher education institutions.

Lastly, it is high time for countries like Mauritius to rethink, revamp and redesign their education system to remain relevant to the present Covid-19 situation. Universities will need to reinvent their learning environments so that digitalisation expands and complements student–teacher relationships. Effective modes of instructions using the latest digital tools must be a priority for heads of institutions. Interaction remains the main element in making an effective online-learning environment. At the same time, offering varied modes of instructions can adapt to the different needs of students. For universities to adjust to these changing conditions, there should be greater investment in digital technology and online programmes. There is a need to pool resources and develop high-quality online courses together. Plans for adopting digital technology to uphold student learning outcomes via refined assessment and designed courses in a student-centred manner remain a must.

Notes

1. On 24 March 2020, the Prime Minister of Mauritius announced that the country would be under complete lockdown until 31 March 2020, with only essential services such as police, hospitals, dispensaries, private clinics, fire stations and banks being open. All other activities would be banned during the curfew period including supermarkets.
2. In December 2018, there were 10 publicly funded institutions operating in Mauritius (with the main ones being the University of Mauritius, University of Technology Mauritius, Mauritius Institute of Education, Mahatma Gandhi Institute, Université des Mascareignes and Open University of Mauritius). In addition, 55 private institutions (the main ones being Charles Telfair Institute, Middlesex University (branch) and Rushmore Business School) were registered locally, providing higher education in diverse fields, from certificate to doctorate

level, with the awarding bodies mostly based overseas. Out of the total number of tertiary students who study in Mauritius, over 23,000 were registered in the publicly funded universities and over 1,700 were in local private universities, with a predominantly female composition of around 60%.

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Covid-19 Social Relief Programmes and Distribution Mechanisms in East Africa: Lessons Learned

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Abstract

Covid-19 had social, physical and economic impacts that prompted governments to develop strategies to help their citizens cope with the mandatory lockdowns and curfews. East African countries faced several uncertainties and challenges in assisting their citizens, including a lack of funds to implement large-scale relief programmes, effective identification of eligible beneficiaries and viable distribution channels. Some African countries launched cash transfer and social assistance programmes. However, the size, efficiency and proportion of the population covered varied, leading to increased fraud, corruption and embezzlement. Patronage, political exploitation and partisanship were also prevalent. This article aims to assess the success of the East African Covid-19 cash and social assistance programmes and the mechanisms used and to draw lessons by comparing them with effective programmes outside Africa, in order to better inform the efficient design of future similar programmes. Using a data triangulation research methodology, the article finds that the Covid-19 relief programmes in many East African countries failed due to a lack of up-to-date multidimensional data on people's living standards, income and poverty levels. If East African countries are to implement effective social assistance programmes, they need to develop comprehensive and multi-faceted (resident) data collection systems to guide such programmes.

Keywords: Covid-19; relief programmes; effectiveness; East Africa

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Résumé

La Covid-19 a eu des répercussions sociales, physiques et économiques qui ont incité les gouvernements à élaborer des stratégies pour aider leurs citoyens à faire face aux fermetures obligatoires et aux couvre-feux. Les pays d'Afrique de l'Est ont dû faire face à plusieurs incertitudes et défis pour aider leurs citoyens, notamment le manque de fonds pour mettre en œuvre des programmes d'aide à grande échelle, l'identification efficace des bénéficiaires éligibles et des canaux de distribution viables. Certains pays africains ont lancé des programmes de transferts monétaires et d'assistance sociale. Toutefois, la taille, l'efficacité et la proportion de la population couverte varient, ce qui entraîne une augmentation de la fraude, de la corruption et des détournements de fonds. Le favoritisme, l'exploitation politique et l'esprit de parti ont également prévalu. Cet article vise à évaluer le succès des programmes d'aide financière et sociale de la Covid-19 en Afrique de l'Est et les mécanismes utilisés, et à en tirer des leçons en les comparant à des programmes efficaces menés en dehors de l'Afrique afin de mieux informer la conception efficace de futurs programmes similaires. En utilisant une méthodologie de recherche basée sur la triangulation des données, l'article démontre que les programmes d'aide Covid-19 de nombreux pays d'Afrique de l'Est ont échoué en raison du manque de données multidimensionnelles actualisées sur le niveau de vie, les revenus et les niveaux de pauvreté des populations. Si les pays d'Afrique de l'Est veulent mettre en œuvre des programmes d'aide sociale efficaces, ils doivent développer des systèmes de collecte de données (résidentes) complets et multidimensionnels pour guider ces programmes.

Mots-clés : Covid-19 ; programmes de secours ; efficacité ; Afrique de l'Est

Introduction

On 13 March 2020, East Africa reported its first Covid-19 positive case, an infectious disease caused by a newly discovered coronavirus that has ravaged the world and killed many people. The Covid-19 pandemic has presented several challenges to governments worldwide, including in East Africa. It has disproportionately impacted vulnerable and disadvantaged people and communities, who faced poor living conditions frequently exacerbated by unstable security and conflict environments. Most East African countries embarked on substantial initiatives to assist their citizens in maintaining their health and livelihoods while avoiding economic collapse.

According to the World Bank's most current poverty and shared prosperity report, the pandemic pushed 100 million people into severe poverty in 2020 alone, raising global poverty to its highest level since 1998 (World Bank 2020a). The impact of Covid-19 is visible in lower- and middle-

income countries, which were already in recession by late 2019 (UNCTAD 2020) and this has had particularly dire consequences for impoverished groups, such as sex workers, many of whom rely on regular income from the informal economic sector to survive (Kimani *et al*. 2020). The Covid-19 pandemic was predicted to impact on Africa's economy substantially. It mostly affected casual and low-wage earners, such as domestic workers and leisure and hospitality workers (Devereux 2020).

The low per-capita income in East Africa, along with considerable economic inequality and poverty levels, makes these nations vulnerable and less able to absorb shocks such as Covid-19 (CNBC 2020). According to the World Food Programme (2020), 15.4 million people in East Africa were suffering from acute hunger in 2020, rendering them more vulnerable to the consequences of the Covid-19 epidemic. Furthermore, in 2020 East Africa saw one of the wettest rainfall seasons in forty years, which resulted in devastating floods, the relocation of hundreds of thousands of people, and agricultural (70,000 hectares) and livestock (96 000 animal mortality) losses in the worst-affected areas. The abundant rains encouraged desert locust reproduction, which spread across East Africa and presented a serious threat to the key agricultural seasons. Desert locusts are considered the most damaging migratory pest species in the world due to their ability to breed fast, travel large distances and destroy crops (Cressman 2016).

East African countries were expected to assist their people who were affected by compulsory lockdowns and the impact of these on the local economy. Governments and international humanitarian groups stepped up to assist individuals throughout the epidemic era. Direct cash distributions, short- and medium-term loan forgiveness, payment postponement and tax refunds were common examples of such approaches. The necessity for quick action was cited as a factor that might encourage policy-makers and decision-makers to disregard oversight and accountability procedures. As a result, the approval and execution of emergency assistance packages risked becoming a breeding ground for mismanagement, fraud and corruption. The following section discusses the primary relief packages in each member country and the distribution mechanisms used. To keep the research as precise as possible, the disbursements and distribution programmes mentioned here are solely those directly paid to people.

Coverage and Efficiency of African Covid-19 Relief Programmes

According to Kazeem (2021), social and economic relief in Africa reached at least 117 million people during the peak of Covid-19, with South Africans receiving the most monetary relief, estimated at USD 29 billion. He further

maintained that that the struggle was not one of numbers but of distribution infrastructure and efficiency (Kazeem 2021).

Botswana's relief package, which included food networks, salary subsidies for enterprises and price freezes on essential items, had the greatest impact of the countries on the continent, reaching 51.1 per cent of its population, as shown in Table 1. In terms of population coverage and number of persons reached, all East African countries fell short. Table 2 shows that Egypt, Ethiopia and South Africa were the only African countries that reached more than 20 million people. On the other hand, Rwanda reached only 3 million individuals (23 % of its population).

It is obvious that East African countries' Covid-19 relief programmes were impractical. Aside from the coverage limitation, which was most likely due to a lack of funds to support large-scale programmes, the aid packages failed to reach the most vulnerable or needy. Many governments had difficulties targeting these groups; additional difficulties arose in screening the families and persons adversely impacted by the pandemic and lockdowns. In Uganda, for example, the government stated that it would check the mobile money transaction history data of people seeking assistance, to assess whether they were truly in need, as well as employ local elected officials on the ground and earlier social protection registers (Abet 2021). The Uganda Bureau of Statistics later declared that the data used to identify beneficiaries was not its own (Damali 2021), sparking a heated social and traditional media controversy. All East African countries experienced the challenge of determining the needy (Development Initiatives 2021).

Table 1: Population covered by relief packages on the African continent

Botswana	51.1%
Zimbabwe	50.0%
Eritrea	49.0%
Mali	45.0%
Mauritania	41.0%
Tunisia	41.0%
The Gambia	40.8%
Namibia	40.3%
South Africa	27%
Egypt	32.4%

Source: Quartz (2020) Data: Development Reimagined

Motivation and Research Problem

Motivation

A cross-sectional examination of East African countries' Covid-19 relief programmes revealed inadequacy, incorrect mapping and beneficiary selection. Inadequate data for identifying the neediest impeded the distribution of relief funds and resources. The motivation of the research is grounded on the above in the quest to understand what can be done to improve the efficiency of the rollout of government social welfare programmes, such as those implemented for Covid-19 relief by East African member states. This will not only enhance the efficiency of future welfare programmes but will also increase their return on investment.

Table 2: Number of people reached by relief packages by country in Africa

Ethiopia	33 million
Egypt	30 million
South Africa	22 million
Nigeria	19 million
Mali	9 million
Democratic Republic of Congo	9 million
Zimbabwe	8 million
Côte d'Ivoire	6 million
Tunisia	5 million
Rwanda	3 million

Source: Quartz (2020) Data: Development Reimagined

Statement of the Research Problem

This article aims to evaluate the performance of Covid-19 alleviation programmes established by East African member states and to make recommendations to increase the efficiency of similar initiatives in the future. This study will provide answers to unanswered issues concerning the effectiveness of government social assistance programmes. These are some of the questions:

- What were the main flaws in the East African member nations' Covid-19 social aid programmes?
- How can such social aid initiatives be made more efficient to target the most relevant beneficiaries?

Methods and Results

The research employs a data triangulation research methodology, in which data on Covid-19 social relief programmes implemented in Africa, particularly East Africa, was synthesised. The research also analysed country-specific programme assessment reports from various parties, including non-governmental organisations, the World Bank and other industry players. Finally, the research compares the mechanisms mentioned above with the most efficient social welfare programmes adopted by the United States during Covid-19. After that, data triangulation is utilised to derive lessons and policy recommendations.

The following section provides a synopsis of Covid-19 social relief programmes and disbursements in all East African member nations and their distribution mechanisms.

Uganda

Prime-Minister's Office Covid-19 Relief Funds (Nabbanja)

The Prime Minister's office began distributing Covid-19 relief money to vulnerable Ugandans on 18 July 2021, when the country was placed under lockdown in an effort to halt the virus's spread. Funds were immediately sent to beneficiaries using mobile money services, and the government planned to reach 501,107 families in the Kampala metropolitan districts, all cities and towns. Beneficiaries were individuals who earned a living on a daily basis but were now remaining at home owing to the lockdown. Each household was slated to get a net of UGX 100,000 (about USD 30). As a result, as shown in Table 3, twelve groups from the Kampala Metropolitan Area, cities and municipalities benefited from the cash transfers.

The mechanism was received with mixed reactions from the public and set in motion a debate hinged on the rationale for the coverage of the programme, the adequacy of the amount, the process of identifying beneficiaries and the appropriateness of the payment platforms.

Table 3: Groups Benefitting from the Prime Minister's Office Covid-19 Relief Funds, Uganda

NUMBER	CATEGORY
1	Bus / tax drivers, conductors
2	Baggage carriers, wheelbarrow pushers, touts, traffic guides and loaders in the taxi, bus parks and stages and other commercial centres, such as Kikuubo.
3	Barmen, DJs, barmaids and bouncers.
4	Bar, gym and restaurant workers.
5	Food vendors in buses, taxi parks and arcades.
6	Artists (musicians, comedians, etc.)
7	Boda-boda drivers, special hire drivers and Uber drivers.
8	Salons, massage parlour workers.
9	Teachers and support staff in private schools and teachers in government schools not on the government payroll.
10	Car washers
11	Slum dwellers / ghetto residents.
12	Street and food vendors, shoe shiners and cobblers.

Source: ISER, Initiative for Social and Economic Rights (2021)

Uganda Covid-19 food relief packages

Following Uganda's lockdown presidential directive as a result of the Covid-19 pandemic, a humanitarian food delivery effort was launched on 25 March 2020 (Shi 2020). Uganda's Coronavirus Response Team was at the forefront of establishing the following measures: food was to be delivered largely to the urban poor who were most impacted by the countrywide lockdown; as a matter of urgency, priority was given to urban groups in the central area (the capital, Kampala, and nearby Wakiso district); beneficiaries were small business operators who lived hand to mouth, the elderly, the unwell, and lactating mothers; rations included 6kg of rice (it was slated that, in addition, lactating mothers and the sick were to receive 2kg of powdered milk and 2kg of sugar). Other districts in Uganda were intended to be reached depending on the resources mobilised throughout the response campaign. Security forces were tasked with carrying out the household-based food distribution exercise in order to halt the spread of the illness. It was designed to be house-to-house, door-to-door, in order to reduce crowds and preserve social distancing (Nathan and Benon 2020).

Kenya

Kenya Covid-19 stimulus funds

On 23 May 2020, President Uhuru Kenyatta addressed the nation and launched the Kenya Covid-19 stimulus fund of KES 250 million to needy households. A cash transfer initiative, it aimed to reach over a million individuals who were to get KES 2,000, or USD 19, every month, using mobile money (M-Pesa). During the pandemic, the Kenyan national government contributed an extra KES 10 billion to this initiative to assist vulnerable populations, such as the elderly and orphans. Unlike other East African nations, Kenya distributed several departmental, regional and donor-funded Covid-19 relief packages to specific categories of individuals or specific member recipients, but they are not mentioned in this study.

However, Human Rights Watch (HRW) (Amon and Wurth 2020) noted that although persons who registered and were enrolled in the programme were scheduled to get thirty-five weekly transfers of KES 1,000 (about USD 9) each, most received significantly fewer, just two or four payments in total. The report also discovered significant gaps in transparency in the criteria used to choose the people to receive the payments. According to a community mobiliser who went door to door in one informal settlement to identify specific disadvantaged persons as possible beneficiaries, very few of them ever received any money. On the other hand, relatives, friends and allies of government leaders apparently found it simpler to enlist.

HRW conducted surveys in Nairobi's informal settlements, which contained an estimated 600,000 families. They found that, despite the fact that the initiative was intended to be statewide, the government stated that in the initial phase cash transfers helped just 29,000 families in Nairobi settlements, or less than 5 per cent. In general, no explanation was provided as to why thousands of families who met the specified criteria were excluded.

Rwanda

Rwanda Covid-19 relief food distribution programme

On 28 March 2020, the Rwandan government began distributing the first batch of relief materials to about 20,000 families in Kigali as part of measures to support Rwandans during the Covid-19 lockdown. The distribution began barely fourteen days after the country's first incidence of Covid-19. Local leaders oversaw the distribution at cell and village levels; vulnerable homes who were living hand to mouth received rice, spaghetti, maize flour, beans, soap, cooking oil, porridge flour and other commodities to help

them. The recipients were chosen by local committees at the sector, cell and village local government levels and the distribution was well organised. 'We will deliver the things door-to-door while observing the procedures put in place to limit the spread of the coronavirus', Prof. Anastase Shyaka, Minister of Local Government, was quoted as saying.

Unlike in many other East African nations, Rwanda's Covid-19 relief food distribution programme got little to no criticism, indicating that it was somewhat more efficient than most other member states' programmes.

Tanzania

Health professionals in the nation were worried by President John Magufuli's denial of the pandemic and his claim that prayer might eradicate the coronavirus. However, Magafuli died in March 2020. Samia Suluhu Hassan, his deputy, took over as president and subsequently modified Tanzania's approach to Covid-19.

By November 2021, Tanzania had no recorded statewide Covid-19 relief programme. Nonetheless, the country had implemented macro and micro economic steps through its central bank to offset the pandemic's negative impact.

Burundi

Despite being one of the poorest countries in the world, according to the World Food Programme (WFP) (Slater *et al*. 2021), with over 70 per cent of the population living in poverty, Burundi has not recorded or documented any statewide Covid-19 assistance efforts. Food insecurity is at an all-time high, with over 52 per cent of children under the age of five suffering from malnutrition (Nchanji 2021). However, the World Food Programme (WFP) has been active in giving relief to displaced families, women and children and refugees.

South Sudan

South Sudan relies significantly on imports of essential food items from neighbouring nations, and its economy's vulnerability to external shocks meant that Covid-19 was more than a public health emergency. South Sudan, like Burundi and Tanzania, lacked nationally traceable and reported Covid-19 assistance efforts. On the other hand, the country received substantial financial and physical assistance from international organisations such as the United Nations Food and Agricultural Organization (FAO) (Mukhtar 2021), which donated seed crop and vegetable seeds, agricultural equipment and solar irrigation water pumps to help promote food production (Elhadi *et al*. 2020).

Analysis of Efficient Covid-19 Social Relief Programmes

The United States has been lauded not only for being one of the first countries to announce that it would be implementing Covid-19 social assistance benefits, known as stimulus checks, but also for having the most efficient programme. Without a doubt, East African nations and Africa as a whole can learn a lot from the case of the United States.

From April 2020 to December 2021, the United States federal government issued direct Covid-19 stimulus payments totalling USD 931 billion to over 165 million eligible Americans. Each qualified individual received three payments: USD 1,200 in April 2020, USD 600 in December 2020 / January 2021 and USD 1,400 in March 2021. Beneficiaries needed to satisfy the following conditions to be eligible:

1. Citizens earning less than USD 75,000 a year.
2. Married couples with a combined income of less than USD 150,000
3. Head of a household with an annual adjusted income (AGI) of less than USD 112,500.
4. Above these income limits, the payment amount decreased by 5 per cent for every additional USD 100 of income up to USD 99,000 for a single adult, USD 136,500 for a head of household and USD 198,000 for a married couple.
5. Citizens with zero income.
6. No age limits. However a beneficiary could not be someone else's dependent. Children had to be under 17 to get the additional payment.
7. At least one tax filer had to have a valid Social Security number (SSN). If married jointly and one spouse had an SSN and the other an Individual Taxpayer Identification Number (ITIN), the spouse with an SSN and any children with SSNs or an Adoption Taxpayer Identification Number (ATIN) could get the payment.
8. Beneficiaries had to be a US citizen, permanent resident or qualifying resident alien. (Tax Outreach 2022)

The above requirements necessitated the US government to have the following up-to-date data on all citizens;

- All citizens' monthly or annual income data
- Data on marriages and combined income of married couples
- Data of heads of all households
- Age data on all citizens
- Tax-payer identification numbers, social security numbers or adoption tax-payer identification numbers.
- Distinctive data on citizens, permanent residents and resident aliens.

The United States successfully implemented various rounds of rollouts and payments of its Covid-19 stimulus checks on time. According to the US Internal Revenue Service (IRS), the few reported delays were caused by citizens who did not have an Internet connection, families with mixed immigrant status, those facing homelessness and those who had never filed a tax return (GAO 2022).

According to Scott (2020), the success of the US stimulus payments was largely attributed to the country's stringent data collection and centralisation systems. He argues that, with ready data, it is very easy to determine who intended beneficiaries should be and where the thresholds should be placed based on available budgets. It is apparent that there are lessons to be drawn from the situation of the United States, with the key lesson being individual citizens' data collection and the centralisation of this data.

Discussion and Policy Recommendations

According to the data, several East African countries have insufficient citizen data collection systems, which do not hold multilayered data on all vulnerable people. It is also obvious, particularly in the cases of Kenya and Rwanda, that the government ecosystem contained numerous data silos, none of which could deliver meaningful and actionable data sets. Decentralising data collection is necessary and using community data systems and integrating databases will be beneficial. Many East African countries still have minimal national identification. Most member states required a national identity number to validate beneficiaries, although many people did not have one or a national ID. East African member states must mobilise residents to register for ID and governments must simplify the process by making it mandatory. However, this will only be beneficial if ID numbers collect timely multidimensional data, such as income, marital and family status and other factors. In terms of data collection, it is also necessary to leverage the role of local government authorities in instituting a more routine and systematic technique of data collection at lower levels to enrich the national data infrastructure.

Conclusion

According to the preceding discourse, it is obvious that, in addition to the insufficient availability of resources, government agencies require careful consideration and participation of all key government agencies in comparable government relief initiatives. This is especially true in developing countries where national databases are not kept up to date. Only with the assistance

of appropriate local governments can comprehensive screening, checks and balances, auditing and bookkeeping be performed. Rwanda's success story serves as a model for many developing countries.

There are various restrictions to targeted monetary transfers. Firstly, this strategy may exclude persons who have experienced unexpected income loss as a result of a crisis. Secondly , developing countries, such as those in East Africa, lack data on the incomes of the majority of their people, particularly those in the informal sector, making the use of proxy measures prone to inclusion and exclusion errors (giving the transfer to those who are not poor but have a strong incentive to lie), and increasing the likelihood of failure to deliver the transfer to poor individuals who slip through due to the inadequacies of the eligibility criteria. Thirdly, relying on old data from national statistics institutes to decide who needs monetary support during the epidemic does not represent current ground realities. Despite these limitations, cash transfers continue to be superior solutions for many developing countries. Transfers reach the needy more directly than food distribution and are less prone to corruption since money flows through fewer middlemen, reducing the number of authorities with unrestricted rights and private interests. Furthermore, cash transfers will be particularly efficient only in nations that already have institutions and techniques in place to transfer cash to the needy, such as extensive usage of mobile money systems, like M-Pesa.

Another lesson for developing countries is the need for good data collection and administration systems. The lack of accurate data on people's incomes to designate and assist legitimate recipients may have significantly hampered attempts in countries like South Sudan and Tanzania, which did not have social relief programmes. A comprehensive database of people's earnings, expenditures, living standards and dependence ratios can assist in the effective design of comparable government relief programmes. Lessons ought to be drawn from the case of the United States.

Governments should establish clear transparency norms and execute strict checks and balances. This may be accomplished by implementing clear, transparent and efficient targeting methods; selecting trustworthy and context-specific distribution systems; assuring transparency and involvement of beneficiaries; and putting in place rigorous monitoring and evaluation systems. In order to minimise and mitigate the fraud and corruption risks associated with public health crisis management and economic rescue measures, suitable legal and institutional frameworks must be established and implemented. Governments can ensure that their responses to current and potential future health emergencies effectively sustain public health,

national economies and the wellbeing of affected communities by doing so in a reasonable timeframe, allowing for the involvement of all relevant stakeholders, including anti-corruption bodies, civil society and the private sector and through strong monitoring and evaluation processes (UNODC 2021). The following is an overview of policy recommendations to East African developing countries.

- Governments should strengthen national identification and provide everyone with a national identification number.
- Governments should integrate all fragmented information and data systems into a social register capable of capturing multidimensional data on residents, such as income levels, standard of living, and so on.
- Governments should leverage on local governments' involvement in maintaining timely management information systems at the local level.

Finally, because this research primarily looked at government-implemented initiatives, it is likely that some programmes were overlooked or disregarded unintentionally. It is also obvious that several donors and global corporations stepped up to help deliver aid to many individuals throughout the outbreak. The study is not intended to be definitive, as new data and studies on the effects of Covid-19 are still being released.

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Are the Covid-19 Pandemic and Public Procurement '*Strange Bedfellows*'? An African Perspective

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Abstract

The purpose of this article is to provide insights into how the Covid-19 pandemic has affected public procurement operations, and the role of public procurement during the pandemic. The article synthesises relevant literature on Covid-19 and public procurement in the African context. A review of literature from 2020 to 2022 was done to enrich the findings of the current article, which shows that the Covid-19 pandemic affected public procurement in the form of delays, malpractice, budget reallocations and supply disruptions. Furthermore, during the Covid-19 pandemic it was recommended that public procurement practices be more strategic through collaboration, and respond more quickly in obtaining vaccines and health supplies, which were critical in the prevention and treatment of related illnesses. The article provides several practical implications in terms of ensuring good governance, implementing regulatory frameworks for emergency procurement, improving collaboration among members of comparable regional organisations, and implementing Covid-19 preventative measures. Finally, because the current study's scope is limited in terms of the selection of published articles and other relevant literature that give insights about the African continent during this period, future studies could be conducted to include literature from outside the African continent in order to broaden the scope of this current study.

Keywords: Africa; Covid-19; pandemic; procurement; public procurement

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Résumé

L'objectif de cet article est de donner un aperçu de la manière dont la pandémie de Covid-19 a affecté les opérations de passation des marchés publics et le rôle des marchés publics pendant la pandémie. L'article synthétise la littérature pertinente sur le Covid-19 et les marchés publics dans le contexte africain. Une revue de la littérature de 2020 à 2022 a été réalisée pour enrichir les conclusions de cet article, qui montre que la pandémie de Covid-19 a affecté les marchés publics avec des retards, des malversations, des réallocations budgétaires et ruptures d'approvisionnement. En outre, pendant la pandémie de Covid-19, il a été recommandé que les pratiques de passation des marchés publics soient plus stratégiques grâce aux collaborations et qu'elles réagissent plus rapidement à obtenir des vaccins et des fournitures sanitaires essentiels à la prévention et au traitement des maladies connexes. L'article fournit plusieurs incidences pratiques en ce qui concerne l'assurance d'une bonne gouvernance, de mise en œuvre de cadres réglementaires pour l'approvisionnement d'urgence, d'amélioration de la collaboration entre les membres d'organisations régionales comparables et de mise en œuvre de mesures préventives contre le Covid-19. Enfin, comme la portée de l'étude actuelle est limitée en termes de sélection des articles publiés et d'autres documents pertinents qui donnent un aperçu du continent africain pendant cette période, de futures études pourraient être menées pour inclure la littérature hors continent africain afin d'élargir la portée de la présente étude.

Mots-clés : Afrique ; Covid-19 ; pandémie ; achats ; marchés publics

Introduction

Public procurement can be defined as the function of governments or other public-sector organisations associated with acquiring goods and services (Thai 2001; Uyarra and Flanagan 2010). The literature on public procurement is divided into two streams. The first identifies public procurement as a critical area of business research (Fourie and Malan 2020; Harland *et al*. 2019; Holma *et al*. 2021; Morley 2021). The second classifies it as a component of public administration (Mazibuko 2021; Snider and Rendon 2012; Trammell, Abutabenjeh and Dimand 2020). Thus, public procurement is considered one of the pillars of efficient and effective public administration due to the significant monetary transfers between the government and private companies (Basheka and Auriacombe 2020). It should also be noted that the function involves the acquisition of goods and services and works to facilitate government operations in carrying out its responsibilities to its citizens.

Globally, in 2017 the amount spent on public procurement operations accounted for more than 20 per cent of the world's total expenditure (approximately 12 per cent of GDP in OECD countries) (OECD 2019). In 2020, it accounted for approximately 17 per cent of GDP of OECD countries (OECD 2021). Public procurement expenditure makes up more than 70 per cent of developing-country budgets (Ambe 2019) and approximately 30 per cent of GDP in some African countries (Djankov, Islam and Saliola 2016). The importance of public procurement is determined not only by the amount of funds allotted to the function but also by the number of public procurement reforms put in place to improve the efficiency and effectiveness of public procurement operations. The function's role is to ensure national economic development and regional development (Changalima, Mushi and Mwaiseje 2021; Fourie and Malan 2020; Preuss 2011; Zabala-Iturriagagoitia 2022).

The Covid-19 pandemic has affected most parts of the world in various ways (Akrofi and Antwi 2020; Ayanlade and Radeny 2020; Gautam and Hens 2020; Granich, Gupta and Williams 2022; Kamel and Mousa 2020; Siringi 2022; Susilawati, Falefi and Purwoko 2020; Yadav and Iqbal 2021), which necessitated that almost all countries develop mechanisms to at least survive the pandemic. Even though countries have struggled throughout the pandemic, the World Health Organization (WHO) has remained steadfast in its commitment to ensuring that safety and health precautions are followed by communities worldwide. Furthermore, researchers and academics have played an important role in keeping the community up to date by responding to special issues and granting free access to journal articles and other literature about the pandemic. Such efforts have produced a strand of literature relating to the Covid-19 pandemic and procurement and supply-chain operations globally (Handfield *et al*. 2020; Harland 2021; Sadiq and Kessa 2020; Van Hoek 2021).

On 14 February 2020, Egypt became the first country in Africa to register a case of Covid-19 (Akrofi and Antwi 2020; Gilbert *et al*. 2020). Since then, there have been many deaths and much devastating news related to Covid-19 across the continent (Acquaah, Namatovu and Kiggundu 2021). The pandemic in African countries has not only had an impact on their economy and business operations (Mayala 2021; Takyi and Bentum-Ennin 2021), but also on most government activities (Mbunge 2020; Mukushwa, Mapuva and Mutema 2021). Although procurement in the public sector operates similarly to other government operations, the procurement function has remained critical throughout the pandemic. Before the pandemic, vaccines unrelated to Covid-19 were procured in

the Middle East and North Africa region for example (Jumaan *et al*. 2013; Kaddar *et al*. 2019). But procurement in the health sector increased in 2019, and in OECD countries expanded to about 29.3 per cent of public procurement expenditure (OECD 2021). The increase has been attributed to the impact of Covid-19 on countries around the world, resulting in increased procurement operations in the healthcare sector.

Since public procurement supports government functions and local, national, regional and international development (Harland *et al*. 2013), this article aims to look into how the Covid-19 pandemic has affected public procurement as an important tool for regional development and how public procurement in Africa plays a crucial role in pandemics like that of Covid-19. Therefore, this study synthesises literature that examines points of intersection between the Covid-19 pandemic and public procurement operations on the African continent. By doing so, the study aims to provide research-based evidence on public procurement and the Covid-19 pandemic, particularly in Africa, where such studies are scarce. As a result, the study fills important gaps in the existing body of knowledge about the Covid-19 pandemic and public procurement. Furthermore, public organisations in most African countries could benefit from the lessons learned about the roles played by public procurement in pandemics like Covid-19 and how the Covid-19 pandemic has affected public procurement. This might help them navigate the pandemic and the post-Covid-19 era with greater awareness of their options.

The remainder of this article is organised as follows. The next section provides a conceptual overview of the relevant concepts. The article then presents the methods, succeeded by the main results and discussion. Conclusions and study implications follow and the article ends with a discussion of the study's limitations and future research directions.

Conceptual Overview of Key Concepts

Public Procurement

Public procurement is defined as the acquisition of goods, services and works by accredited public organisations in order to improve government activities, such as providing needed services to the public (Changalima, Mchopa and Ismail 2022). Because it is a government function, public procurement is thought to be important for the development of national economies by contributing to economic development. Public procurement expenditure is high in developed and developing countries (Ambe 2019; Djankov *et al*. 2016; OECD 2019). The monetary value of public

expenditure on procurement activities raises academic interest in a variety of public procurement areas in various contexts. As a result, there are literature streams on public procurement performance (Changalima, Mchopa and Ismail 2022; Changalima and Ismail 2019; Kiage 2013), small- and medium-enterprise participation in public procurement (Namagembe, Mpeera and Kalid 2021; Siwandeti *et al*. 2021), and value for money in public procurement (Changalima, Ismail and Mwaiseje 2022; Mchopa 2015; Mchopa *et al*. 2014; Mwaiseje and Changalima 2020; Panga, Mchopa and Kazungu 2015). These studies show that the function of public procurement remains an important research theme for studies on the African continent.

The Covid-19 Pandemic

Covid-19 is a virus-borne infectious disease caused by the SARS-CoV-2 virus (Ciotti *et al*. 2020; Lone and Ahmad 2020). Because the effects of its outbreak have direct and indirect effects on human interactions, the pandemic has disrupted the world in various domains of human life (Amani and Ismail 2022; Ayanlade and Radeny 2020; Yadav and Iqbal 2021), such as business, the economy, management, and health and social aspects. However, given the scarcity of evidence of links between public procurement and the Covid-19 pandemic, the current study adds an important piece of evidence to the literature on the effects of the pandemic on human life domains.

Methods

Specifically, the author of this review paper conducted a review of journal articles and other relevant literature in relation to the points of intersection between the Covid-19 pandemic and public procurement practices in Africa. In order to gather relevant literature, the researcher used the same methodology as in previous studies (Changalima, Ismail and Mchopa 2021; Osei-Kojo, Bawole and Sakyi 2020). These studies describe the methodological aspects of conducting a literature review in great detail. Therefore, specific steps were followed:

1. First, keywords were identified and used to locate relevant literature. Thus, a desktop search was conducted, looking for relevant literature through Google Scholar under the terms 'Covid-19 pandemic and procurement', 'public procurement and Covid-19 in Africa', 'Covid-19 pandemic in Africa', 'public procurement role in Covid-19 in Africa' and 'public procurement in Africa during Covid-19'. Through these key terms, the study was able to identify relevant literature in relation to the general objective of the study. In addition, the review included literature and other scholarly works published up to 2022.

2. Second, eligibility criteria were considered. The search included literature that contained all or some of the key terms and text words that were relevant to the study. Typically, studies that focus on literature reviews include eligibility criteria which ensure that the literature reviewed is relevant to the study's objective and that it is excluded if the criteria are not met.
3. The third step is reporting the eligibility criteria. These included literature in English as the language of publication. Journal articles were the most-considered publication outputs in the review because they had been peer reviewed before being published. The criteria also included literature published by African scholars or published in publications that specialised in information about the African continent. In this aspect, information related to authors and published titles was first checked to see if it met the aims of the study.
4. Lastly, the analytical strategy under which the study identified and discussed themes that were related to the objective of the study was considered. Two groups of themes were identified. The first included the effects of the Covid-19 pandemic on public procurement under 'How does the Covid-19 pandemic affect public procurement operations?'. The second group included literature that addressed the role of public procurement in the Covid-19 pandemic under 'What are the public procurement responses during the Covid-19 pandemic?'

Results and Discussion

The results and discussion of literature pertaining to Africa in terms of public procurement, as well as the Covid-19 pandemic, are presented in this section. The findings and discussions relate to two themes. The first discusses how the Covid-19 pandemic affects public procurement operations, while the second section discusses public procurement's role during the Covid-19 pandemic. Table 1 contains a summary of the main findings.

How does the Covid-19 Pandemic Affect Public Procurement Operations?

Undoubtedly, the Covid-19 epidemic impacted on the operations of procurement and supply-chain organisations around the globe. In African countries, procurement operations in the public sector have been affected similarly to other countries. Therefore, this part presents the effects of the Covid-19 pandemic on public procurement operations as reported across streams of literature in several African countries.

Insufficient level of transparency and openness

During the Covid-19 pandemic, it was observed that public procurement procedures were not as transparent as they should have been (Bangalee and Suleman 2020; Munzhedzi 2021). Transparency and openness in procurement relates to aspects of the procurement process and activities that stakeholders must observe in order to provide feedback on the procurement proceedings. Due to the reported urgency of procurements by buying organisations during the Covid-19 pandemic, these aspects were mostly not observed at the required levels. Regrettably, there has been an unsatisfactory level of transparency and openness in public procurement, given that public procurement in general is characterised by procedures. When procurement procedures in the public sector are not followed, transparency and openness are not practised to their full potential, which can lead to problems such as favouritism, a lack of due diligence and procurement audit inquiries. Therefore, the need for transparency in public procurement procedures is critical, as transparency allows the general public to be more informed about the procurement undertakings of their respective public authorities (Ndebele and Mdlalose 2021).

Misconduct in the emergency procurement of goods and services

Ozor and Nyambane (2020) reported that when the Covid-19 pandemic broke out it exposed flaws in the procurement policies of most countries. Their study included cases from Côte d'Ivoire, Ghana, Kenya, Malawi, Nigeria, Senegal, South Africa, Tanzania, Uganda and Zambia. Also, Covid-19 fostered corruption in health procurement. However, this is not covered in this review, which focuses instead on situations of emergency procurement. The purchase of goods or services that is made unexpectedly due to a condition that requires a buyer to act immediately to protect life, health or the function of an organisation is referred to as 'emergency procurement'. In this respect, the acquisition of goods and services in emergency circumstances demands situations in which the standard procurement procedures are overlooked during implementation.

The arrival of the Covid-19 pandemic prompted responses from several African governments, which included directives to follow emergency procurement procedures (Mantzaris and Ngcamu 2020; Mbandlwa and Netswera 2021). In most countries, these procedures existed before the Covid-19 pandemic. This is the case in Tanzania, for example. Section 65 of the Public Procurement Act (PPA) No. 7 of 2011 provides procedures

and scenarios in which buyers can procure in an emergency situation (URT 2011). The literature also emphasised the response of developing an emergency procurement strategy during the pandemic (Mathiba 2020)

Most of the processes that were streamlined in order to be sped up decreased the likelihood of competitiveness for tenderers in procurement opportunities. In general, public procurement is characterised by intense competition; a lack of competition has a negative impact on the outcomes of procurement operations (Nemec *et al*. 2020, 2021; Wanyonyi and Muturi 2015). Therefore, the rate at which suppliers and bidders participate in public procurement opportunities following properly advertised and fairly treated opportunities is related to the level of competition in procurement. However, it has been reported that under emergency circumstances, procurement regulations can be manipulated to allow purchases to be made without advertising, especially in emergency conditions like the Covid-19 pandemic (Munzhedzi 2021).

There is a strand of literature which shows that procurement misconduct in Africa was reported during the Covid-19 pandemic (Arkorful *et al*. 2021; Mantzaris and Pillay 2020; Mathiba 2020; Mbandlwa and Netswera 2021). Though much of the misconduct was associated with the Covid-19 pandemic, some of this was due to an unexpected increase in demand for requirements, which resulted in maverick buying. There was also a lack of integrity among practitioners and substandard quality products were supplied to markets. Misconduct resulted, too, in an increase in fraudulent and corrupt practices in procurement operations. Due to the fact that meeting the emergency of Covid-19 necessitated reducing the rigour of the legislative framework (Mlambo and Masuku 2020; Van Schalkwyk 2021), on some occasions deviations from standard operating procedures and codes of conduct led to malpractice that had a negative impact on organisational effectiveness and saw the loss of public funds.

Covid-19-related corruption was observed throughout Africa, primarily in the procurement sector. A 2021 audit in Cameroon, for example, discovered the misappropriation of nearly USD 333 million; in South Africa, there was a probable inflation of government contracts for the acquisition of medical equipment worth USD 900 million (Aikins 2022). Mantzaris and Pillay (2020) reveal that duplicate payments were made to companies, among other fraudulent practices in the tendering process. Similarly, corrupt practices that had an impact on the operations of organisations were observed (Dzinamarira *et al*. 2021; Mantzaris and Ngcamu 2020). These studies show that misconduct during the Covid-19 pandemic, particularly corrupt procurement practices, cost most African governments money.

Delays in completion of ongoing projects

In general, public procurement efforts focus on construction projects, because this category of procurement spends a large amount of money and involves a large volume of procurement (Changalima 2016; Mchopa 2020). A variety of factors, such as the availability of funds, labour and other resources, typically influence construction projects. Circumstances such as the pandemic contribute to the delayed completion of projects. Such negative consequences have been especially severe since the start of the pandemic. For example, in South Africa, the Covid-19 pandemic outbreak had a negative effect on the survival rate of construction projects (Aigbavboa *et al*. 2022). Similar effects were observed in the construction industry in Ghana (Agyekum, Kukah and Amudjie 2022; Amoah, Bamfo-Agyei and Simpeh 2021) and Zimbabwe (Zhanda 2020).

Social distancing and lockdowns are two of the best-known practices and mechanisms used to combat the spread of the Covid-19 pandemic. These mechanisms helped to slow the pandemic's spread, but they had a negative economic impact. It was determined that a lack of labour and the suspension of construction projects impacted the completion time of construction projects. These setbacks hampered the ability of projects to achieve their objectives. The effectiveness of government procurement outcomes is critical because through infrastructure construction governments provide services to citizens.

Supply disruptions

Global supply-chain disruptions occurred in a variety of industries across the globe during the pandemic. These interruptions negatively affected sectors that rely on and are associated with the purchase of goods and materials, the transportation and warehousing of goods, international purchases and the construction industry. During the pandemic, supply chains experienced vulnerabilities, necessitating the development of resilience in order to control the divested impacts (Mchopa *et al*. 2020). Supply shocks were extensively reported in the agricultural supply chain, including the food supply (Arouna *et al*. 2020; Nchanji *et al*. 2021), but supply interruptions also had an impact on the public procurement function. According to Munzhedzi and Phago (2020), disruptions associated with the Covid-19 outbreak mean that the majority of municipalities in South Africa will not be able to withstand the consequences of the pandemic. Because public procurement necessitates the acquisition of goods and services from third-party vendors, supply disruptions have an impact on its function. Supply

disruption events can occur in a variety of areas, including manufacturing, sales outlets and distribution activities. These occurrences have been linked to the lengthening of lead times.

Reallocation of public expenditure budgets

There is a stream of literature which shows that budgets for government expenditure were redirected in most African countries, including Tanzania (Haji 2021), South Africa (Burger and Calitz 2021; De Villiers *et al*. 2020) and Kenya (Barasa *et al*. 2021), and that the reallocation of funds was obtained from savings. These reallocations were related to handling unanticipated expenses that developed as a result of the Covid-19 pandemic. Reallocating funds that were previously budgeted for public procurement expenditures affected public procurement functions. It was reported that in Ethiopia during the Covid-19 pandemic most hospitals did not have ready budgets to procure personal protective equipment for health workers (Ejeta *et al*. 2021). Budget constraints affected the overall outcome of procurement activities in most hospitals and government organisations.

What are the public procurement responses during the Covid-19 pandemic?

The importance of procurement activities during the Covid-19 pandemic appears to have increased, resulting in a growth in the reputation of the procurement profession among practitioners.

Procurement of vaccines and other health supplies

The procurement function has played an active role throughout the pandemic, particularly in the procurement of vaccines, medical supplies and other health-related products. These medical and other related health supplies are used for treatment and prevention purposes. For example, the government of Angola purchased masks, gloves, hand-sanitisers (disinfectants) and infrared thermometers, all of which were regarded as protective and important supplies in the fight against the Covid-19 pandemic, by increasing infection prevention and control procedures (Ozili 2022). Furthermore, it was recommended that Covid-19 diagnostic tests be purchased in order to increase testing capacity (Makurumidze 2020). Diagnostic tests that are used to detect diseases, such as vitro diagnostics for Covid-19 testing (Ondoa *et al*. 2020), were among the medical supplies utilised during the pandemic. Other supplies included hospital beds or

cots designed for patients who are hospitalised or in need of some type of healthcare while they are in the hospital. The demand for hospital cots rose as a result of the increased demand for intensive care units in hospitals throughout Africa. Also, procurement of personal protective equipment for workers in healthcare facilities was given top priority during the pandemic (Makurumidze 2020).

Public procurement of vaccines during the pandemic was done in several countries in Africa, including South Africa (Bangalee and Suleman 2020) and Zimbabwe (Maketo and Mutizwa 2021). Though challenges associated with procured vaccines were reported, such as vaccine hesitancy, which is linked to a rejection or delay in the acceptance of vaccines (Afolabi and Ilesanmi 2021; Cooper, Van Rooyen and Wiysonge 2021), this is not the subject of the present research. African countries were urged to be wary and alert when purchasing vaccinations to avoid being duped by fake vaccines. Policy-makers were also urged to ensure that all aspects of the vaccines had been thoroughly considered before approval and rollout (Mwendwa *et al*. 2021).

Promoting strategic procurement practices

There was a rise in strategic procurement practices during the Covid-19 pandemic, which may be attributed to the fact that the onset of the pandemic led to a re-examination of the procurement function, which is now being considered in respect of the long-term components of the goals of its organisation. Strategic procurement practices are necessary during times of emergency and, according to the literature, some strategic procurement practices will need to be restructured as a result of the Covid-19 pandemic (Odongo and Panga 2021). Laryea and Watermeyer (2014) opined that collaborative and integrated procurement approaches adopted by organisations centre on the strategic procurement approach. The African Centre for Disease Control (CDC) has worked tirelessly to ensure that the continent is focused on bringing together various local and international organisations, as well as political leaders, to mobilise resources for increasing the effectiveness of vaccine procurement and accelerating Covid-19 vaccine trials throughout Africa. The goal of this effort is to forge partnerships with and develop the capacity of key government institutions and networks (Hagan Jr. *et al*. 2021). All these are practices under collaborative procurement, which are regarded as facets of strategic procurement.

Table 1: Key themes of the reviewed literature

SUB-THEMES	ASPECTS	SURVEYED LITERATURE
Effects of the Covid-19 pandemic on public procurement	Insufficient level of transparency and openness	Bangalee and Suleman (2020), Munzhedzi (2021), Ndebele and Mdlalose (2021)
	Misconduct in the emergency procurement of goods and services	Arkorful *et al.* (2021), Dzinamarira *et al.* (2021), Mantzaris and Ngcamu (2020), Mantzaris and Pillay (2020), Mathiba (2020), Mbandlwa and Netswera (2021), Mlambo and Masuku (2020), Munzhedzi (2021), Ozor and Nyambane (2020), Van Schalkwyk (2021)
	Delays in the completion of ongoing projects	Agyekum *et al.* (2022), Aigbavboa *et al.* (2022) Amoah *et al.* (2021), Mchopa (2020), Zhanda (2020)
	Supply disruptions	Arouna *et al.* (2020), Mchopa *et al.* (2020), Munzhedzi and Phago, (2020), Nchanji *et al.* (2021)
	Reallocation of public expenditure budgets	Barasa *et al.* (2021), Burger and Calitz (2021), De Villiers *et al.* (2020), Ejeta *et al.* (2021), Haji (2021)
The role of public procurement during the Covid 19 pandemic	Procurement of vaccines and other health supplies	Afolabi and Ilesanmi (2021), Bangalee and Suleman (2020), Maketo and Mutizwa (2021), Makurumidze (2020), Mwendwa *et al.* (2021), Ondoa *et al.* (2020)
	Promoting strategic procurement practices	Odongo and Panga (2021)

Conclusions and Study Implications

Conclusions

This article discusses some of the interactions that exist between public procurement and the Covid-19 pandemic, in terms of the pandemic's impact on public procurement operations and the role of public procurement during the pandemic. Clearly, African scholars and some journal outlets have done an excellent job of disseminating information about public procurement and Covid-19 pandemic impacts in a variety of ways. The findings of this article show that during the Covid-19 pandemic most African countries relied heavily on public procurement. However, some irregularities have been reported in connection with maverick purchases associated with emergency procurement. As a result, deliberate efforts must be made to

ensure that procurement practices in the public sector are considered during Covid-19 and other pandemics in such a way that the overall goal of public procurement operations is not jeopardised and that the function is used as a tool for combating the pandemic and other similar events during these times. This can be accomplished by establishing an appropriate framework for guiding public procurement activities in time-sensitive and emergency situations, ensuring proper requirement integration and forecasting accurate and reasonable future requirements.

Managerial Implications

Public procurement activities involve several practitioners within an outsized organisation. Users, procurement professionals, suppliers and the general public are examples of practitioners. According to the literature review, public procurement and the Covid-19 pandemic have interacted in a variety of ways. During the pandemic, the public procurement function played an important role and the pandemic affected most public procurement operations in African countries, according to reports. As a result, the study concludes that public procurement and the Covid-19 pandemic are linked 'strange bedfellows'.

Based on the findings of this article, four main managerial implications are pointed out.

1. First, the governments of most African countries could ensure that procurement activities within the public sector are organised so that malpractice is eliminated during times of urgency and emergency to reduce losses associated with poor procurement practices. This can be achieved by having a clear and well-understood regulatory framework for enhancing procurement operations in emergency and urgent situations. For instance, in Tanzania, the PPA No.7 of 2011 and its regulations stipulate procurement operations under an emergency and when procuring life-saving commodities. In this aspect, managers in public organisations could assist policy-makers in ensuring that there are national procurement guidelines to deal with procurement activities in situations like Covid-19 pandemic.
2. Second, African countries could integrate and collaborate in public procurement activities, particularly those countries that are part of similar regional groups, such as the East African Community (EAC) and the Southern African Development Community (SADC). As a result, the costs associated with acquiring supplies related to medical equipment could be significantly reduced, resulting in sizeable savings for governments. In addition, member states could share information about the availability of hospital supplies and use a common currency

when placing orders, thereby avoiding the additional costs associated with foreign currencies. Even though collaboration may not appear to be possible due to differences in procurement procedures between countries, it is possible in specific projects such as the procurement of healthcare supplies.

3. Third, most public procurement operations cover the entire range of activities, from identifying needs to the delivery of value to the general public. Since public procurement operations have been affected by the Covid-19 pandemic, managers in public-sector organisations should take into consideration the measures and efforts that have been put in place to combat the outbreak. Directives were issued by the WHO and other international organisations, emphasised by local authorities and implemented by procurement practitioners. As a result, activities such as meetings to review bids were affected by social distancing, which resulted in the increased use of information and communication technologies in procurement operations. Consequently, by following the policies and procedures in place for dealing with the Covid-19 pandemic, managers in public organisations could ensure the safety of their employees while also reducing the impact of the pandemic on public procurement operations.
4. Lastly, accountability among public procurement practitioners is required to guarantee that public procurement processes continue to provide good results during and beyond the Covid-19 outbreak. It should be noted that when it comes to good governance, public accountability is critical to the success of the process (Munzhedzi 2021). The attitude of being accountable in relation to actions taken by public officials is made easier by public accountability practices and policies. In this regard, the actions taken by public procurement officials during the Covid-19 pandemic, as well as the actions associated with the acquisition of goods and services during the pandemic, should be thoroughly scrutinised to ensure that wrongdoers are held accountable for their decisions.

Limitations and Directions for Future Research

A literature review was the primary focus of this study because the goal was to synthesise the available literature concerning public procurement and the Covid-19 pandemic on the African continent. As a result, the scope of the current study is constrained by the selection of published articles and other literature relevant to the African continent. The study's scope is therefore limited in terms of the amount of literature synthesised to address the overall objective. Studies conducted in the form of literature reviews are also limited in that the selection of articles and literature to be included in the study is based on the subjective judgement of the researchers themselves (Trammell *et al.* 2020).

The criteria used were geared towards addressing the study's themes in terms of aspects of the African environment, which was the goal; however, the study is limited in this regard and thus future studies that include literature outside the African continent could be conducted to extend the current study. Furthermore, because the current research focuses on the intersection of public procurement and the Covid-19 pandemic, empirical evidence could be provided by quantifying the role of public procurement reforms in pandemics like Covid-19 and similar situations. Studies in these areas might provide insights that would supplement the current study by providing additional information.

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Effets de la Covid-19 sur les entreprises du secteur informel agricole au Sénégal

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Résumé

Cet article porte sur l'effet de la crise de la Covid-19 sur les entreprises informelles du secteur agricole sénégalais. La démarche retenue combine une revue de la littérature et des analyses descriptives avec comme support les données de l'enquête du « Suivi de l'impact de la Covid-19 sur les unités du secteur informel 2020 », de l'Agence nationale de la statistique et de la démographie (ANSD). Les résultats de l'analyse ont permis de renseigner les principaux canaux par lesquels la pandémie a affecté les UPI. Il en ressort que les restrictions liées à la pandémie sont principalement la cause de la fermeture définitive ou temporaire des unités. S'y ajoutent les difficultés d'approvisionnement en matières premières et celles liées à l'écoulement des produits. Cela affecte négativement le chiffre d'affaires de ces entrepreneurs. Cette situation se traduit par une baisse de la production d'au moins 25 pour cent pour 95,1 pour cent des répondants. Par conséquent, la variation à la baisse du personnel, exclusivement des hommes, est notée pour 10 pour cent des UPI. Elle se manifeste en partie par l'adoption de stratégies d'adaptation pour faire face aux effets de la crise. Dans ce sillage, la diversification des produits a constitué pour 46,5 pour cent des unités une approche salutaire.

Mots-clés : secteur informel agricole, UPI, covid-19, stratégie d'adaptation, Sénégal

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Abstract

This article focuses on the effect of the COVID-19 crisis on informal enterprises in the Senegalese agricultural sector. The methodological approach adopted combines a documentary review and descriptive analyzes with the support of data from the survey on "Monitoring of the impact of COVID-19 on informal sector units 2020", from the National Agency for Statistics and Demography (ANSD). The results of the analysis made it possible to inform the main channels through which the pandemic affected the IPU. It appears that the restrictions linked to the pandemic are mainly the cause of the permanent or temporary closure of the units. Added to this are the difficulties in the supply of raw materials and the sale of products. This negatively affects the turnover of these entrepreneurs. This situation translates into a drop in production of at least 25 per cent for 95.1 per cent of respondents. Consequently, the downward variation of personnel, exclusively men, is noted for 10 per cent of the IPU. It manifests itself in part through the adoption of coping strategies to cope with the effects of the crisis. In this wake, product diversification was a healthy approach for 46.5 per cent of units.

Keywords: Informal agricultural sector, IPU, covid-19, coping strategy, Senegal

Introduction

L'économie des pays en développement est portée en grande partie par le secteur informel, tant du côté de la production que de l'emploi. Il existe en effet dans la littérature une pléthore de définitions du secteur informel. Néanmoins, les approches descriptives mettent le curseur sur la taille des entreprises, le rapport entre employés et travailleurs, le niveau de la technologie utilisée, le degré d'intégration de la fiscalité, le mode de financement, etc., pour analyser ce secteur d'activité (Barthélemy 1998).

Le Sénégal se caractérise par une économie fortement informelle qui offre 90 pour cent des emplois (Sène 2021), mais aussi par un secteur agricole employant plus de 60 pour cent de la population active (Tandjigora & Sy 2021). En outre, l'Agence nationale de la statistique et de la démographie (ANSD) estime à 940 323 le nombre d'individus ayant une activité principale dans les unités de production du secteur agricole[1]. Ces dernières, pour la plupart informelles, sont dans des conditions assez précaires.

À cela s'ajoute une situation financière peu favorable qui se traduit par un faible accès aux crédits bancaires pour financer le lancement ou le développement des unités de production du secteur informel, notamment les agricoles. À ce titre, les banques commerciales ne financent qu'à hauteur de 5,2 pour cent les entreprises du secteur informel, selon le rapport 2020

de l'Organisation internationale du travail (OIT) sur le diagnostic de l'économie informelle au Sénégal. Cette conjoncture semble minimiser les capacités de ces entreprises face aux crises plus ou moins fréquentes (crise économique, changement climatique, crise sanitaire, etc.). Dans ce sillage, il est opportun de s'interroger sur les effets induits par la pandémie de Covid-19 sur les entreprises informelles du secteur agricole au Sénégal.

Du reste, la pandémie de Covid-19 demeure singulière par sa contagiosité virulente et les effets engendrés par les mesures restrictives visant à l'endiguer. En effet, moins de trois mois après son apparition en Chine en décembre 2019, le virus s'est propagé dans la quasi-totalité des régions du monde. Plusieurs auteurs ont étudié l'impact de cette crise sur les économies à différents niveaux et segments, notamment sur les économies informelles. Nimaga (2021) a réalisé une étude qualitative sur la situation des entreprises informelles en période de pandémie de Covid-19 dans le district de Bamako (Mali). Les résultats mettent en exergue un secteur éprouvé à cause de la précarité, de la promiscuité désagréable, du manque d'hygiène et de sécurité au travail. Badiane *et al*. (2022) ont analysé les effets de la Covid-19 sur les maraîchers urbains de la zone des Niayes de Dakar. Pour ces derniers, cet épisode a été assez difficile, en sus des contraintes liées au développement urbain. Néanmoins, des maraîchers ont, de façon individuelle, développé des stratégies d'adaptation durant le confinement, avec le commerce en ligne de produits maraîchers.

En outre, dans leur étude intitulée « Covid-19 et secteur informel de l'alimentaire : cas de la région de Dakar », Diallo et Ndongo (2022) ont révélé une baisse de 41,3 pour cent de chiffre d'affaires journalier pour les transformateurs de produits agricoles, en comparaison avec la situation pré-Covid-19.

Le présent article vise à analyser l'effet de la pandémie de Covid-19 sur les entreprises informelles du secteur agricole au Sénégal. Pour ce faire, l'approche méthodologique retenue combine une revue documentaire et des analyses descriptives permettant de retracer les effets économiques et sociaux de la pandémie de Covid-19 sur les unités de production informelles du secteur agricole.

Revue de la littérature

Cette partie comprend tout d'abord un rappel des caractéristiques du travail dans le secteur informel. Ensuite, elle retrace comment la crise de la Covid-19 a affecté les entreprises du secteur informel de manière générale. Elle relève enfin la manière dont les entreprises agricoles, y compris les exploitations familiales, ont été impactées par cette crise sanitaire.

Caractéristiques du travail dans le secteur informel

Pour l'Organisation internationale du travail (2002), le travail dans l'économie informelle se caractérise souvent par des lieux de travail petits ou indéfinis, des conditions de travail dangereuses et malsaines, de faibles niveaux de compétence et de productivité, des revenus faibles ou irréguliers, de longues heures de travail et un manque d'accès à l'information, aux marchés, au financement, à la formation et à la technologie. Les travailleurs de l'économie informelle ne sont pas reconnus, enregistrés ou réglementés ; ils travaillent souvent sans contrat formel et ne sont donc pas protégés par les lois sur le travail et la protection sociale. Les causes profondes de l'informalité comprennent des éléments liés au contexte économique, aux cadres juridiques, réglementaires et politiques, et à certains déterminants au niveau micro, tels qu'un faible niveau d'éducation, la discrimination, la pauvreté et le manque d'accès aux ressources économiques, à la propriété, aux services financiers et autres services aux entreprises, et aux marchés. La forte incidence de l'économie informelle est un défi majeur pour les droits des travailleurs à des conditions décentes de travail, et a un impact négatif sur les entreprises, les recettes publiques, le champ d'action des gouvernements, la solidité des institutions et la concurrence loyale (*ibid.*).

Ce secteur échappe à une certaine réglementation comme la tenue de la comptabilité, la disponibilité d'un NINEA ou d'un registre de commerce. Il compte cependant plus de 90 pour cent des entreprises dans les pays en développement. Au Sénégal, le dernier recensement général des entreprises réalisé en 2017 a révélé que 97 pour cent des entreprises sont informelles. Ces dernières sont composées principalement de très petites entreprises et de petites et moyennes entreprises du secteur non agricole (OIT 2020), ce qui constitue un poids déterminant pour l'économie du pays. Certaines de ces entreprises présentent une bonne santé financière, mais préfèrent rester dans l'informel pour échapper à la taxation (impôt sur les sociétés). Cependant, la plupart sont de nature fragile et le deviennent encore plus en cas de choc exogène, comme la pandémie de Covid-19, qui sévit toujours, bien que le rythme de propagation du virus ait connu une baisse majeure. Cette crise sanitaire a ralenti leur marge de manœuvre en raison des nombreuses restrictions imposées par l'État, comme ce fut le cas pour la plupart des pays du monde (couvre-feu, limitation des déplacements interurbains, fermeture des frontières ou même confinement dans certains pays).

Le secteur informel et la crise de la Covid-19

La pandémie de Covid-19 est une crise majeure qui, en frappant l'économie et le marché du travail, a d'importantes incidences en raison du chômage

et du sous-emploi qu'elle engendre chez les travailleurs du secteur informel. Des catégories spécifiques de travailleurs, surreprésentées dans l'économie informelle, notamment les femmes, les jeunes, les enfants, les populations autochtones et les travailleurs migrants, connaîtront une aggravation de leur précarité (FAO 2020). En effet, au Sénégal, Cabral *et al*. (2021) ont montré que les travailleurs non qualifiés sont les plus impactés par la crise. Toutefois, leur étude a indiqué que les femmes, bien qu'elles soient fortement affectées, le sont moins que les hommes. Cette situation s'explique, selon les auteurs, par la forte présence des femmes dans les secteurs agricoles, positivement affectés par l'augmentation de la demande étrangère.

Au-delà de cette perspective genre de l'effet de la Covid-19 sur les travailleurs du secteur informel, il est important de noter que les travailleurs de l'économie informelle, qui sont pour la plupart des travailleurs indépendants, sont particulièrement vulnérables aux chocs sanitaires, car ils ne sont généralement pas couverts par les systèmes de protection sociale, gagnent leur vie grâce à des revenus faibles et irréguliers, ne sont pas suffisamment représentés dans les structures de gouvernance locales et nationales et ne sont pas protégés par la législation du travail (Khambule 2020). D'après cet auteur, ces carences augmentent le risque que la Covid-19 et le ralentissement économique mondial qui en résulte aient un impact dévastateur sur la vie et les moyens de subsistance des travailleurs de l'économie informelle, particulièrement en Afrique. Une projection devenue stricte réalité.

Au demeurant, le dénominateur commun des entreprises du secteur informel reste le déficit de travail décent et une faible capacité de résilience en cas de choc exogène, de crises économiques ou sanitaires, à l'image de la Covid-19. Alves *et al.* (2020), cités par Diallo *et al.* (2022), sont en phase avec cette assertion. Cela contribue à exposer davantage ces entreprises à des risques supplémentaires et à la précarité.

Bien que le secteur informel des pays en développement et même émergents échappe aux formalités administratives, aux taxes, aux législations, etc., la pandémie de Covid-19 a prouvé que le secteur informel, de manière spécifique, et l'économie informelle, de manière générale, ne sont pas à l'abri des instabilités mondiales et qu'elle menace la source même des revenus et des moyens de subsistance pour des centaines de millions de personnes engagées dans des activités informelles. Ainsi, selon les projections de Sumner *et al.* (2020, cités par Khambule), la pandémie de Covid-19 est susceptible d'anéantir les gains sociaux et économiques des trente dernières années et d'entraîner des taux de pauvreté et de chômage sans précédent.

Effets de la pandémie sur le secteur agricole

S'agissant ainsi du secteur agricole, dans toutes les chaînes de valeur, le plus grand impact de la Covid-19 sur les PME agricoles est l'évolution de la demande, suivie des perturbations de la circulation des marchandises, de l'information et des capitaux (Shakhovskoy & Hook 2020). Certaines entreprises peuvent bénéficier d'une demande accrue de produits de base, mais pour beaucoup, les perturbations de la chaîne d'approvisionnement auront un effet négatif (*ibid.*). Dans cette logique, un confinement de cinq semaines aurait entraîné au Rwanda une baisse de 18 pour cent du PIB agroalimentaire sur une période de cinq semaines et de 18 pour cent sur une période de six semaines, d'après des données de l'IFPRI (Learning Lab. *et al*. 2020).

Les petits agriculteurs continuent d'être affectés par cette pandémie. D'après Haga (2020), ces derniers sont déjà susceptibles de souffrir de la faim (une réalité plutôt perverse, compte tenu de leur contribution à la production alimentaire). À cela s'ajoute un accès limité aux intrants et actifs agricoles, bien qu'ils cultivent leur propre nourriture. Par conséquent, ils adoptent un régime alimentaire restreint qui répond à peine aux besoins de la famille, limitant ainsi toute perspective de commercialisation.

Pour ceux qui produisent régulièrement des excédents, le manque d'information et de pouvoir de négociation limite souvent les profits qu'ils sont capables de générer et la baisse des revenus, à son tour, rend plus difficiles la diversification et l'amélioration de leur alimentation. Cela les rend, ainsi que d'autres populations rurales, particulièrement vulnérables aux chocs, y compris aux impacts de la pandémie actuelle (*ibid.*).

Par ailleurs, les différentes recherches menées au Sénégal identifiant les effets de la crise sanitaire sur le secteur agricole restent très limitées. Les rares études réalisées ont toutefois conclu à un effet négatif de la pandémie sur quasiment toute la chaîne de valeur. Ainsi, selon Diallo et Ndongo (2022), les mesures restrictives ont conduit à une perte significative des recettes journalières des commerçants (40,5 %), des transformateurs (41,3 %) et des restaurateurs (40 %).

De même, Niang et Faye (2021) ont conclu que la majorité des exploitations familiales (97,1 %) ont subi d'importantes contraintes dans la préparation de la campagne agricole 2020-2021, avec des difficultés liées à l'acquisition des engrais (81,8 %), des semences (67,9 %) et des équipements agricoles (51,3 %). Des mêmes auteurs, une analyse à un niveau plus structuré, avec les organisations de producteurs (OP), a souligné que de fortes craintes ont été exprimées, notamment au sujet de la commercialisation des produits agricoles, à l'image de l'arachide. Les

mesures de restriction et les difficultés rencontrées dans la constitution du capital semencier devraient empêcher l'ouverture du marché aux étrangers, ce qui constituerait un manque à gagner pour les entités agricoles.

Le constat s'avère quasiment le même avec l'IPAR (2020) dans son étude sur les *Effets de la Covid-19 sur les ménages agricoles et ruraux du Sénégal*. Selon cette structure, la pandémie a eu des effets négatifs sur les modes de consommation alimentaires, qui ont connu des modifications en termes de quantité (62,4 %) et de qualité (70,1 %) pour la majorité des ménages des zones rurales. En outre, seuls 45,3 pour cent des ménages disposaient à cette période d'un stock de céréales, avec une durée très faible estimée à 22 jours en moyenne. Une situation consécutive en grande partie au choc des mesures induites par la Covid-19.

Source des données

Les données utilisées proviennent de la base du « Suivi de l'impact de la Covid-19 sur les unités du secteur informel 2020 » de l'Agence nationale de la statistique et de la démographie (ANSD). Elles ont été collectées au courant des mois de juillet et août 2020. Dans un contexte de crise causée par la pandémie de la Covid-19, il était nécessaire de produire des données à haute fréquence pour aider les décideurs à surveiller les canaux par lesquels la pandémie affecte le secteur informel et à évaluer son impact sur les unités du secteur informel afin de pouvoir apporter une meilleure réponse pour les mesures d'atténuation.

Selon l'ANSD, les principaux objectifs de l'enquête étaient, au-delà d'apprécier l'incidence de la pandémie sur le chômage et le sous-emploi, d'identifier les secteurs d'activité les plus affectés par la pandémie, d'identifier les principaux canaux par lesquels la pandémie affecte les unités de production informelles, d'apprécier l'impact de la pandémie sur le chiffre d'affaires des unités de production informelles, et enfin d'évaluer les différentes stratégies d'adaptation et de survie des unités de production informelles face aux conséquences de la pandémie.

L'enquête a couvert toutes les activités économiques du secteur informel au Sénégal. Un échantillon représentatif au niveau national de 785 unités est tiré sur les entreprises et porte sur les Unités de production informelle (UPI) identifiées et confirmées dans l'ERI-ESI 2017 (Enquête régionale intégrée sur l'emploi et le secteur informel). Elle couvre des domaines aussi variés que les informations de base des unités, la production, les ventes et l'emploi, la situation des dépenses et charges, les aides, l'assistance et les perspectives.

Traitement des données

Pour cette étape, les données concernant le secteur agricole informel ont été extraites de la base principale de l'enquête. Cela a permis d'identifier 59 observations dans 11 des 14 régions du Sénégal. Seules les régions de Diourbel, Kédougou et Matam ne sont pas présentes dans ces observations.

La structure des données impose une analyse descriptive. Celle-ci est déterminante pour mettre en exergue les propriétés des données. C'est-à-dire, dans le cas d'espèce, pour décliner par le biais d'une démarche inductive l'importance ou la non importance de tel effet sur un autre. Il s'agit à cet égard d'effectuer des correspondances univariées ou bivariées.

Résultats

Caractérisation des UPI de la filière agricole sénégalaise

Les unités de production informelles du secteur agricole échantillonnées dans cette étude sont spécialisées dans la culture (fruits, légumes, céréales) et la production de pépinières, l'élevage (volaille, caprin, bovin) et la pêche artisanale. Elles sont réparties dans 11 régions administratives du Sénégal (figure 1). Les régions de Sédhiou, Kolda et Dakar sont les plus représentatives avec, respectivement, 38 pour cent, 9 pour cent, 18,6 pour cent et 10,1 pour cent des unités enquêtées.

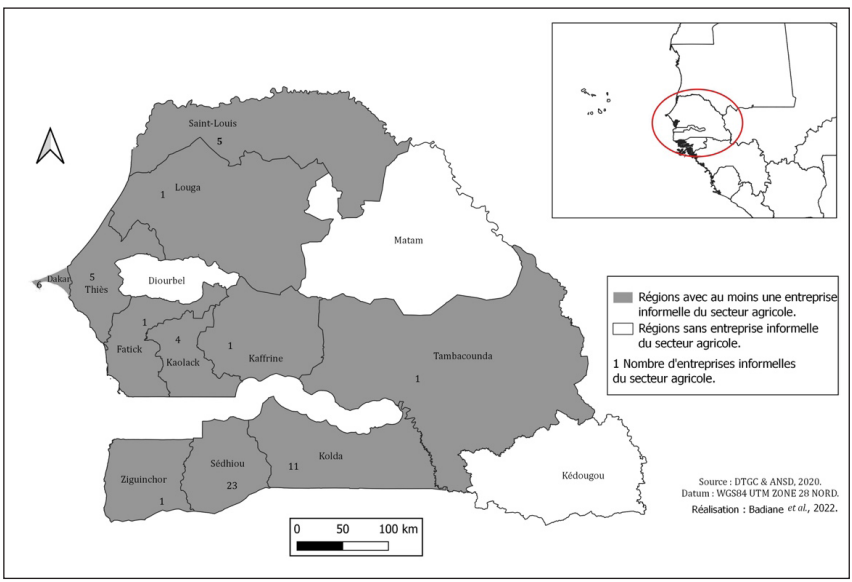

Figure 1 : Répartition par région administrative des UPI agricoles

Les responsables de ces unités de production agricole informelles sont constitués d'hommes à 84,7 pour cent. Ils sont 35,5 pour cent à n'avoir reçu aucune forme d'instruction tandis que ceux qui ont au maximum le niveau élémentaire sont 20,3 pour cent. En outre, cette dernière proportion est notée pour les gérants d'unité de production alphabétisés en arabe. Il faut noter de façon singulière que deux femmes propriétaires ou responsables d'unité de production ont reçu une alphabétisation en langue locale.

Cette tendance socio-démographique liée aux responsables des UP ne semble pas favoriser leur déclaration à titre de formalisation. En effet, 83 pour cent et 86,4 pour cent des UP ne disposent respectivement pas de numéro d'immatriculation au registre de commerce et de numéro d'identification national des entreprises et des associations (NINEA). Cette déclaration constitue une étape déterminante pour la formalisation de l'entreprise et permettrait son accès à des services publics ou privés appropriés.

Identification des canaux par lesquels la pandémie affecte les UPI agricoles

Pour établir l'incidence de la pandémie de la Covid-19 sur les UPI, il convient d'identifier les canaux par lesquels ses menaces subsistent. Ainsi, pour 28,5 pour cent (tableau 1) des entrepreneurs ou gérants des UPI du secteur agricole, les mesures restrictives liées à la pandémie sont la cause principale de la fermeture définitive ou temporaire de leur exploitation. À cela s'ajoutent les difficultés d'approvisionnement en matières premières et celles liées à l'écoulement des produits. Leur fréquence cumulée représente 21,3 pour cent des citations. Elle est sensiblement égale à celle des problèmes de financement, qui représente 21,4 pour cent des citations.

Tableau 1 : Principaux canaux de la pandémie affectant les UPI en %

Causes en cas de fermeture	**Fréquence de citation en %**
Problèmes de financement	21,4
Problèmes d'approvisionnement en matières premières	14,2
Restrictions liées à la Covid-19	28,5
Difficultés d'écoulement des produits	7,1
Autres causes	28,5

Source : ANSD, 2020 Calcul : Badiane *et al.*, 2021

Impact de la pandémie sur le chiffre d'affaires des UPI agricoles

Évolution de la production

Du début de la pandémie au déroulement de la collecte de données, il a été signalé que 39 propriétaires ou directeurs (tableau 2) d'entreprise enquêtés ont constaté une baisse de leur production située pour plus de la moitié entre 25 pour cent et 75 pour cent. En revanche, seules deux entreprises ont comptabilisé une hausse de leur production en cette période de forte crise de la Covid-19.

Tableau 2 : Évolution de la production des UPI depuis mars 2020

Proportion d'évolution de la production	Évolution de la production depuis mars 2020		
	À la baisse	À la hausse	Total
Entre 25 % et 50 %	11	0	11
Entre 50 % et 75 %	11	0	11
Moins de 25 %	9	2	11
Plus de 75 %	8	0	8
Total	39	2	41

Source : ANSD, 2020 Calcul : Badiane *et al.*, 2021

Évolution des prix

S'agissant des prix des produits, 97 pour cent des entreprises (tableau 3) les ont revus à la baisse depuis le début de la pandémie. Théoriquement, une baisse de la production devrait entraîner toutes choses égales par ailleurs une augmentation du prix du produit. Toutefois, en raison de la crise économique résultant de la pandémie, les demandeurs ne pourront satisfaire cette logique puisque leur pouvoir d'achat est drastiquement revu à la baisse.

Tableau 3 : Évolution des prix des UPI depuis mars 2020

Proportion d'évolution des prix	Évolution des prix depuis mars 2020		
	À la baisse	À la hausse	Total
Entre 25 % et 50 %	12	0	12
Entre 50 % et 75 %	11	0	11
Moins de 25 %	6	1	7
Plus de 75 %	7	0	7
Total	36	1	37

Source : ANSD, 2020 Calcul : Badiane *et al.*, 2021

Évolution des ventes

Tout comme la production et les prix, les ventes sont également revues à la baisse pour 43 entreprises informelles agricoles (tableau 4), contre seulement deux entreprises pour qui les ventes ont connu une augmentation entre le mois de mars et le mois d'août 2020. En effet, une baisse des prix devrait accroître les ventes si le pouvoir d'achat des ménages était élevé ou même constant par rapport à la période d'avant crise.

Tableau 4 : Évolution des ventes des UPI depuis mars 2020

Proportion d'évolution des ventes	Évolution des ventes depuis mars 2020		
	À la baisse	À la hausse	Total
Entre 25 % et 50 %	17	0	17
Entre 50 % et 75 %	12	1	13
Moins de 25 %	6	1	7
Plus de 75 %	8	0	8
Total	43	2	45

Source : ANSD, 2020 Calcul : Badiane *et al.*, 2021

Difficultés de paiement des matières premières

Au-delà des difficultés enregistrées, liées à la production, aux prix et à la vente des produits, les entreprises informelles agricoles ont fait état de leur situation avant et pendant la crise sanitaire en matière notamment de disponibilité de matières premières, de paiement de salaires et de versement de cotisations sociales.

Concernant les matières premières, 97,3 pour cent des entreprises enquêtées ont signalé rencontrer des difficultés d'approvisionnement en matières premières et ces difficultés sont une conséquence de la crise sanitaire. Cependant, 84,48 pour cent des entreprises avaient également des défis d'approvisionnement avant même la pandémie de Covid-19.

Tableau 5 : Difficultés de paiement des matières premières avant mars 2020

Difficultés de paiement matières premières avant mars 2020	Fréq.	Percent	Cum.
Non	9	15,5	15,5
Oui	49	84,4	100,0
Total	58	100,0	

Source : ANSD, 2020 Calcul : Badiane *et al.*, 2021

Tableau 6 : Difficultés de paiement des matières premières liées à la Covid-19

Difficultés de paiement matières premières liées à la Covid	**Fréq.**	**Percent**	**Cum.**
Non	1	2,7	2,7
Oui	36	97,3	100
Total	37	100	

Source : ANSD, 2020 Calcul : Badiane *et al.*, 2021

Difficultés de paiement des salaires

La pandémie, outre ses conséquences sanitaires, a également entraîné des difficultés économiques majeures. Bien que certaines entreprises (48,28 %) aient une trésorerie légère pour s'acquitter du paiement des salaires des employés, la Covid a entraîné, pour toutes les entreprises informelles agricoles sans exception, des difficultés de paiement des rémunérations mensuelles. Ce qui demeure un résultat de la baisse de la production et des ventes susmentionnée.

Tableau 7 : Difficultés de paiement des salaires avant mars 2020

Difficultés de paiement des salaires avant mars 2020	**Fréq.**	**Percent**	**Cum.**
Non	30	51,7	51,7
Oui	28	48,2	100
Total	58	100	

Source : ANSD, 2020 Calcul : Badiane *et al.*, 2021

Tableau 8 : Difficultés de paiement des salaires liées à la Covid-19

Difficultés de paiement de salaires liées Covid	**Fréq.**	**Percent**	**Cum.**
Oui	18	100	100
Total	18	100	

Source : ANSD, 2020 Calcul : Badiane *et al.*, 2021

Tableau 9 : Difficultés de paiement des matières premières avant mars 2020

Difficultés de paiement de cotisations liées à la Covid	**Fréq.**	**Percent**	**Cum.**
Non	1	5,26	5,26
Oui	18	94,74	100,00
Total	19	100,00	

Source : ANSD, 2020 Calcul : Badiane *et al.*, 2021

Incidences de la pandémie sur le chômage dans le secteur informel agricole

Il est également nécessaire de souligner les effets de la pandémie sur le volet social, par exemple sur le chômage, bien qu'il soit également un phénomène économique. En effet, la crise de la Covid-19 a poussé certaines entreprises à envoyer une partie de leurs employés au chômage. Cette réduction de 10 pour cent des employés n'est cependant constatée que du côté des hommes. Les femmes ne sont pas touchées par cette réduction du nombre des employés. Toutefois, les statistiques auraient pu être différentes si l'échantillonnage avait pris en compte plus de femmes.

Tableau 10 : Évolution du personnel après mars 2020 par sexe

	Hommes			Femmes		
Évolution du personnel	**Fréq.**	**Percent**	**Cum.**	**Fréq.**	**Percent**	**Cum.**
À la baisse	5	10,00	10,00	0	0	0
Constante	45	90,00	100,00	50	100	100
Total	50	100,00		50	100	

Source : ANSD, 2020 Calcul : Badiane *et al.*, 2021

Discussion

Impacts de la Covid-19 sur les UPI agricoles

Les résultats de cette étude mettent en exergue une disposition très peu confortable pour les UPI agricoles, induite par la pandémie de Covid-19. Cette dernière, en effet, a fortement perturbé l'approvisionnement des UPI en matières premières, ainsi que la dynamique d'écoulement de la production, à travers principalement les mesures restrictives adoptées pour endiguer la propagation du virus. Spécifiquement, pour l'écoulement alternatif des produits, certains réseaux de producteurs ont opté pour des cultures de diversification à cycle court et des cultures horticoles qui seront commercialisées localement (Latané *et al.* 2021). À cet effet, Badiane *et al.* (2022) ont révélé l'adoption de manière individuelle, par des maraîchers de la zone urbaine de Dakar, du commerce en ligne de produits maraîchers.

Toutefois, les résultats ont permis de démontrer, tout comme pour la production, une baisse des ventes pour 95,5 pour cent des UPI. Cela n'est pas sans conséquences sur le chiffre d'affaires des producteurs du secteur agricole informel. Cette conjoncture nécessite l'adoption de stratégies de résilience pour les UPI, qui se traduisent par la réduction des charges, notamment les emplois journaliers.

Stratégies d'adaptation des UPI agricoles face à la crise de la Covid-19

La pandémie liée à la Covid-19 est à l'origine d'une crise systémique qui a incité plusieurs acteurs à développer selon leur niveau d'action des stratégies d'adaptation. Il en est de même pour les acteurs de la filière agricole informelle. Il s'agit à ce titre, principalement, de la diversification des produits, avec 46,5 pour cent des citations (tableau 12). Bien que la forme de cette diversification ne soit guère précisée, elle reste admise dans la littérature comme une pratique fortement mobilisée pour faire face au choc. Ainsi, dans la filière agricole, cette stratégie demeure une réponse privilégiée pour faire face aux vulnérabilités liées au changement climatique (Mushagalusa *et al*. 2021 ; Diouf *et al.* 2014 ; Dugué *et al.* 2012). Cette perspective est soit offerte par le changement de variétés de cultures, soit par la polyculture. Elle permet de fertiliser les sols des espaces culturaux en manque de jachère et garantit des revenus sécurisés aux producteurs (Mushagalusa *et al*. 2021).

Tableau 11 : Stratégies d'adaptation des UPI agricoles face aux effets de la COVID-10

Stratégies d'adaptation	**Fréquence de citations en %**
Arrêt momentané de l'activité	3,4
Réduction des charges	5,1
Sollicitation d'aides	10,3
Renforcement de proximité avec le client	10,3
Contracter un prêt	24,1
Diversification des produits	46,5

Source : ANSD, 2020 Calcul : Badiane *et al.*, 2021

Secondairement, les responsables des unités de production informelles agricoles ont recours au prêt (24 % des citations) pour maintenir leurs activités. Il faut préciser que l'emprunt, surtout auprès des banques classiques, est assez subsidiaire pour le secteur informel. Cela s'expliquerait par le caractère important de l'autofinancement pour l'accumulation du capital des unités de production informelles (Nkenda *et al.*, 2007). Cette tendance est encore remarquée avec le développement de mutuelles au sein des organisations de producteurs agricoles. Ces dernières assurent exclusivement pour ce secteur 10,4 pour cent du financement du capital des unités de production informelles en zone urbaine en République démocratique du Congo (*ibid.*).

Pour les autres stratégies adoptées par les responsables des UPI du secteur agricole, il y a le renforcement de la proximité client et la sollicitation d'aides (10 % des citations pour chacun). En outre, la réduction des charges et l'arrêt momentané de l'activité sont mis en œuvre pour respectivement 5,1 pour cent et 3,4 pour cent. Ces deux dernières stratégies, auxquelles les entrepreneurs font moins recours, demeurent, selon Sene (2021), efficaces pour parer « la baisse des recettes. Mais la conséquence d'une telle option, c'est bien évidemment la mise au chômage des travailleurs jadis employés par ces entreprises. » Toutefois, les stratégies d'adaptation précitées et fournies par les données de l'ANSD rendent limitées les formes existantes de recours des entreprises informelles en situation de difficulté. La diversification, non pas des produits, mais des activités, a constitué, selon nombre de recherches, une alternative favorable pour des activités agricoles. Ainsi, Tandjigora (2021) a montré que plus le revenu non agricole est important, plus intéressante est sa contribution aux ressources des agriculteurs, tant que ces revenus non agricoles ne dépassent pas largement les ressources des actifs agricoles.

Conclusion

Cet article étudie l'effet de la crise de la Covid-19 sur les entreprises informelles du secteur agricole sénégalais. Il a en effet permis de renseigner les canaux par lesquels la pandémie a affecté les UPI. Il en ressort principalement que les mesures restrictives liées à la pandémie sont la cause de la fermeture définitive ou temporaire des unités. À cela s'ajoutent les difficultés d'approvisionnement en matières premières, mais aussi celles liées à l'écoulement des produits. Cela affecte négativement le chiffre d'affaires de ces entrepreneurs. Cette situation se traduit par une baisse de la production d'au moins 25 pour cent pour 95,1 pour cent des répondants. De même, une proportion égale à ce dernier taux est obtenue pour les prix.

Par conséquent, l'évolution à la baisse du personnel, exclusivement des hommes, est notée pour 10 pour cent des UPI. Elle traduit en partie les stratégies d'adaptation adoptées par les responsables de ces entreprises pour faire face aux effets de la crise. Dans ce sillage, la diversification des produits a constitué pour 46,5 pour cent des unités une approche salutaire.

Il serait par ailleurs intéressant de documenter les effets de la crise de la Covid-19 sur les entreprises des autres secteurs d'activité, notamment les activités non agricoles. Ces dernières ont connu les deux dernières décennies un développement important dans les zones rurales du Sénégal, tout en étant confrontées aux défis du changement climatique.

Note

1. ANSD, *Enquête régionale intégrée sur l'emploi et le secteur informel*, 2017.

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