

The State and Future of Africa's Intellectual Capital: Examining Job Skilling among the Youth

Dr. John Momanyi Ongubo

Senior Lecturer, Postgraduate & Research, Mogadishu University, Somalia

DOI: <https://doi.org/10.51244/IJRSI.2026.1308000195>

Received: 24 August 2026; Accepted: 28 August 2026; Published: 15 September 2026

ABSTRACT

This paper examines intellectual capital in Africa amid ongoing socio-economic transformations and the widening skills gap across the continent. Disruptions such as economic shifts, technological advancements, and changing workforce demands continue to reshape daily life and employment opportunities. Their impact is felt unevenly, with Africa's youth—who make up the majority of the population—facing significant challenges in acquiring the skills needed for today's job market. The study explores the role of job skilling in equipping young people with competencies that strengthen Africa's intellectual capital. Using desktop research, it reviews secondary data and existing literature on youth employment and workforce development. Findings highlight that the evolving global economy places renewed emphasis on preparing youth with relevant skills to meet labor market demands. These skills are vital not only for securing employment but also for fostering innovation, adaptability, and problem-solving in response to emerging crises and disruptions. The rapid pace of technological progress underscores the importance of continuous education, training, and capacity development, as employers increasingly seek specialized competencies. In this dynamic socio-economic landscape, empowering young people with the right skills is essential for resilience and growth. By doing so, Africa's youth can navigate challenges more effectively and play a proactive role in shaping the future workforce.

Keywords: Intellectual Capital, Job Skilling, Youth, Africa, Workforce Development

INTRODUCTION

This paper focuses on intellectual capital in Africa within the context of the continent's evolving economic and technological landscape. It narrows its scope to job-skilling among the youth and examines how this contributes to the development and sustainability of Africa's intellectual resources. The discussion aggregates evidence from current literature, reports, and indices to provide a holistic analysis of the key constructs under examination.

Contextual Background

Africa's intellectual capital continues to receive close attention from both the scholarly world and development partners such as the World Bank, the International Labour Organization (ILO), United Nations agencies, the International Monetary Fund (IMF), among others. The growing body of literature reflects increasing interest in Africa's intellectual capital (Tsouli & Elabbadi, 2018; Sgro, Ciambotti, Bontis & Ayiku, 2020; World Bank, 2021a; Blakeney & Mengistie, 2021), particularly due to its critical role in advancing the sustainable development agenda.

Intellectual capital encompasses information, knowledge, intellectual property, and experiences that contribute to wealth creation. It includes intangible resources, skills, expertise, and intellectual assets available to organizations and societies, which can be leveraged to create social, economic, and environmental value (Dumay, 2016). The demand for this type of capital is driven by rapid and dynamic global technological advancements, which necessitate continuous education, training, and job-skilling for workers across different

sectors of the economy. Empirical evidence underscores the importance of intellectual capital, with Sgro et al. (2020) identifying it as a key driver of economic growth.

To enhance and expand intellectual capital, various state and non-state actors have initiated capacity-building measures. For instance, the World Bank (2021) has set ambitious human capital targets for Africa through its

Human Capital Plan for Africa, launched in 2019. This plan includes goals such as reducing child mortality rates, improving learning outcomes among students, advancing social protection policies, promoting women's empowerment, and enhancing sanitation practices.

Additionally, technological innovations and digital transformation are reshaping Africa's skills development landscape. In Nigeria's Edo State, education initiatives have been adapted to provide students with interactive quizzes and self-study packets via radio, mobile phones, and digital platforms. Sierra Leone has implemented hybrid learning systems to ensure inclusivity in education, while Cameroon has embraced 3D printing to produce critical resources through the Africa Centres of Excellence projects. Emerging technologies—including artificial intelligence, blockchain, and machine learning—offer vast opportunities to drive innovation and economic growth. However, capitalizing on these advancements requires equipping Africa's youth with the necessary skills and knowledge, as they constitute a significant portion of the population (World Bank, 2020).

The evolving socio-economic landscape poses both challenges and opportunities for intellectual capital development, particularly in relation to job skilling among young people. Documented evidence highlights various obstacles, such as disruptions in education, economic instability, rising unemployment rates, and prolonged school-to-work transition periods ([OECD], 2020a; OECD, 2020b; Lone & Ahmad, 2020). Vulnerable youth, in particular, face risks related to employment prospects, access to education, mental health stability, and financial security. As Africa navigates these structural challenges, youth empowerment through education, skills training, and capacity-building programs remains essential for fostering resilience and preparing future generations to contribute meaningfully to economic and social transformation (ILO, 2020a).

Job Skilling Discrepancies

Youth with requisite skills in information and communication technology (ICT) will find it easier to access new market opportunities and adapt to evolving labor market demands. However, a significant skills gap remains, particularly in job-specific competencies. Addressing disparities in education and vocational training while ensuring equitable access for all is essential to fostering sustainable development. Efforts to bridge these gaps align with Sustainable Development Goal (SDG) No. 4, which aims to ensure inclusive and equitable quality education and promote lifelong learning opportunities for all (ILO, 2020c).

METHODOLOGY

The paper is based on desktop research where relevant data and literature was sourced from secondary sources. The data used included reports from the World Bank, International Labour Organization, United Nations, Organization for Economic Co-operation and development, relevant publications in journals, books, conferences and working papers. This allowed a systematic review and analysis based on the main construct of the study to reveal the current state of intellectual property in Africa and what implications exist for the future. Aggregated data from the secondary sources provided statistical evidence that supports the findings of the paper.

Diagnosis of Job Skilling in Africa

According to the World Bank (2021b), skills have a strong influence on where people work and how much they are paid. Across Africa, the rapid increase in school participation and educational attainment has often come at the cost of quality, contributing significantly to a shortfall in the available skills for productive employment. This has resulted in a persistent skills gap in many African societies.

The International Labour Organization (ILO) has examined how skills development impacts economic opportunities for young people, identifying measures to address youth unemployment and bridge the job-skilling gap (ILO, 2020a). In light of Africa's evolving labor market, urgent, large-scale employment policy initiatives are required to equip young people with the competencies needed to thrive in an increasingly dynamic economic environment. These measures aim to mitigate long-term structural challenges affecting youth employment prospects.

Rising youth unemployment remains a significant issue globally, with Africa facing particular concerns regarding the growing number of young people classified as not in employment, education, or training (NEET). Pre-pandemic data from the ILO indicates a concerning trend, with NEET numbers rising from 259 million youth in 2016 to 267 million in 2019, and projections reaching approximately 273 million by 2021 (ILO, 2020b). This upward trend underscores the urgency of addressing educational and vocational training gaps.

The Organization for Economic Cooperation and Development (OECD) has raised concerns about intergenerational inequalities and the role of young people in strengthening societal resilience (OECD, 2020c). To ensure youth are actively involved in shaping economic development, governments must anticipate the impact of training and employment policies across different age groups. Effective governance mechanisms are crucial in facilitating skills development, fostering innovation, and creating sustainable job opportunities that empower young people to contribute meaningfully to Africa's socio-economic transformation.

TVET Institutions and Job-Skilling

The education and training gap among the youth that is meant to equip them with adequate skills that will ensure recovery and resilience will not be filled without closely working with Technical and Vocational Training [TVET] institution. The barriers to access to the world of work can also be reduced through TVET. TVET institutions also have the capacity to offer skills development opportunities for people who are low skilled or who are under-employed or youths not in education, employment and training (ILO, 2020b).

Addressing Discrepancies: Projections and Opportunities

UNESCO's and UNEVOC Call for the Future of Youth Job-Skills

The United Nations Educational, Scientific and Cultural Organization (UNESCO) and the International Centre for Technical and Vocational Education and Training (UNEVOC) have continuously emphasized the importance of equipping young people with quality education and training opportunities. In various global youth skills conferences, UNESCO and UNEVOC have urged countries to prioritize access to inclusive, flexible, and innovative learning systems to ensure that young people are prepared for evolving workforce demands. This can be achieved through incorporating technological advancements in Technical and Vocational Education and Training (TVET) institutions, which will enhance distance learning platforms and adaptable learning pathways (UNESCO & UNEVOC, 2020). The concept of blended learning, which combines digital and in-person training, existed prior to these discussions, as noted by Latchem (2017). Scaling up such models will ensure continuous job skilling while also allowing essential workers to upskill at their workplaces and displaced workers to reskill for emerging job opportunities.

UN bodies also recognize that TVET institutions face unique challenges beyond those encountered by other education sectors, particularly due to the practical nature of vocational training. The development of hands-on skills often requires industry-based training or workshop settings, making full digitalization difficult. Thus, blended approaches that integrate theoretical learning with real-world application remain crucial.

Furthermore, UNESCO and UNEVOC stress the importance of identifying future skills needs and ensuring responsiveness to short-, medium-, and long-term labor market shifts. This demands that key stakeholders anticipate emerging trends in workforce demands and implement forward-thinking skills development strategies. Addressing challenges such as youth unemployment, the transition to greener economies, and the impact of climate change necessitates proactive interventions in education and workforce planning (UNESCO

& UNEVOC, 2020). Strengthening Africa's intellectual capital through adaptive and future-ready skill development programs will enable young people to thrive in an increasingly dynamic and technology-driven global economy.

Strategic Phases for Advancing TVET Education in Africa

Technical and vocational training institutions play a crucial role in equipping young people with the skills necessary for economic growth and workforce adaptability. Recognizing this, UNESCO and UNEVOC have outlined strategic phases that institutions can adopt to enhance their training programs (UNESCO & UNEVOC, 2020).

The first phase emphasizes a swift transition to remote learning and teaching, utilizing available technological tools such as Zoom, WhatsApp, Learning Management Systems (LMS), radio, television, and YouTube. These platforms provide flexible and accessible learning opportunities, ensuring that students can continue developing their skills despite geographical or infrastructural limitations.

Building capacity and strengthening emergency solutions mark the second phase. This involves establishing technological infrastructure, training staff, and promoting innovative approaches to digital learning. Institutions must focus on ensuring equitable access to education, fostering online communities for collaboration, and creating interactive spaces for knowledge-sharing (UNESCO & UNEVOC, 2020).

The third phase highlights the need for hybrid learning models that combine both in-person and online instruction. As workforce demands evolve, TVET institutions must integrate blended learning approaches that allow students to gain practical experience alongside digital education. This is particularly important in vocational training, where hands-on learning remains critical (Latchem, 2017). Hybrid models enable students to meet industry expectations while adapting to a rapidly changing labor market.

The final phase involves a strategic transition toward a more sustainable educational framework. Institutions must prioritize scaling up training programs, enhancing quality standards, improving accessibility, and reducing costs. By leveraging digital tools and aligning learning models with labor market needs, TVET institutions can empower young people with future-ready skills that position them for success in Africa's dynamic economy (UNESCO & UNEVOC, 2020).

Implementing these phases will ensure that youth receive the necessary training to bridge skills gaps and contribute meaningfully to economic development. Strengthening Africa's intellectual capital through adaptable learning strategies will foster resilience and innovation, paving the way for a more inclusive and skill-driven workforce.

Investing in Human Capital: Strengthening Africa's Workforce for the Future

The World Bank has implemented various initiatives to enhance workforce capabilities across societies, with a strong focus on Africa's human capital development. One such initiative is the African Human Capital Plan, launched in 2019, which seeks to drive investments and reforms aimed at improving skills, knowledge, and resilience among populations (World Bank, 2020). Strengthening human capital is recognized as an essential factor in ensuring that individuals—particularly youth—can reach their full potential, secure meaningful employment, and contribute to economic transformation.

In an era of rapid technological advancement, investments in skills such as artificial intelligence, blockchain, and machine learning are becoming increasingly critical. These innovations not only drive digital transformation but also fuel the delivery of services and economic growth across Africa (World Bank, 2020). Additionally, addressing disparities in education and vocational training ensures that young people are equipped with the competencies needed to navigate modern labour market demands.

By fostering a culture of continuous learning and skill development, African economies can build a workforce capable of responding to industry shifts and technological progress. Sustainable investments in education,

digital literacy, and workforce training remain at the heart of Africa's intellectual capital growth, ensuring that future generations are empowered to contribute meaningfully to development and innovation.

Innovation Opportunities Driving Africa's Technological Advancement

Across Africa, technological innovation continues to accelerate, transforming various sectors and driving economic growth. An analysis by the World Health Organization (WHO) finds that more than 120 health technology innovations have been piloted and adopted across the continent. These innovations span diverse areas such as digital health solutions, surveillance systems, community engagement platforms, advanced laboratory technologies, and disease prevention mechanisms. ICT-driven technological advancements account for 57.8% of these innovations, followed by 3D printing at 25% and robotics at 10.9% (Udo et al., 2024; World Bank, 2024; Carnegie Endowment for International Peace, 2024).

A deeper analysis of ICT-based solutions highlights a growing trend in digital transformation across African nations. South Africa has deployed WhatsApp chatbots for public health communication, Angola has developed tools for self-diagnostics, Ghana has leveraged mobile applications for contact tracing, and Nigeria has introduced digital platforms for mobile health nutrition. The distribution of innovations varies across regions, with South Africa leading at 13%, followed by Kenya (10%), Nigeria (8%), and Rwanda (6%) (African Union, 2025; AUDA-NEPAD, 2025; World Bank, 2024).

These technological advancements underscore the role of innovation, ingenuity, and entrepreneurship in driving Africa's economic resilience. Equipping youth with the skills necessary to harness emerging technologies is essential—not just for responding to crises, but for enabling long-term innovation ecosystems that support economic transformation. As the World Intellectual Property Organization notes, economies with stronger investment in intellectual capital tend to experience higher rates of innovation and competitiveness. In sub-Saharan Africa, which hosts many high-performing emerging economies, investments in technical skills, research, and workforce training remain critical for fostering innovation (Rambe & Hinson, 2024; Lambert & Deyganto, 2024; Chakuzira et al., 2024).

By strengthening education and vocational training in areas such as artificial intelligence, robotics, blockchain, and machine learning, Africa can position itself at the forefront of global technological advancements. These investments not only contribute to economic development but also ensure that future generations can leverage cutting-edge technologies to drive sustainable progress across industries.

Intellectual Property Laws and Job Creation

Burgeoning literature indicates the attention that intellectual property in Africa has attracted (Blankeney & Mengistie, 2021; Adebola, 2020; Sibanda & Straus, 2020). Intellectual property laws are critical to job creation. For instance, in Africa, the Agreement that established the African Continental Free Trade Area (AfCFTA) brings together the 55 Africa countries to form the world's largest free trade area based on the number of countries participating in it. This agreement covers intellectual property rights, investments, goods and services among other areas. The Phase II negotiations of the AfCFTA agreements present many opportunities especially when it comes to intellectual property (IP). The AfCFTA prescribes cooperation on intellectual property rights and competition policies in a negotiation anchored on attainment of a single continental market (Mbatia & Vilita, 2021). For instance, an IP protocol is expected to act as an accelerator for Micro, Small and Medium Enterprises (MSMEs) which account for more than 80 percent of Africa's employment and contribute up to 50 percent of its Gross Domestic Product (GDP). (Mbatia & Vilita, 2021).

IMF's Caution

The International Monetary Fund cautions that merely improving the intellectual capital does not imply improved levels of development. Rather, such improvements must be accompanied with better governance. A high human capital by itself is not enough; based on IMF's analysis which indicates that countries become rich only when governance equally improves (IMF, 2020). While growth in human capital is critical, it cannot work in the absence of better governance systems. Africa, faces this unique situation, with calls for better

governance among countries. For instance, improving job skills among the youth in Africa must be accompanied with better systems of governance.

WIPO and the Sustainability Agenda

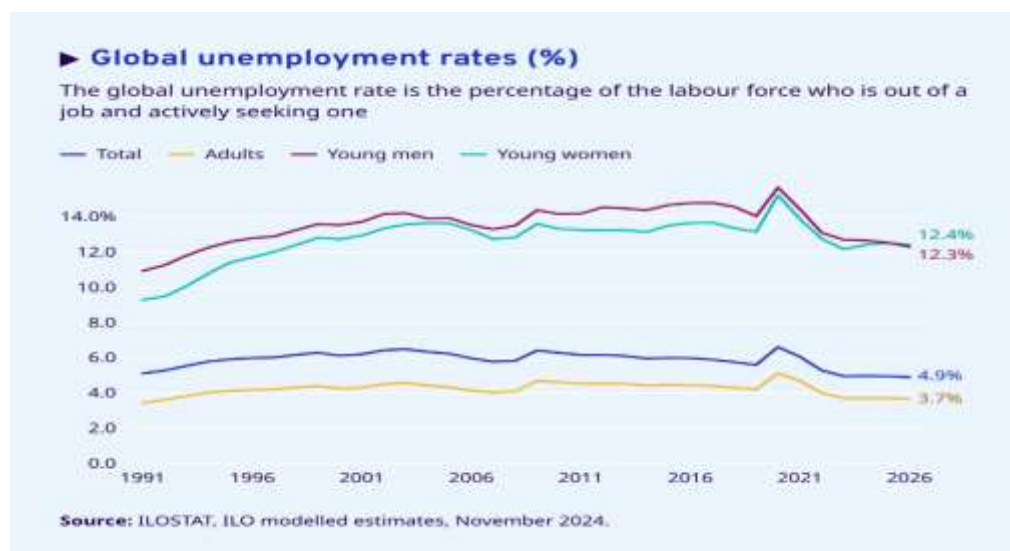
The United Nations having already spelt out the sustainable development goals (SDGs) continues to make universal calls to actions aimed at ending poverty, protecting the planet and ensuring peace and prosperity by all by 2030 (United Nations [UN], 2021). In this regard, the World Intellectual property organization cannot evade the sustainability agenda in its programmes. However, Bannerman (2020) laments that an adequate age-

nda for the sustainability agenda is not likely to be developed at WIPO. Rather, it must come from outside. This ‘abandonment’ by WIPO necessitates for remedies from other institutions. For instance, the ILO (2020c) calls for investments in young people skills and education as a critical tool to achieving sustainable development goals. High-quality vocational education and training equip young persons with skills for the labour market and addresses skill requirements for workplaces (OECD, 2016). Further, the report by ILO reveals that skilled persons such as welders, electricians and mechanics among other technical roles are among the hardest to fill probably because of low levels of enrolment in vocational programme trainings.

A recent report by ILO (2025) documents systemic barriers to decent jobs that leave many young workers behind, even as overall unemployment trends improve which is summarized in Figure 1. According to the ILO,

“Global unemployment remains below historic averages. However, the global unemployment rate hides large regional and country variations and fails to account for significant decent work deficits, especially among vulnerable groups” (ILO, 2025)

Figure 1: Global Unemployment Rates



Source: International Labour Organization [ILO], (2025). *World Employment and Social Outlook: Trends 2025 in figures*.

ANALYSIS AND RECOMMENDATIONS

The topic of youth unemployment continues to receive close attention. Latest data from the ILO (2020c) indicates high levels of unemployment among young men and women. In Africa, Northern part of the continent has the highest levels of unemployment and in the Arab States which have about 2.2 and 1.7 times the global rate of unemployment. This phenomenon has been recorded in these regions for nearly three decades now, indicating that there are structural barriers that are preventing young people from these regions from engaging in the labour force (UNDESA, 2018). In sub-Saharan Africa, youth unemployment is still at high rates (BLS, 2019).

These calls for a raft of measures to reduce these rates. Job skilling will develop higher intellectual capital and equip the young people with skills. These skills can enhance their demand in the market place that is continuously changing (Muro, Maxim & Whiton, 2019).

Governments Policy Intervention Measures

The OECD (2020c) in its policy recommendations to governments suggests various measures which include:

- a) Governments need to update their national youth strategies in close collaboration with various youth stakeholders in order to translate political commitments into plans that are actionable.
- b) Gathering aggregate data on the impact the pandemic has caused on various age groups through partnering with national research and statistical institutes.
- c) Policy measures that are aimed at encouraging age diversity in state institutions and public consultations.
- d) Using current youth mobilisation in addressing the crisis through the existing mechanisms, platforms and tools as a way of building resilience against futures disasters and shocks and finally;
- e) Providing policies and services that are targeted at vulnerable youth populations (OECD, 2020c).

CONCLUSION

This paper has examined intellectual capital in Africa, with a particular focus on job skilling among the youth in the context of the continent's evolving economic and technological landscape. The need to equip young people with relevant skills and technological competencies has never been more critical. These skills are essential for their day-to-day participation in the labor market and for fostering long-term innovation that drives economic transformation. Investing in youth job skilling ensures that they are prepared not only for immediate workforce demands but also for future challenges that require adaptability and creativity.

As Africa continues to navigate structural changes in employment, education, and technological advancements, it is crucial to implement sufficient and effective intervention measures, including policies, programs, and legal frameworks that support intellectual capital growth. Rapid global advancements in technology demand continuous training, education, and capacity development, with employers increasingly prioritizing workers who possess specialized competencies in emerging fields such as digital technology, artificial intelligence, and advanced manufacturing.

Future studies can conduct empirical analyses using data to assess the state of intellectual capital in Africa, examining the effectiveness of job skilling initiatives and identifying areas for further investment. Understanding the link between workforce training, innovation, and economic growth will be essential in shaping sustainable development strategies that empower Africa's youth and enhance the continent's competitive edge.

REFERENCES

1. Adebola, T. (2020). Africa and intellectual property rights for plant varieties. *obo* in International Law. <https://doi.org/10.1093/OBO/9780199796953-0210>
2. African Union. (2025). *African digital transformation strategies: Trends and impact*. AU Publications.
3. AUDA-NEPAD. (2025). *Harnessing technology for sustainable development in Africa*. AUDA-NEPAD.
4. Bannerman, S. (2020). The World Intellectual Property Organization and the sustainable development agenda. *Futures*, 122. <https://doi.org/10.1016/j.futures.2020.102586>
5. Blakeney, M., & Mengistie, G. (2021). Intellectual property policy formulation in Africa. *Queen Mary Journal of Intellectual Property*, 11(1), 98-113. <https://doi.org/10.4337/qmjip.2021.01.06>

6. Carnegie Endowment for International Peace. (2024). *Emerging technology adoption in Africa: An overview*. Carnegie Endowment.
7. Chakuzira, W., Okoche, J., & Mkansi, M. (2024). *Innovation ecosystems and economic resilience in sub-Saharan Africa*. African Journal of Economic Studies, 12(2), 89-105.
8. Dumay, J. (2016). A critical reflection on the future of intellectual capital: from reporting to discourse. *Journal of Intellectual Capital*, 17, 168-184.
9. ILO Monitor: COVID-19 and the world of work. Fourth edition:
https://www.ilo.org/wcmstp5/groups/public/---dgreports/---dcomm/documents/briefingnote/wcms_745963.pdf
10. International Labour Organization. (2020a). *Skills for a resilient youth in the era of COVID-19 and beyond*. International Labour Organization. Retrieved from https://www.ilo.org/beijing/information-resources/public-information/press-releases/WCMS_751437/lang--en/index.htm
11. International Labour Organization. (2020b). *World Youth Skills Day 2020*. International labour organization. Available at https://www.skillsforemployment.org/KSP/en/eventsnew/EDMSP1_261827
12. International Labour Organization. (2020c). *Global Employment Trends for Youth 2020: Technology and future of jobs*. ILO. Available at https://www.ilo.org/wcmstp5/groups/public/---dgreports/---dcomm/---publ/documents/publication/wcms_737648.pdf
13. International Labour Organization. (2025). *World Employment and Social Outlook Trends 2025*. International Labour Organization. https://www.ilo.org/sites/default/files/2025-01/WESO25_Trends_Report_EN.pdf
14. International Monetary Fund. (2020). *Lack of human capital is holding back Latin America's growth*. International Monetary Fund. Available at <https://www.imf.org/en/News/Articles/2020/08/12/na081320-lack-of-human-capital-is-holding-back-latin-americas-growth>
15. Lambert, C., & Deyganto, K. (2024). *Intellectual property investment and competitiveness in Africa*. Journal of Innovation Policy, 15(3), 134-152.
16. Latchem, C. (2017). *Using ICTs and blended learning in transforming TVET*. Paris, UNESCO, and Vancouver, COL. Retrieved from <http://oasis.col.org/handle/11599/2718>
17. Lone, A. S., & Ahmad, A. (2020). Covid-19 pandemic- an African perspective. *Emerging Microbes & Infections*, 9(1), 1300-1308. Doi:[10.1080/22221751.2020.1775132](https://doi.org/10.1080/22221751.2020.1775132)
18. Mbatia, L., & Vilita, B. (2021). AfCFTA: How intellectual property laws can help create jobs. *Africa Renewal*. Available at un.org/africarenewal/magazine/january-2021/afcfta-how-intellectual-property-rights-can-help-create-jobs
19. Muro, M., Maxim, R., & Whiton, J. (2019). *Automation and artificial intelligence: How machines are affecting people and places* (Washington, DC, Brookings Institution).
20. Organisation for Economic Co-operation and Development. (2016). *Society at a Glance 2016: OECD Social Indicators* (Paris).
21. Organization for Economic Co-operation and Development (2020a). *Schooling disrupted, schooling rethought: How the Covid-19 pandemic is changing education*, https://read.oecd-ilibrary.org/view/?ref=133_133390-1rtuknc0hi&title=Schooling-disrupted-schooling-rethought-How-the-Covid-19-pandemic-is-changing-education.
22. Organization for Economic Co-operation and Development (2020b). *OECD Economic Outlook*, OECD Publishing, Paris, <https://doi.org/10.1787/0d1d1e2e-en>.
23. Organization for Economic Co-operation and Development. (2020c). *Youth and COVID-19: Response, recovery and resilience*. OECD Policy Responses to Coronavirus (COVID-19). OECD. Available at <https://www.oecd.org/coronavirus/policy-responses/youth-and-covid-19-response-recovery-and-resilience-c40e61c6/>
24. Rambe, P., & Hinson, R. (2024). *Entrepreneurial digitalization and economic growth in Africa*. Journal of Digital Economy, 18(4), 267-289.
25. Reliefweb. (2020). *COVID-19 spurs health innovations in Africa*. Available at <https://reliefweb.int/report/world/covid-19-spurs-health-innovation-africa>
26. Sgro, F., Ciambotti, G., Bontis, N., & Ayiku, A. (2020). Intellectual capital in East and West African social enterprises. *The Journal of Corporate Transformation*, 27(4), 332-344.

doi.org/10.1002/kpm.1638

27. Sibanda, M., & Straus, J. (2020). The Intellectual Property System as a Catalyst for Socio-Economic Development for Middle Income Countries – Lessons from South Africa. *European Intellectual Property Review*, 42(11), 738-750.
28. Tsouli, D., Elabbadi, B. (2018). Intellectual capital of Africa: Comparison of five most competitive countries. *Business and Economic Research*, 8(2), 71-84. Doi:10.5296/ber.v8i2.12835
29. TVET and skills development in the time of Covid-19 (Paul Comyn, Senior Skills Specialist, ILO, World Education Blog):
<https://gemreportunesco.wordpress.com/2020/04/28/tvet-andskills-development-in-the-time-of-covid-19/#more-12897>
30. Udo, M., et al. (2024). *Health technology innovations across Africa: A critical review*. Global Health Research Journal, 22(1), 45-78.
31. United Nations (2021). *The 17 goals: Sustainable Development goals*. New York, NY: United Nations. Available at <https://sdgs.un.org/goals>
32. United Nations Department of Economic and Social Affairs. (2016). *Youth and migration, Youth Issue Briefs* (New York).
33. United Nations Educational, Scientific and Cultural Organization & International Centre for Technical and Vocational Education and Training. (2020). *Virtual conference on skills for a resilient youth. Virtual conference report*. UNESCO & UNEVOC. Available at https://unevoc.unesco.org/pub/vc_synthesis_29.pdf
34. United States Bureau of Labor Statistics (BLS). 2019. *Employment projections*. Available at: www.bls.gov/emp/
35. World Bank. (2020). *Investing in Africa's people yields impact, strengthens efforts to beat pandemic*. World Bank. Available at <https://www.worldbank.org/en/news/immersive-story/2020/06/17/investing-in-africas-people-yields-impact-strengthens-efforts-to-beat-pandemic>
36. World Bank. (2021a). *World Bank Africa Human Capital Plan*. World Bank. Available at <https://www.worldbank.org/en/region/afr/publication/africa-human-capital-plan>
37. World Bank. (2021b). *Youth employment in Sub-Saharan Africa*. World Bank. Available at <https://www.worldbank.org/en/programs/africa-regional-studies/publication/youth-employment-in-sub-saharan-africa>
38. World Bank. (2024). *ICT development and emerging technology trends in Africa*. World Bank Publications.