

Extending AI governance to competition and energy policy.

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Key points

- ❖ The African experience offers a valuable case study for understanding how local contexts can inform and influence the development of global AI governance frameworks.
- ❖ Global AI governance frameworks should take into account the unique needs and challenges of different regions while also working towards shared principles and standards for the responsible and ethical use of AI technology worldwide.
- ❖ AI governance frameworks should prioritise inclusion and have mechanisms to identify and curtail anti-competitive behaviour.
- ❖ Frameworks should include policies that promote the provision of renewable energy and cost-effective, socially and gender-inclusive, sustainable, and just AI in Africa.

Introduction

A new age for artificial intelligence (AI) has begun with the recent public attention given to generative AI systems which exhibit the extraordinary capability to produce material like text, media, and software code. These new AI systems have a lot of potential for increased productivity, innovation, efficiency, and cost reduction in many sectors of the economy. However, they also raise significant issues concerning inequality, competition, and environmental sustainability in Africa. This policy brief draws upon several years of research on AI and environmental economics conducted by [Research ICT Africa](#) (RIA), a Pan-African, think tank focusing on digital data and AI policy, regulation, and governance.

The African experience can offer a valuable case study for how countries can align with universalist principles underlying global governance while ensuring that AI deployment meets local and regional needs and is informed by those conditions. Regulations can address specific challenges faced by different regions, and create an enabling policy environment for more equitable AI innovation and deployment. RIA's research aims to expand the range of considerations given to AI governance with

regard to the formulation of equitable, just, and economically sustainable policies. This kind of research is crucial to understanding what policy interventions may be useful to redress inequality amplified by advancing technologies, ensuring that economic competition and sustainable energy production have more just and equitable outcomes. It also understands AI as an emerging general-purpose technology that cuts across public and private sectors, and impacts the lives of citizens in ways that can cause untold damage unless there is careful regulation to enhance the benefits and mitigate the harms.

Background

AI is able to extract behavioural patterns used to predict future human choices from large [datasets](#). While data in and of itself has no value, the control over these datasets and the development of algorithms create unprecedented opportunities to claim significant market power. In a digital society, data and digital intelligence are key resources, and therefore economic justice has to focus on how these resources and their control are distributed.

As AI's ability to monitor and analyse human behaviour increases, significant concerns are raised about fundamental rights. It is highly concentrated and has significant implications for fair competition, labour opportunities, rights and taxation, and other instruments of revenue collection and distribution among others.

The expansion of AI in the digital age is marked by the increasing concentration of data intelligence and power within Big Tech companies, which in turn has profound implications for economic justice. This data intelligence has become the lifeblood of the platform market, driving the operations of tech giants that wield unprecedented influence. As AI systems rely on data for training and decision-making, they often perpetuate existing inequalities ingrained in the data they process. These inequalities are starkly evident in many African countries and other parts of the majority world, where significant portions of the population remain offline, excluded from the digital realm.

Meanwhile, Big Tech companies, predominantly headquartered in developed nations, have harnessed the power of data intelligence to establish dominance in the platform market. [These platforms](#) — be it through ride-sharing services, e-commerce or social media networks — collect, process, and use vast amounts of data to gain a competitive edge, leaving domestic firms and entrepreneurs unable [to compete](#). This concentration of power not only hinders local economic development and job opportunities but also deepens global economic imbalances.

With the help of AI, state and tech companies can now influence human behaviour in ways that align with their interests. For example, through surveillance of citizen data, the state can create targeted propaganda to shape public opinion, influence political discourse, or manipulate citizen's perceptions.

Big Tech companies can also influence customers' opinions. This can lead to individuals [exercising agency](#) that is consistent with the state's objectives and market logic, which can be at odds with public security objectives. Thus, the use of AI in surveillance poses a risk of allowing these entities to wield significant power over individuals and society, with implications for privacy, civil rights, and social stability.

The contemporary understanding of the public value of data has been marred by the new economic order, where the extraction of value often takes precedence over value creation. This focus on extraction rather than creation has led to a misalignment in how we perceive value, conflating taking with making and undermining our grasp of what the public value of data truly means. To unlock the genuine public value of data, there is an [urgent need to reconsider](#) the sources of wealth, recognising the activities that create it, those that extract it, and those that might inadvertently destroy it.

In addition, the data-driven AI technologies themselves can inherit and reinforce biases present in the data, leading to discriminatory outcomes and economic exclusion for marginalised groups.

Recognising the urgency of addressing these economic injustices, the call for AI economic regulation through state formation becomes increasingly important. The path to a more equitable future involves building institutions that can govern AI technologies and platform markets effectively, integrating ethical and social considerations into AI design, and strengthening the capacity of the state to enforce regulations in the digital sphere. Taxation policies on AI and tech corporations emerge as a means to generate revenue that can be reinvested in society. The allocation of revenue generated through taxation becomes a pivotal decision point. Redistribution mechanisms can serve as a lifeline to alleviate economic disparities and provide relief to marginalised communities. AI regulation should aim to foster economic development, promote job creation, expand access to digital technologies, and strive for economic equality. This also includes social investments through upskilling and education programmes that empower individuals with the skills needed to participate meaningfully in the AI digital economy, ultimately reducing disparities in access and opportunity.

State-led AI economic regulation emerges as the protagonist, weaving together institutional building, state building, resource mobilisation, revenue allocation, economic development, and social investment into a compelling tale of economic justice in the digital age.

African countries have been harnessing AI technologies in different sectors of the economy. The most notable [adoption](#) of AI in Africa has been in education, health care, agriculture, commerce, and governance. Consequently, some anti-competitive practices are already evident in Africa. Some examples include:

- ❖ after the public listing of Jumia, a Nigerian online marketplace where foreign investors acquired a significant portion of its ownership, concerns have been raised about how such

arrangements can impede the growth of Africa's indigenous technology sectors;

- ❖ a 2018 [study](#) of start-ups in East Africa revealed that 90% of the funding received went to foreign founders;
- ❖ foreign AI companies have also been [accused](#) of using fake African identities as part of their marketing strategy to raise capital, only to subsequently divest their interests;
- ❖ Due to the limited presence of substantial research and development on AI within Africa, AI applications adopted on the continent often come from external sources. They may lack contextual [relevance](#), especially concerning cultural, and infrastructural factors and alignment with developmental goals.

AI markets often require significant capital investments and low variable costs, with first-mover advantages favouring early adopters. Companies able to achieve economies of scale have considerable advantages over their competitors. They also rely heavily on [network effects](#) and customer behaviours, including high switching costs, that can promote long-term loyalty. Global big tech companies have unquestionable advantages in capital, information, access to technology, and skilled labour. Some essential elements to run AI systems, like algorithms, data, and computing power, are often in the control of platform-based big tech companies.

Historically, globally Big Tech companies are not held accountable for anti-competitive behaviour discussed in the section above or other corporate malfeasance., And this very much remains the case in African markets. This supports the creation of dominant players that span multiple sectors and endure for extended periods. There are jurisdictional limitations on regulating Big Tech companies that take them to market, often without physical presence in other countries. Given the crucial role of data access and processing in AI, AI technologies are especially prone to these anti-competitive market dynamics.

Relevant to this is the [African Continental Free Trade Agreement](#) (AfCFTA), which hinges on the principles of unrestricted access to market opportunities, improved coordination within regional value chains, and the strengthening of cooperative relationships among 54 member countries. This, together with the [AU Data Policy Framework](#), holds immense potential for building the scale and scope necessary to unlock the public value of data and compete effectively in the global AI data market. AfCFTA's commitment to fostering inclusive economic growth can be significantly bolstered by the effective use of data as a driver of innovation, efficiency, and economic development. The policy framework, on the other hand, offers the necessary guidelines and principles to ensure that the benefits of data-driven progress are distributed equitably and that data is leveraged to advance the socio-economic well-being of all Africans.

The AI value chain, in this context, becomes a pivotal tool in addressing these multifaceted challenges and opportunities. It allows for the examination and mitigation of extractive practices at various stages, from the extraction of resources to data use, employment generation, intellectual property management, trade facilitation, energy, and taxation. By strategically managing these aspects within the AI value chain, societies and economies can navigate the complex landscape of AI to harness its potential for the greater good while minimising its risks.

AI adoption the world over is energy-intensive. To develop and deploy AI systems, African firms need to be able to draw upon [more energy capacity](#) than they currently have access to. Inadequate and unreliable power supply is a [significant risk](#) to any investment that plans to create and consolidate AI-tech systems. A key consideration is how AI may enable Africa's transition to a sustainable low-carbon economy, away from the traditional dependence on fossil fuels. In as much as AI can be an enabler to this transition, the use of AI raises two critical concerns. These are: 1) the possible exacerbation of economic, social, and ethical challenges, some of which are already associated with AI, and 2) the contribution to climate change through greenhouse gases emitted by training data and computation-intensive AI systems, for instance, training one AI model has been calculated to emit more than [300,000 kgs](#) of carbon dioxide equivalent. There is an acute need for African governments to consider sustainable energy policies that align well with their AI strategy, looking at decarbonisation, the digital economy, and broad environmental sustainability.

In light of these challenges, there is an urgent need for African governments to formulate sustainable energy policies that align harmoniously with their AI strategies. These policies should encompass decarbonisation efforts, considerations for the digital economy, and the broader imperative of environmental sustainability. The transition to green and sustainable energy sources should be at the forefront of this agenda. This addresses the energy capacity gap required for AI and aligns Africa with global efforts to combat climate change.

In this context, a "just transition" is paramount. A just transition ensures that as the digital economy, fuelled by AI, evolves, it does so in a manner that is socially and environmentally equitable. It means that the shift to green energy and digital transformation doesn't leave communities or workers behind. It involves fair treatment, protection of livelihoods, and consideration for the most vulnerable in society. By focusing on green energy and a just transition, Africa can underpin its digital economy with sustainability, ensuring that the benefits of AI reach all segments of the population while mitigating its environmental impact.

As a result, the region's AI governance strategies and regulatory responses must be context-specific and take into consideration ethical narratives, rights, perceptions, and principles from Africa which are glaringly missing from the global discussion of AI governance.

How can AI governance models be extended?

Extending AI governance frameworks in Africa for competitive, sustainable energy requires the consideration of the following:

- ❖ AI governance models for Africa must consider the type of data collected and how it is acquired. Africa currently confronts an issue of low digitisation, signalling the need for digital data to train AI effectively.
- ❖ Effective approaches to local problems and local data relating to language, demography, and culture.
- ❖ Data accessed and used to train these AI models could include open data gathered by governments or private data obtained through agreements with private sector actors such as mobile network carriers.

Domestic AI enterprises in Africa frequently find it challenging to compete favourably with global firms. This is due to a lack of finance, access to technology, and skilled labour. Overcoming the challenge of competition calls for the elimination of entry barriers, the increased accessibility of data and the increased visibility of algorithms used to train and construct contextual models. Further, African AI governance frameworks must protect native African enterprises, by including explicit antitrust rules and enforcement tools.

Energy is vital to successfully installing AI systems on the continent. As African countries switch to renewable energy, nearly [59 gigawatts](#) as of 2022 - powering approximately 52 million households per year¹. AI tools are being developed to help manage the transition. However, AI governance frameworks in Africa should take into account the substantial carbon footprint that comes with implementing AI systems when using these systems as a vehicle for energy efficiency. For example, frameworks can advocate for mitigation interventions such as the use of energy optimisation frameworks such as [Zeus](#) when training AI models. The frameworks can also recommend the use of sustainable computing, such as executing algorithms on hardware powered by green electricity, to name a few examples.

¹ A capacity of 1 GW could power approximately 876,000 households for one year if they collectively consume 10,000 kWh each

Policy Recommendations

To expand Global AI governance to ensure the equitable and just adoption of AI worldwide, we propose:

- ❖ AI frameworks should prioritise inclusion in AI development and establish measures to detect and mitigate anticompetitive practices. This involves clear antitrust laws and enforcement mechanisms to prevent AI companies from engaging in monopolistic behaviour. This includes scrutinising mergers and acquisitions that could stifle competition.
- ❖ Lowering barriers to entry for new AI players and ensuring that smaller companies have access to the necessary data to compete.
- ❖ AI frameworks should also require diverse and representative datasets, regular fairness audits, and mitigation strategies.
- ❖ AI governance to include energy policies that align effectively with Africa's decarbonisation efforts to cater for the insufficient power supplies in the continent.
- ❖ AI policies that prioritise cost-effective, socially and gender-inclusive, sustainable AI and renewable energy provision in Africa.

Adopting governing priorities like these can help create sustainable, economically-sound policies that work for the most vulnerable. Using the African perspective as a case study can serve as a valuable example of how localised regulations can inform and influence the development of global AI governance frameworks. By examining the domestic challenges of competition and reliable energy constraints faced by African countries in adopting and integrating AI technology, we can gain insights into AI's potential risks and opportunities in different contexts. As such, any global AI governance framework should take into account the unique needs and challenges of different regions, while also working towards shared principles and standards for the responsible and ethical use of AI technology worldwide. Only by adopting a nuanced and context-specific approach can we ensure that AI is developed and deployed in a way that benefits everyone, including the most vulnerable, rather than exacerbating existing inequalities and divisions.