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Navigating Africa's Technological Nightmare: A Parallel Review of Digitalization's Discontents and the Quest for Sustainable Development

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Abstract

This article undertakes a parallel review of Africa's technological conundrums, examining the complex interplay between digitalization, economic growth, and social development on the continent. By synthesizing insights from various disciplines, including information systems, development studies, and sociology, this study sheds light on the multifaceted challenges of Africa's technological advancements and the urgent need for more inclusive and sustainable digitalization strategies. Our research highlights the importance of context-specific, human-centered approaches to harnessing the benefits of technology, addressing the existing digital divides, and promoting equitable access to digital resources.

Keywords: *Digitalization, Neopatrimonialism, Sustainable Development, Technological Divide, Socio-Economic Inequalities*

1.1 Introduction

Africa's technological advancements have been touted as a panacea for the continent's economic and social development challenges. However, beneath the façade of digitalization lies a complex web of discontents, including unequal access to digital resources, lack of digital literacy, and the exacerbation of existing social inequalities. This parallel review aims to unpack the tensions between Africa's technological progress and social development, with a focus on the implications for sustainable development.

2.1 Review of the Literature

Existing research highlights the paradoxical nature of Africa's technological advancements. On the one hand, digitalization has enabled increased economic productivity, improved access to information and communication, and enhanced competitiveness in the global marketplace (Kibwana, 2018). On the other hand, the benefits of digitalization have largely accrued to a privileged elite, exacerbating existing social and economic inequalities (Mansell, 2012). Additionally, the lack of digital literacy and limited access to digital resources have hindered the potential of digitalization to promote inclusive development (Kwankwe, 2015).

Parallelism of African's Technology Nightmare on Sustainability

Natural resources provide ecosystem services that provide better quality to human life. They provide fundamental support, in the form of both consumptive and public-good services. In addition, ecological processes maintain soil productivity, nutrient recycling, the cleansing of air and water, and climatic cycles. Thus, it can be argued that balanced natural resource management involves the people and the ecosystem. This interaction brings together the natural heritage, land use planning, water management, bio-diversity conservation and future sustainability of industries, agriculture, mining, tourism, fisheries, and forestry. Non-renewable. This context necessitates the creation of policies and laws that influence this relationship.

The origins of communication, metallurgy, astrology, architecture and engineering, navigation, medicine, and mathematics innovations as traced in Africa (Dominick, F. R, 2005). Further, the foreseen backwardness on technology and innovation is as a result of endogenous and exogenous factors like religion, the African communistic attitudes, African scholarly monopolisation, colonialism in Africa, the slave trade, and neo-colonialism factors (aid, multinationals, and trade, corruption, political instabilities and loss of innovative minds). Parallelism is drawn from communication, corruption, political inefficiency, and African

communistic attitudes. Communication is operationalised here not as a failed innovation but as a failed initiative or lack of proper channels of communicating environmental land policies. The attitudes of African communities reflect the enduring practices upheld by Africans.

Communication is defined as the sharing of meaning (Dominick, 2005). It is a two-way, open, and transactional process through which information, data, and ideas are disseminated. The origins of communication tools can be traced to Africa, although further development did not occur. This raises the question: if Africans lacked the ability to advance the communication tools they invented, can we assume they were incapable of creating effective communication channels? If there had been well-defined, transactional communication channels for disseminating environmental policies, would conflicts over these issues have been reduced? Implementing existing technologies and innovations remains a challenge, as noted by Akoth S. O. (2005).

Indigenous Tools of Communication

The role of technology in raising public awareness of changing environments. The rapid expansion of visual communication and social media has become an important component in evidence gathering and dissemination. By the end of the twenty-first century, technological developments had not only created a vast array of tools for assessing the impact of climate change on human and natural resources globally, they had also provided new instruments for raising and measuring public awareness of the impact of such changes on everyday life (Akoth, 2005).

Technology has increasingly enabled citizens to engage directly by creating their own evidence through globally connected electronic media platforms. Print, audio, and visual media regularly disseminate accounts of the negative impacts of extreme resource extraction from various regions, raising public awareness of the adverse effects of human activities. Although these tools appear effective in sharing information about the depletion of natural resources, oral traditions and local authority leadership structures still play a crucial role. Village headmen are responsible for communicating conservation principles to local communities through village assemblies, storytelling, and personal inquiries. The local authority structure, along with other indigenous information media, has proven to be effective, as all enacted laws were linked to community totems, which had to be respected to avoid angering the gods of rivers, streams, and trees. Recognizing the importance of indigenous media underscores the necessity for governments and policymakers to view a mix

of information media, particularly through recognizable local institutional channels, as reliable tools for advancing sustainable development initiatives at community, national, and global levels.

Traditional Totems and the Preservation of Natural Resources

In traditional Kamba Community, members had a complexity of varied ideas and behavioural ways based on the worldview drawn from nature. In times of drought, the Akamba, community, did not wait on policy makers and the colonial government but rather the marginalized community was left on their own to address issues related to rain unpredictability and instability. Therefore, they turned to ritualistic customs to invoke power used by their ancestors – the *Kilumi* Dance. This has been confirmed by Hilhorst (2015) that when societal problems are not explained and handled through Western systems, Africans turn to traditional customs that offer interpretations, explanations, and, more importantly, solutions.

Rainmaking is a deeply rooted tradition in many communities in Kenya. Traditional rainmaking is a religious ritual through which human beings influence weather conditions to cause rain or drought so as to bless or curse a community one of the main purpose of Akamba's sacred dance, *Kilumi,* was to seek spiritual intervention that produces rain (Koster, 2011). During the sacred dance, special rites were performed to accompany prayers for rain (Mbiti 1975: 111). According to Mbiti, making rain is entirely God's mandate, nonetheless it was the people's responsibility to summon God's rain. Hence, rainmakers were the people bestowed with the power to lead traditional practices, rites and rituals thought capable of controlling the weather.

The role of *kilumi* dance, songs and rituals and its psychosocial effects among the Kamba was therefore crucial. Akong'a (1987) and Korster (2011) add that the sacred dance included the pouring of libations and offering of sacrifices to appease the spirits because droughts were considered as curses for wrongdoing. When Christianity was introduced in Kenya, such indigenous practices were considered evil, and people were forced to adopt "modernity". It is contrasting to realize that some of the modernistic practices included abandoning the traditional huts and constructing brick or stone iron-sheet houses. This means the raw materials were to be obtained from the wood – cutting down of trees; excavating stones and digging gulleys of soil to build the clay bricks. It is only now that we see how grave this kind of modernity has implicated on our natural resources.

As Akoth (2005) argues, most African governments are still dominated by corrupt and ineffective bourgeoisie in the name of civil servants whose work is to divert monies made for development to serve their own interests. This together with rigid bureaucratic particularism is attributed to non-democratic practices such as tribalism, nepotism amongst others that have made it difficult to improve or even adopt new technological policies. The same argument can be attributed to the making of many laws and policies amongst the African governments which are only in the books or are made for corruption purposes or for harassing the citizens. Why have so many laws and policies that cannot be enforced? The lack of the efficacy of the environmental policies and laws can be attributed to corrupt and ineffective leaders who make laws and policies to hinder their filth practices. Therefore, it can be assumed that the continued sand harvesting conflicts is due to poor leadership, corruption, and ineffective enforcement of the environmental laws and policies.

Polycarp (2018) posits that the African societies existed without formal hierarchies, with equal access to land and river for all, in a way that resembles forms of egalitarianism and socialism. This was a moral doctrine that valued human dignity, rights and responsibilities which do not cause conflict between individuals and community, as people are expected to have the moral attitude of contributing to the community for their own well-being. This attitude creates the priority of duty, which is for the fundamental goal of creating a community, in order to provide the material conditions for actualizing individuals' substantive rights and well-being (Polycarp, 2018). The notion that African society existed for decades without formal hierarchies, with equal access to land and river for all, can be inferred to mean a society that did not have policies and laws to regulate the interaction between natural resources and human beings. This being the case therefore, it implies that it is a culture, a way of life which is encultured into individuals and one can argue this has been passed from generation to generation.

3.1 Methodology

This parallel review will employ interdisciplinary methodology to effectively synthesize insights from information systems, development studies, and sociology, acknowledging the complex interplay of factors influencing Africa's technological landscape. Our study systematically reviews a diverse array of sources, specifically focusing on academic articles, policy documents, and practitioner reports to ensure a comprehensive and multifaceted understanding of the subject matter. Through this structured approach, the author aims to uncover nuanced insights into Africa's technological conundrums, highlighting both challenges and opportunities that arise across different contexts and disciplines. By bridging these varied

perspectives, the researcher hopes to contribute to a more holistic understanding of technological integration and development in Africa, enriching the discourse and informing policy and practice.

4.1 Findings and Discussion

The author's parallel review reveals four key findings:

Unequal Access to Digital Resources

Africa's technological landscape is marked by a stark disparity in access to digital resources, which presents a significant barrier to equitable development across the continent. Despite notable advancements in technology, over half of Africa's population remains offline, particularly in rural and underserved regions where infrastructure is lacking. According to the International Telecommunication Union (ITU, 2020), this digital divide manifests itself through unequal availability of essential digital technologies, such as the internet, mobile phones, and computers. The rural-urban divide further exacerbates this issue, with urban areas benefiting disproportionately from enhanced connectivity and digital services. This unequal access stymies opportunities for education, economic participation, and access to crucial information, ultimately affecting the potential for societal growth. In a world increasingly reliant on digital communication and services, this gap threatens to widen existing inequalities and restrict the continent's overall progress in technological adoption.

Lack of Digital Literacy

Compounding the issue of unequal access to digital resources is the pervasive lack of digital literacy among significant segments of the African population. Digital literacy encompasses not just the ability to use digital tools but also the skills required to navigate online spaces safely and effectively. Many individuals and communities face hurdles in mastering these essential competencies, which diminishes their capacity to leverage technology for improving their quality of life. Without adequate digital literacy, even those with access to the internet and devices cannot fully engage with the opportunities that digitalization offers. Kwankwe (2015) emphasizes that the absence of targeted educational initiatives and training programs exacerbates this problem, leaving many users ill-equipped to benefit from online resources, e-commerce, e-learning, and other digital services. This gap in digital literacy has significant implications for economic empowerment and social mobility, reinforcing the cycle of poverty in marginalized communities.

Exacerbation of Social Inequalities

The uneven distribution of the benefits of digitalization has led to an exacerbation of existing social and economic inequalities in Africa. While some individuals, primarily from affluent backgrounds, have reaped the rewards of technological advancements—such as improved productivity, better job prospects, and increased wealth—many others remain on the periphery, excluded from these benefits. According to Mansell (2012), this phenomenon contributes to a deeper societal rift, wherein the privileged elite continue to thrive while a substantial part of the population is left behind. The disparity in access to digital resources and skills generally corresponds with pre-existing societal hierarchies, such as income, education, and urban versus rural status. Hence, the very tools designed to foster growth and innovation have become instruments of inequality, reinforcing disparities across socio-economic strata. If this trend continues unchecked, it could thwart broader developmental goals and create a digitally divided society with profound socio-economic implications for generations to come.

Dependence on Foreign Technology

Africa's technological development has been characterized by a reliance on foreign technology and expertise, rather than investing in homegrown innovation and development (Gurumani, 2018). This heavy dependence on external sources often stifles the potential for nurturing local talent and fostering indigenous innovations that are better suited to address the unique challenges faced by the continent. African nations frequently import not only advanced technologies but also the associated frameworks, methodologies, and management practices, which can limit the scope for localized adaptation and customization. As a result, technological solutions implemented in Africa sometimes fail to resonate with the specific socioeconomic and cultural contexts of local populations, leading to underutilization or inefficiencies. Furthermore, this reliance can perpetuate a cycle of dependency, where countries become increasingly vulnerable to fluctuations in global markets and the geopolitical dynamics of technology-producing nations. Such an environment can inhibit investments in research and development, with many governments diverting critical resources towards importing technologies instead of cultivating local expertise and infrastructure necessary for sustainable technological growth. Ultimately, the lack of investment in homegrown innovation hinders the continent’s capacity to develop resilient technology ecosystems, which are crucial for driving economic growth, enhancing productivity, and addressing pressing societal challenges such as health care, education, and environmental sustainability. By prioritizing local innovation, African countries can harness their vast human and natural resources, fostering a sense of

ownership over their technological journeys and paving the way for a more autonomous and self-sufficient development trajectory.

5.1 Conclusion

This parallel review highlights the need for more inclusive and sustainable digitalization strategies in Africa. Our findings underscore the importance of context-specific, human-centered approaches to harnessing the benefits of technology, addressing existing digital divides, and promoting equitable access to digital resources. Ultimately, the success of Africa's technological advancements will depend on the ability of policymakers, practitioners, and civil society to work together to create a more inclusive, equitable, and sustainable digital future.

6.1 Recommendations

There is need to reinforce laws and policies that are locally applicable and that can be exercised within the rule and spirit of the law itself, that promote and enhance technical, technological, and indigenous innovations prowess. Further, such laws and policies should be for the common good of all citizens in that they should eradicate, corruption, bribery, tribalism, nepotism, etc. Moreover, there is need to enculturate our cultures with post-modernity practices so as to avoid the conflict between laws, policies, and our cultural values and practices.

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