Sandeep Abraham
INTLPOL 245B

No Free Lunches:
How the Global South Can Govern Open-Source AI

Introduction

Since AI transformers debuted in 2017, the rise of open source artificial intelligence (OSAI) in the post-colonial developing economies of Africa, Latin America and Asia - collectively known as the Global South - has been nothing short of revolutionary, opening doors to untold opportunity in labor, creativity, governance, and education. In particular, OSAI in the form of open source foundation models (OSFMs) like Meta's LLaMa, DeepSeek, Mistral AI, Stable Diffusion, and Alibaba Qwen have empowered Global South developers to rapidly build, deploy, and govern advanced AI. These models offer low-capacity states cost-effective localized tools that can serve their culturally, linguistically, and developmentally diverse populations. They also present a significant dilemma for Global South states in that they also empower malicious actors and that these models are still governed by licenses, architecture, infrastructure, biases, and assumptions of the Global North.

The LLaMa family of OSFMs, which boasts 1.2 billion downloads globally as of May 2025, are provided for download contingent on acceptance of Meta's Terms and Conditions, which clearly asserts a dominant Global North framework:

> *"This Agreement will be governed and construed under the laws of the State of California without regard to choice of law principles, and the UN Convention on Contracts for the International Sale of Goods does not apply to this Agreement."*

This agreement binds the model to California's and thus the United States' legal and cultural frameworks, including its global sanctions regime, its consumerist approach to product design, and a political tradition of hegemonic dominance, and explicitly rejects the more global governance framework of the UN Convention on Contracts. OSFM users in low-capacity states

are also bound by their need to outsource compute infrastructure, their often fragmented regulatory enforcement, and the transnational and decentralized nature of OSAI development. Financial constraints, a dearth of AI development expertise, unstable or badly outdated energy grids, and at least until recently, the Biden administration's AI Diffusion Rule[1], which severely constrained the availability of advanced AI for the Global South.

Closed source foundation models and AI like OpenAI's ChatGPT, Google's Gemini, and Anthropic's Claude, popular in the Global South, have their liability and governance concentrated in a single corporate entity, with whom governments can negotiate or litigate. By its nature, each step of an open-source model's development cycle is diffuse - pre-training, compute and storage, web hosting, fine-tuning model weights, and post-training. Developers may be anonymous, training pipelines may be distributed, and end user intentions and actions impossible to track. Attempts to regulate their creation or distribution and enforce those regulations would likely be ineffective and infeasible.

Yet, governance is not entirely out of reach. This paper explores the legal mechanisms and frameworks that countries and regions in the Global South have deployed and could deploy to regulate the societal risks of OSFMs. The "Global South" here broadly refers to countries in Africa and Africa with shared histories of colonial subjugation, economic marginalization, and deep institutional and technological capacity limits. It will examine the African Union and Latin America as case studies, both as regional collectives but also as homes for globally influential nations like BRICS members Brazil and South Africa. (Asia will be excluded because its largest states India and China, while members of the Global South, are also well-resourced,

[1]U.S. Dep't of Com., *Department of Commerce Announces Recission of Biden-Era Artificial Intelligence Diffusion Rule, Strengthens CHIP*, Bureau of Indus. & Sec. (May 2025), https://www.bis.gov/press-release/department-commerce-announces-recission-biden-era-artificial-intelligence-diffusion-rule-strengthens-chip.

highly-educated, and maintain significant domestic capacity and influence over AI development.) Despite their computational infrastructure constraints and fragmented and underdeveloped legal frameworks, this paper asserts that Global South governments can still leverage existing data privacy and protection regulation, public infrastructure investment, national deployment rules, educational initiatives, and regional community development to effectively govern and benefit from OSAI.

By focusing on the African Union's Continental Strategy (2024),[2] Latin America's Santiago Declaration on Ethical AI (2023),[3] and robust national frameworks and legislation like Kenya's Draft Information Technology Artificial Intelligence Code of Practice (2024)[4] and Brazil's pending AI Regulation Bill No. 2,338/2023 (2023),[5] this paper examines how the structural and developmental asymmetries, postcolonial frameworks, and sociopolitical needs of each jurisdiction shape AI governance. It also examines how these legal tools stand up to broader sovereignty trade-offs from models hosted by or licensed from Global North actors outside their jurisdiction. Given historical and current global inequity and the lack of Global South representation in premier AI development forums, pragmatic and legally enforceable governance strategies are vital to these regions.

Defining Open Source AI

---

[2] Continental Artificial Intelligence Strategy, African Union (July 18–19, 2024), https://au.int/en/documents/20240809/continental-artificial-intelligence-strategy

[3] Santiago Declaration, Ninth Ministerial Conference on the Information Society in Latin America and the Caribbean (Nov. 7–8, 2024), https://conferenciaelac.cepal.org/9/sites/elac9/files/2401157e_cmsi.9_santiago_declaration.pdf.

[4] Information Technology — Artificial Intelligence — Code of Practice for AI Applications (DKS 3007:2024), Kenya Bureau of Standards (Apr. 8, 2024), https://www.dataguidance.com/sites/default/files/kebs-tc_094_n66_public_review_kenya_standard_dks_3007_ai_code_of_practice.pdf.

[5] Projeto de Lei No. 2.338/2023, Senado Federal (Dec. 10, 2024), https://digitalpolicyalert.org/event/25132-passed-bill-no-2338-of-2023-regulating-the-use-of-artificial-intelligence-including-data-protection-measures.

Although there is no universally standardized definition of open-source artificial intelligence, the Open Source Initiative (OSI)—a globally recognized authority on open-source software—offered a formal definition of Open Source AI (OSAI) in 2024.[6] It defines OSAI as an AI system made available under terms that allow users to freely use, study, modify, and redistribute the system and its components. This includes open access to training data, source code, and model parameters (or "weights"), which are critical for transparency and adaptability.[7] While no AI law or policy in the Global South has formally adopted the OSI definition, its principles—particularly transparency, auditability, and equitable access—align closely with the values embedded in regional strategies, such as Brazil's AI Bill and the African Union's Continental AI Strategy.

If popular OSFM deployments like Meta's Llama series and DeepSeek's models met this definition of OSAI, they would provide developers in the Global South truly distributed and culturally equitable participation in the development and advancement of AI models, fostering real innovation in low-capacity states. Global South governments and civil society could easily scrutinize and assess these models to govern them as if they were homegrown. The Linux operating system, Google's Android mobile operating system, and the Firefox browser are examples of open source software that meet this definition.

Yet, as Hugging Face researcher Irene Solaiman has noted, most popular "open source" models are actually only partially open. Models like Meta's Llama and DeepSeek may release model weights and some code for modification, but only under strict licenses that restrict or constrain commercial reproduction or derivative use, withhold training data, and allow the model

---

[6] Open Source AI Definition v1.0, Open Source Initiative (Oct. 28, 2024), https://opensource.org/ai/open-source-ai-definition.
[7] Mike Isaac, *What to Know About the Open vs. Closed Software Debate*, N.Y. Times (May 29, 2024), https://www.nytimes.com/2024/05/29/technology/what-to-know-open-closed-software.html.

developers to revoke licenses at their discretion. Partially open source models like this not only perpetuate Global North governance dependencies through licensing and training data withholding, but the size of powerful downloadable models and the infrastructure needed to run them can create access barriers. Decentralized fully open source model communities like EleutherAI[8] and BigScience[9] do exist, but the global name brand recognition of Meta and DeepSeek and the ease of model weight fine-tuning and deployment on provided architecture (vice the resource- and time-intensiveness of building training data and architecture from scratch) make partially open models more viable for Global South commercial and localization needs.[10]

None of the African Union or Latin America's current AI strategies or proposed legislation attempts to explicitly define OSAI, but they frame it within their broader goals of open development, capacity building, and digital sovereignty. The AU Continental AI Strategy recognizes a need for open data available to train models in a way that respects privacy, and places it within the AU Data Policy Framework.[11] The AU Continental AI Strategy further promotes open source approaches that strengthen regional cooperation and innovation. Brazil's proposed AI Bill relies on Brazil's already robust data privacy laws, and requires algorithmic transparency, promotes explainability and open access to documentation, and encourages reproducibility, all of which are principles of fully open source software. The bill also includes flexible regulation of non-commercial or public-interest applications, indicating support for open AI development.

---

[8] EleutherAI, https://www.eleuther.ai (last visited May 29, 2025).
[9] BigScience Research Workshop, Hugging Face, https://bigscience.huggingface.co (last visited May 29, 2025).
[10] Irene Solaiman, *The Gradient of Generative AI Release: Methods and Considerations*, arXiv:2302.04844 [cs.CY] (Feb. 5, 2023), https://arxiv.org/abs/2302.04844.
[11] African Union Data Policy Framework, African Union (2024), https://au.int/sites/default/files/documents/42078-doc-DATA-POLICY-FRAMEWORKS-2024-ENG-V2.pdf.

The State of OSAI in the Global South

With large populations of young digital natives, recent booms in mobile usage and internet penetration, and renewed regional cooperative regulatory urgency against the US', UK's, EU's, and China's increasingly extraterritorial regulations like the EU's General Data Protection Regulation (GDPR), the Global South is hungry for a piece of the global AI pie. As of 2024, 11 African countries have launched AI strategies or policies, and 4 have established dedicated AI centers of excellence.

Multiple surveys of Global South users revealed both significant adoption and immense optimism for AI:

- In a 2025 LocalCircles survey of 92,000 respondents in India, over half use AI platforms daily, 28% rely on OpenAI's ChatGPT, 91% who said they primarily used AI platforms to look for information, and 90% said they primarily access AI platforms via text rather than voice.[12]
- Read AI's 2025 survey found that 68% of Brazilian workers use AI every day and 90% felt AI would improve their work effectiveness.[13]
- A 2024 Boston Consulting Group (BCG) survey showed that confidence in generative AI tools were generally higher and anxiety lower in the Global South than in the Global

[12] *1 in 2 Indian Internet Users Surveyed Are Already Using AI Platforms; 31% of Them Have or Are Likely to Switch to DeepSeek Soon*, LocalCircles (Feb. 4, 2025), https://www.localcircles.com/a/press/page/india-ai-survey.
[13] Read AI, *Brazil Survey: 68% of Brazilians Use AI Every Day, but Only 31% Have Formal Access and Training at Work—and They Want More* (2024), https://www.read.ai/post/brazil-survey-68-of-brazilians-use-ai-everyday-but-only-31-have-formal-access-and-training-at-work--and-they-want-more.

North, with India, Brazil, Nigeria, and South Africa showing 54%, 52%, 50%, and 46% confidence and 13%, 19%, 15%, and 17% anxiety respectively.[14]

- Regarding Africa, the 2024 Google Ipsos Multi-Country AI Survey of 1000 people per country revealed that 70% of Nigerians and 55% of South Africans had used an AI application in 2024, 77% of Nigerians and 55% of South Africans were interested in learning more about AI, and 87% of Nigerians and 73% of South Africans were excited about the possibilities of AI in their lives.[15]
- In Latin America, as of 2022, 40-47% of all businesses use artificial intelligence[16], with that number climbing to 63% for Brazil[17], where public trust in AI sits at 84%.[18] According to Endeavor Intelligence in Mexico, the amount of AI startups in Latin America has surged between 2018 and 2024, increasing by 487% in Brazil, 965% in Mexico, 471% in Chile, 669% in Colombia, and 159% in Argentina.[19]

OSAI in particular has been a game changer in the Global South, providing the means to build, deploy, and govern cutting edge technology, and ample localization modularity to serve the cultural, linguistic, and developmental needs of diverse populations. Between 2022 and 2023, Africa's open source development community has grown significantly, with developer

---

[14] Boston Consulting Group, AI at Work: Friend and Foe (June 26, 2024), https://web-assets.bcg.com/21/27/3909df0749fb97f19a98721d1eff/ai-at-work-2024-slideshow-2024-june.pdf.
[15] Google / Ipsos Multi-Country AI Survey 2025, Ipsos (Jan. 14, 2025), https://www.ipsos.com/en-us/google-ipsos-multi-country-ai-survey-2025.
[16] Según un estudio de NTT DATA el 40% de las empresas en LATAM utilizan Inteligencia Artificial, NTT DATA (May 4, 2022), https://co.nttdata.com/newsfolder/segun-un-estudio-de-ntt-data-el-40-de-las-empresas-en-latam-utilizan-inteligencia-artificial.
[17] Brazil Is the Most Advanced Country in Latin America in the Use of Artificial Intelligence, BNamericas (Oct. 2022), https://www.bnamericas.com/en/news/brazil-is-the-most-advanced-country-in-latin-america-in-the-use-of-artificial-intelligence.
[18] Juan Loaiza, AI Adoption in Latin America: How the Region Sets Its Own Terms, Hispanic Executive (May 1, 2025), https://hispanicexecutive.com/ai-adoption-in-latin-america-how-the-region-sets-its-own-terms/.
[19] La era de la IA en México, Endeavor México (2025), https://mexico.endeavor.org/2024-ia/.

communities in Kenya, Ghana, Rwanda, and Nigeria growing by over 40%.[20] According to GitHub's Octoverse 2024 report on its global open source developer community, Latin America's developer communities in Brazil, Mexico, Colombia, Argentina, and Peru all grew by over 20%.

The Global South has also seen a surge in model development, both in fine-tuning model weights of popular OSFMs like Meta's LLaMa series and in indigenous lean OSFMs. AfroLM, launched in 2022 by the Masakhane community of AI researchers, is an indigenous OSFM built to support 23 African languages and trained from scratch using a new self-active learning framework optimized for low-resource settings.[21] Then in 2024, commercial developer Lelapa AI in South Africa launched InkubaLM, a lean OSFM of only 0.4 billion parameters, a vocabulary size of 61788 and trained on 1.9 billion tokens of English, French, and five African languages: IsiZulu, Yoruba, Hausa, Swahili, and IsiXhosa. InkubaLM-0.4B is a cost-effective pan-African model with a license that only limits commercial reproduction.[22] In 2025, developers in a coalition of more than 30 Latin American R&D organizations came together to build and launch LatAmGPT[23], an ambitious continental project built by Latin Americans for Latin Americans to better account the region's specific Spanish, Portuguese, and indigenous language variances and

[20] State of Compute Access 2024: How to Navigate the New Power Paradox, Tony Blair Institute for Global Change (Nov. 18, 2024), https://institute.global/insights/tech-and-digitalisation/state-of-compute-access-2024-how-to-navigate-the-new-power-paradox.
[21] Bonaventure F. P. Dossou et al., *AfroLM: A Self-Active Learning-based Multilingual Pretrained Language Model for 23 African Languages*, arXiv (Nov. 23, 2022), https://arxiv.org/abs/2211.03263.
[22] Atnafu Lambebo Tonja et al., I*nkubaLM: A Small Language Model for Low-Resource African Languages*, arXiv (Aug. 30, 2024), https://arxiv.org/abs/2408.17024.
[23] LatAmGPT, https://www.latamgpt.org/en (last visited May 29, 2025).

cultural nuances.[24] This followed earlier projects like the first two versions of Maritaca AI's Sabía Brazilian Portuguese language model that were built on Meta's LLaMa-1-7B architecture.

When Maritaca launched Sabiá-3 in 2024 as an OSFM built from scratch in Brazil by Brazilian developers and hosted on Brazilian infrastructure, it started to fulfill the goals of Brazil's 2023 AI Bill and its 2021 National AI Strategy. Similar to the Sudanese Arabic Zol-RoBoBERT model, Sabiá-3 builds on the BERT (Bidirectional Encoder Representations from Transformers) architecture,[25] an OSFM framework developed by Google, which enables it to understand the context of Brazilian Portuguese words in both directions and perform tasks like classification, question answering, and named entity recognition with greater nuance - meaning Sabiá-3 could potentially be far more useful to Brazilians in Brazil than ChatGPT, even if ChatGPT currently surpasses Sabiá-3 benchmarked capabilities like creative tasks.[26] Despite that, Brazilian workplace AI startup Inner AI integrated Sabiá-3 into its AI platform in October 2024 ensuring its place as a Brazilian standard.

Sabiá-3's important departure from Western model architecture and training data toward also meant its Braszilian users could work with a model trained on their biases and assumptions rather than those of the US; only a few currently active Brazilian Portuguese OSFMs like RoBERTaLexPT[27] and BERTabaporu[28] share this pedigree. These projects are more than technical milestones; they are instruments of national sovereignty and digital independence. In a

---

[24]LatAmGPT Aims to Create AI That Better Represents Latin America's Diversity, NBC News (Mar. 26, 2025), https://www.nbcnews.com/news/latino/latamgpt-aims-create-ai-better-represents-regions-diversity-rcna197523.
[25]Maritaca AI, Sabiá-3: A Brazilian LLM Specialized in Legal and Educational Tasks, YouTube (Apr. 2024), https://www.youtube.com/watch?v=prJrQ8XL-AY.
[26]Sabiá-3, Adapta Docs (2024), https://docs.adapta.org/adapta-one/adapta-one-english/text-models/sabia-3.
[27]Eduardo A. S. Garcia et al., RoBERTaLexPT-base, Hugging Face (2023), https://huggingface.co/eduagarcia/RoBERTaLexPT-base.
[28]Pablo Botton da Costa et al., BERTabaporu-base-uncased, Hugging Face (2022), https://huggingface.co/pablocosta/bertabaporu-base-uncased.

February 2025 interview with CNN, Brazilian Minister of Science, Technology and Innovation, Luciana Santos, when asked about DeepSeek-R1's potential to improve Brazil's AI development, reiterated the National AI Strategy's goal of Brazilian digital sovereignty: "The most important thing about this new technology is that Brazil has enough resources to compete in the field of artificial intelligence. It is not something out of reach for countries like ours."

Nevertheless, significant constraints and barriers to growth and the development of sovereign AI systems persist in both Africa and Latin America. Unreliable and inadequate energy grids as well as limited access to high-performance compute continue to limit the potential of Global South OSAI developers. Foreign export controls and licensing regimes as well as prohibitively expensive hardware infrastructure development and maintenance leave them and their models vulnerable to foreign dependence and interference.[29] Unpredictable downstream use of model weights disincentivize institutional investment for all but a few projects sponsored by or in partnership with their governments. And until recently, distance, high travel costs, visa inequities, and language barriers kept most Global South AI stakeholders out of global AI debate, most of which happened at international AI conferences held in the Global North.[30]

Governance Tensions and Challenges

While some estimates suggest that AI could double the GDP rate of African countries by 2035[31] and contribute up to 5.4% of Latin America's GDP by 2030 while improving labor productivity, boosting education and innovation, and reducing poverty, right now OSAI poses significant legal, institutional, and infrastructural challenges to already low-capacity states. AI

[29] https://www.brookings.edu/articles/is-open-access-ai-the-great-safety-equalizer-for-african-countries
[30] https://www.chathamhouse.org/sites/default/files/2024-06/2024-06-07-ai-challenge-global-governance-krasodomski-et-al.pdf
[31] https://www.gsma.com/solutions-and-impact/connectivity-for-good/mobile-for-development/blog/understanding-ai-for-sustainable-development-in-africa/

researchers and policy makers across the Global South debate whether the nascent industry on continents rife with infrastructural and financial constraints should be free of regulatory bottlenecks[32] or if preemptive policy will guarantee the most benefit.[33] Resolving the persistent challenges of digital sovereignty, foreign compute dependency, structural data poverty, and legal fragmentation is critical to any strategy for AI-enabled prosperity in the Global South.

Given the technological and financial leads China and the US have in the global AI race and the often global influence of European Union (EU) regulations like the 2024 EU AI Act, Global South nations have had to subsume their digital sovereignty into either a Western or Chinese blueprint. Just as the design, deployment, and corporate governance of US-developed social media like Facebook, Instagram, and Twitter, and Chinese-developed TikTok reflected the values of those countries - individual autonomy and commodified social relationships for the US and harmony through social control for China[34] - so too do the partially open OSFMs developed and deployed by American and Chinese companies.[35] (As shown above, Meta's LLaMa models can only be downloaded contingent on contractual acceptance of California's legal framework and Meta's US-conceived acceptable use policies.) EU regulation, while it shares an emphasis on individual autonomy like the US, also prioritizes individual rights and privacy. These three value paradigms are not necessarily bad, but they may not be suitable for cultures that value communal approaches and perpetuate historical power asymmetries.[36]

---

[32] https://www.technologyreview.com/2024/03/15/1089844/africa-ai-artificial-intelligence-regulation-au-policy

[33] https://indicelatam.cl/wp-content/uploads/2025/01/ILIA_2024_Ingles_020125_compressed.pdf

[34] https://www.journalofdemocracy.org/online-exclusive/why-deepseek-is-so-dangerous/

[35] https://www.chathamhouse.org/sites/default/files/2024-06/2024-06-07-ai-challenge-global-governance-krasodomski-et-al.pdf

[36] Ernesto Vivares & Francisco Rodriguez-Ortiz (09 May 2025): Artificial Intelligence meets South America: mapping emerging technology power governance and the challenges ahead, Globalizations. https://doi.org/10.1080/14747731.2025.2497209

Even when discussing indigenous OSFMs and AI projects developed within Global South countries, the reliable high-performance compute infrastructure required for training, fine-tuning, and deployment are often scarce or very expensive. For example, as of March 2024, while the price of one Nvidia A100 GPU (~$1500 USD) cost about 2.5% the per capita GDP of Germany, it cost 75% and 69% of per capita GDP for Kenya and Senegal respectively.[37] Until its recent revocation, the US AI Diffusion Rule ensured US tech giants maintained competitive dominance over the highest performing Nvidia Blackwell GPU chips, while China worked with its substantial mass of slightly older Nvidia chips and its emerging competitive Huawei AI chips. And even when opportunities for acquisition and access arose, emerging compute powers like Australia, India, Malaysia, Saudi Arabia, and the UAE were better funded than Africa or Latin America to take advantage.[38]

Compared to Africa, Latin America's energy infrastructure and internet penetration rate are far more favorable to its AI development ecosystem. While only 38%[39] of Africa has access to the internet, nearly 70%[40] of people in Latin America are online, both relative to a global average of 68%. While only 53.3% of people sub-Saharan Africa have access to electricity[41], they suffer an average of 87 power blackouts[42] a year (all of North America averages one). By contrast, Latin America has an overall electricity access rate of 97%[43] with 65% generated from clean sources[44] in 2024, making it far more reliable. However, Africa's AI infrastructure is

---

[37] https://idl-bnc-idrc.dspacedirect.org/server/api/core/bitstreams/1a2549c2-6eb2-4715-9ddc-7be8400bbb7a/content
[38] https://institute.global/insights/tech-and-digitalisation/state-of-compute-access-2024-how-to-navigate-the-new-power-paradox
[39] https://www.itu.int/hub/publication/d-ind-sddt_afr-2025/
[40] https://www.thinkglobalhealth.org/article/health-latin-america-and-promise-artificial-intelligence
[41] https://data.worldbank.org/indicator/EG.ELC.ACCS.ZS?locations=ZG
[42] https://institute.global/insights/tech-and-digitalisation/state-of-compute-access-2024-how-to-navigate-the-new-power-paradox
[43] https://www.iea.org/commentaries/bottom-up-energy-transitions-managing-the-rise-of-energy-communities-in-latin-america
[44] https://ember-energy.org/countries-and-regions/latin-america-and-caribbean/

rapidly improving, like Nigeria where companies are incorporating "solar plus storage"[45] systems for data centers and Microsoft's joint project with UAE-based AI firm G42 to invest $1 billion in a data center in Kenya powered entirely by geo-thermal energy.[46]

A key driver for the development of indigenous OSFMs like AfroLM, InkubaLM, and LatAmGPT is also a primary pain point for Global South in AI development - the lack of high-quality training data accurately representative of local languages and cultures. Developers feel this poverty of structural data when using models like LLaMa and DeepSeek which (1) do not open source their English- or Chinese-language pre-training datasets, and (2) often reproduce or perpetuate cultural, linguistic, or ideological biases. Building datasets for low-resource languages is hamstrung in the Global South by poor funding and the fact that its citizens increasingly do not speak or write local languages themselves.[47] For non-English speaking communities, commercial LLMs built for global audiences are more likely than not to produce gibberish output for low resource language input.[48] And when domestic data centers with reliable energy and internet are available, they are usually funded by US tech giants for mostly English data annotation by poorly paid workers under exploitative contracts and conditions - in both Africa and Latin America.[49] [50] [51]

Unlike the EU's comprehensive and enforceable transnational AI Act, the Global South struggles with regionally fragmented and mostly aspirational legislation around AI, and almost

---

[45] https://datacentremagazine.com/critical-environments/solar-plus-storage-powering-nigerias-data-centre-revolutio
[46] https://news.microsoft.com/source/2024/05/22/microsoft-and-g42-announce-1-billion-comprehensive-digital-ecosystem-initiative-for-kenya/
[47] https://www.technologyreview.com/2024/11/11/1106762/africa-ai-barriers/
[48] https://www.chathamhouse.org/sites/default/files/2024-06/2024-06-07-ai-challenge-global-governance-krasodomski-et-al.pdf
[49] https://restofworld.org/2025/karen-hao-empire-of-ai-book/
[50] https://www.wired.com/story/millions-of-workers-are-training-ai-models-for-pennies/?utm_source=chatgpt.com
[51] https://restofworld.org/2025/big-tech-ai-labor-supply-chain-african-workers/

no explicit regulation of open source deployments. Enacted legislation in Africa and Latin America more explicitly covers issues adjacent to OSAI like data and IP protection, cybersecurity, and inclusive access and broadly discusses concepts of transparency and accountability. These laws do not provide explicit guidance or direction for transparency, licensing, auditability, or downstream user abuse of OSAI, though upcoming legislation might. Brazil's Bill No. 2,338/2023, still pending enactment, promotes openness, explainability, and accountability in deployed AI, but does not have an explicit carveout for OSAI distinct from closed source commercial models. Kenya's Draft DKS 3007 AI Code of Practice[52], if enacted, would legislate AI responsibility to fully cover deployed OSAI as well; it includes requirements for AI transparency, reliable content detection (watermarking or other synthetic content detection), model cards, accuracy auditing, and more.

The thorniest OSAI governance challenge for the Global South, however, is the question of malicious downstream users of OSAI models. The transparency and accessibility of open weights and architectures also remove the kind of single-source corporate oversight that closed source AI companies like OpenAI and Google provide. Potentially anyone - from startups to domestic and foreign malicious actors - is able to fine-tune or deploy models without guardrails or ethical constraints. Even with LLaMa's licensing, Meta's acceptable use policy is ultimately unenforceable once a user has downloaded and deployed it beyond the reach of Meta's networks and servers. The signed agreement may add download friction as a pausing nudge to encourage users' ethical usage and courts could use a signed acceptable use policy as evidence in a cybercrime case, but Meta cannot remotely disable a downloaded model for the former and the latter depends on very difficult developer and user attribution. With low institutional capacity

[52] https://www.dataguidance.com/sites/default/files/kebs-tc_094_n66_public_review_kenya_standard_dks_3007_ai_code_of_practice.pdf

and global political influence, Global South governments are saddled with the tension of the autonomy and innovation OSAI promises as well as increased exposure to cybercrime, mis- and disinformation, surveillance, and algorithmic discrimination.

OSAI in Africa: Ascendant Community and Evolving Threats

From the African Union down to the smallest developer and hacker collectives, OSAI in Africa is defined by community and communal action. Within fifteen action areas proposed by the AU Continental Strategy, the Strategy specifically calls out the need to promote African values like "Ubuntu, which respects collective community over individuality" as an implementation of ethical principles for AI. Taken as one expression of the continent's desires and hopes for AI, the Strategy prioritizes economic development and reduced reliance on foreign infrastructure by developing regional data centers, creating open standards, and building public-private research partnerships. The idea of AI grounded in community has seeped into every aspect of Africa's OSAI ecosystem, also serving as a decentralized counterweight to the Western values, assumptions and rules written into popular closed source LLMs.[53]

This approach is fundamentally capacity-building for African nations, developing the talent, innovation, and reach of small collectives focused on local linguistic and culturally diverse users. Several indigenous organizations like Women in Machine Learning and Data Science,[54] Data Science Africa,[55] Data Science Nigeria,[56] the annual gathering Deep Learning Indaba,[57] the Masakhane Research Foundation,[58] and Code for Africa[59] are all pan-African

---

[53] https://www.chathamhouse.org/sites/default/files/2024-06/2024-06-07-ai-challenge-global-governance-krasodomski-et-al.pdf
[54] Women in Machine Learning and Data Science (13 Africa chapters), https://wimlds.org.
[55] Data Science Africa, https://www.datascienceafrica.org.
[56] Data Science Nigeria, https://datasciencenigeria.org.
[57] Deep Learning Indaba, https://deeplearningindaba.com.
[58] Masakhane Research Foundation, https://www.masakhane.io.
[59] Code For Africa, https://codeforafrica.org.

grassroots organizations that organize events, teach summer schools and boot camps, and host conferences to showcase emerging African AI and spark innovation from young developers and academics. Masakhane along with similar grassroots organizations like SADiLaR,[60] GhanaNLP,[61] EthioNLP,[62] and HausaNLP[63] carry out the vital, but otherwise underfunded, work of building, curating, and open sourcing high-quality African language NLP datasets, both saving these languages from extinction and enabling more rapid Africa-native OSFM development.

These fairly recent grassroot organizations and their initiatives are already bearing fruit on the continent, giving voice to previously ignored local communities, and prioritizing previously neglected problems. In 2021, the "Deep Learning Indaba Grand Challenge"[64] brought together over 350 local and international volunteer AI practitioners to build drug-discovery and data analysis models to cure Leishmaniasis, a neglected, historically underfunded, and sometimes fatal disease of poverty spread by sandflies primarily in Brazil, sub-Saharan Africa, and South Asia. The competition yielded several promising drugs that were evaluated by the Drugs for Neglected Diseases initiative – DNDi,[65] with the winning solution published as a conference paper at the International Conference on Learning Representations (ICLR) in Vienna.[66] Though not a product of these OSAI communities, two other notable OSAI wins in Africa have been Virtual Agronomist, a WhatsApp-based AI tool that provides tailored

---

[60] South African Centre for Digital Language Resources, https://sadilar.org.
[61] Ghana NLP, https://ghananlp.org.
[62] Ethiopian NLP, https://www.ethionlp.com.
[63] HausaNLP (undated), 'Hausa-NLP Open Community', https://github.com/hausanlp.
[64] Deep Learning Indaba (2021), 'Indaba NDABA Grand Challenge: Curing Leishmaniasis', https://deeplearningindaba.com/grand-challenges/leishmaniasis.
[65] Drugs for Neglected Diseases initiative, https://dndi.org
[66] Dassi, L. K., Kane. H. and Nkwate, E. (2021), 'Computationally accelerating protein-ligand docking for neglected tropical diseases: A case study on drug repurposing for leishmaniasis', conference paper, ICLR 2021,https://africa.ai4d.ai/wp-content/uploads/2021/05/ICLR_2021____Drug_Repurposing_Deep_Learning__Practical_ML_for_Developing_Countries.pdf

agronomic advice to farmers, and PlantVillage, an open-access platform initially researched at Penn State University that helps farmers identify and manage plant diseases, both of which have resulted in significant increases in crop yields and improvements in early disease detection.[67]

Yet, even community building in OSAI has a dark side as it has empowered malicious actors, both African and foreign, with newer and more efficient tools for election interference and sophisticated fraud. AI-based "election interference" is a bit of a gray term in Africa as observable use cases of AI content in African elections range from political contestation and criminal activity to hazy areas of narrative support and satire to possibly allowable forms of candidate endorsement.[68] The 2023 Nigerian election saw extensive use of OSAI generated images and videos that falsely linked candidates to terrorist groups or other malign activities.[69] Most often, AI-generated deepfakes were used to promote fake endorsements of party candidates by Nigerian celebrities, and even Elon Musk and Donald Trump. AI-generated videos were also to undermine public opinion of other candidates, like a video depicting a candidate and his supporters planning to rig the election.[70] Both the Google Play and Apple App Store feature easily sophisticated OSAI apps for face manipulation like Reface, FakeApp, FaceSwap, and DeepFace Lab,[71] many of which are often used by fraudsters globally.[72]

At its worst, OSAI can be used to stoke violence and war, like in Sudan where Khartoum-based Beam Reports reported[73] on an influence campaign in March 2024 in which a British radio journalist's X account posted an unsourced audio clip[74] purporting to show a secret

---

[67] https://pmc.ncbi.nlm.nih.gov/articles/PMC7775399
[68] https://www.kas.de/documents/285576/0/Study+_+AI-Generated+Disinformation+in+Europe+and+Africa+-+Ebook.pdf/e0f7ba1d-0e28-5770-ee2f-ee612d6666d7?version=1.0&t=1739539620867
[69] https://www.freiheit.org/sub-saharan-africa/disinformation-wars-protecting-democracy-africas-digital-age
[70] https://africainfact.com/the-challenges-of-ai-driven-political-disinformation-in-nigeria/
[71] https://journal.strathmore.edu/index.php/jipit/article/download/208/227/612
[72] https://www.dhs.gov/sites/default/files/publications/increasing_threats_of_deepfake_identities_0.pdf
[73] https://www.beamreports.com/2024/04/05/الذكاء-الاصطناعي-فصل-جديد-من-حروب-ال/
[74] https://x.com/jonnygould/status/1768345232184148139?s=20

meeting between warring militia leaders discussing a planned coup. AI audio detection tools exposed the ruse, but only after the clip had been reshared over a hundred times. While rarely effective and its poor quality easily detectable from a lack of available Sudanese Arabic training data, even low-quality AI-generated audio can provide local politicians the cover of the liar's dividend, and more so in the chaos of a civil war.[75] As open source development of Sudanese Arabic OSFMs like Duaa Alshareif's Zol-RoBoBERTa model[76] and the pre-trained encoders like SudaBERT[77] continue to iterate and improve, so too will the effectiveness of disinformation campaigns.

African digital fraud has also seen a resurgence in the wake of OSAI, as Nigerian Prince scams that promise fake fortunes have waned in effectiveness over the years. Still mentioning Nigeria and other African countries, African fraudsters now use commercial generative AI to craft more effective phishing emails[78] and open source voice and face modulation tools to conduct sophisticated romance and investment scams. The rise in AI-enhanced romance scams has been an especially insidious trend and increasingly popular with Nigeria's "Yahoo Boys", decentralized, coordinated groups of professional scammers who have been active since the earliest days of the global internet.[79] [80] African scammers often use OSAI apps like DeepFace Lab and commercial AI text-to-speech apps like ElevenLabs[81] if targeting English speakers or one of the OSAI tools for African languages mentioned above if targeting local victims.[82] While

---

[75] https://africanarguments.org/2024/10/the-deepfake-is-a-powerful-weapon-in-the-war-in-sudan/
[76] https://github.com/DuaaAlshareef/Sudanese-Arabic-Dialect-Encoding
[77] M. Elgezouli, K. N. Elmadani and M. Saeed, "SudaBERT: A Pre-trained Encoder Representation For Sudanese Arabic Dialect," *2020 International Conference on Computer, Control, Electrical, and Electronics Engineering (ICCCEEE)*, Khartoum, Sudan, 2021, pp. 1-4, https://ieeexplore.ieee.org/document/9429651
[78] https://abnormal.ai/blog/generative-ai-nigerian-prince-scams
[79] https://www.wired.com/story/yahoo-boys-real-time-deepfake-scams
[80] https://veriti.ai/blog/veriti-research/how-deepfakes-resurrect-the-nigerian-prince-scam/
[81] https://www.youtube.com/watch?v=_Mk12ol_KH4&t=419s
[82] Amatika-Omondi, Faith. (2022), *The Regulation of Deepfakes in Kenya.* Journal of Intellectual Property and Information Technology Law, Vol. 2, Issue 1. p.145

African nations continue to coordinate cybercrime regulation through bodies like the AU Convention on Cyber Security and Personal Data Protection (Malabo Convention) and develop enforceable regulation specific to OSAI harms, several advanced laws still govern AI-enabled cybercrime like Mauritius' Cybersecurity and Cybercrime Act of 2021[83], Nigeria's Cybercrimes Act of 2015[84] and its 2024 Amendment Act,[85] and South Africa's Cybercrime Act of 2020,[86] each of which promises convicted offenders more than ten years in prison and heavy fines. More encouragingly, transnational enforcement bodies like the African Union Mechanism for Police Cooperation (AFRIPOL) are actively optimizing their investigative methods and tools to tackle AI crime.[87]

OSAI in Latin America: Strategic Optimism Against Infrastructural Gaps

Like Africa, Latin America's OSAI ecosystem and innovation potential has been plagued by persistent underfunding, regulatory fragmentation, and compute constraints. However, unlike Africa, Latin America benefits from more linguistic unity in the dominance of Spanish and Portuguese on the continent and by more robust and advanced civil society and scientific communities. Across the region, Brazil has emerged as an undisputed leader in OSAI for its advanced AI governance frameworks, significant investments in cloud computing infrastructure, and because it has the largest number of active AI companies in the region at 154 active firms.[88] Along with Brazil, the 2024 Latin America AI Index benchmarking report by Chile's National Center of Artificial Intelligence (CENIA) (and 19 other regional and international partner and collaborator organizations) ranks Chile and Uruguay as the three most advanced AI developing

[83] https://www.icta.mu/documents/2021/12/cybersecurity_act_2021.pdf
[84] https://www.nfiu.gov.ng/images/Downloads/downloads/cybercrime.pdf
[85] https://cert.gov.ng/ngcert/resources/CyberCrime__Prohibition_Prevention_etc__Act__2024.pdf
[86] https://www.gov.za/sites/default/files/gcis_document/202106/44651gon324.pdf
[87] https://au.int/en/pressreleases/20240522/african-union-strengthens-investigation-capabilities-virtual-assets-and
[88] https://www.latamrepublic.com/how-many-ai-companies-are-there-in-latin-america/

nations in the region. Though slower than their counterparts in Africa in aligning on continental strategy, the Latin America AI Index is one of several regulatory and research collaborations asserting the digital sovereignty of Latin American nations.[89]

Currently, Brazil's draft AI Bill,[90] its 2018 General Data Protection Law[91] and the 2022 United Nations (UN) Educational, Scientific and Cultural Organization (UNESCO) Recommendations on the Ethics of Artificial Intelligence[92] serve as conceptual blueprints for rights-based governance of commercial and open source AI in the region. The UN Economic Commission for Latin America and the Caribbean (ECLAC),[93] Red de Inteligencia Artificial de Latinoamérica (RAIL),[94] and other development consortiums and groups in the region have pushed for regional cooperation, capacity building, and ethical standards as the region's key drivers of AI advancement.

Brazil's early and unparalleled regional success in its approach to fostering an OSAI ecosystem primarily came from its eagerness to fund academic and entrepreneurial ventures for OSFM development as well as the organization and centralization of its dedicated AI institutions. Starting in 2021 when Brazil published its National AI Strategy, the government prioritized and built Brazil's AI Observatory (OBIA), which collects and centralizes data from around Brazil on how AI adoption and impact in industry, government, health, and education, distilling it for policy makers and other stakeholders. Launched in 2022 by Brazil's Ministry of Science, Technology and Innovation (MCTI), OBIA's core team brings together experts from multiple

---

[89] https://indicelatam.cl/wp-content/uploads/2025/01/ILIA_2024_Ingles_020125_compressed.pdf
[90] https://www.cov.com/en/news-and-insights/insights/2025/02/brazils-digital-policy-in-2025-ai-cloud-cyber-data-centers-and-social-media
[91] Lei Geral de Proteção de Dados (LGPD) (Brazil General Data Protection Law), Law No. 13,709, Aug. 14, 2018
[92] United Nations Educ., Sci. & Cultural Org. (UNESCO), *Recommendation on the Ethics of Artificial Intelligence* (Nov. 23, 2021), https://unesdoc.unesco.org/ark:/48223/pf0000381137.
[93] https://www.cepal.org/en/pressreleases/latin-american-and-caribbean-countries-advocated-deepening-regional-cooperation
[94] Red de Inteligencia Artificial de Latinoamérica (RAIL) https://www.rial.international/nosotros

regional and international organizations focused on AI development and policy, and has 11AI centers in Brazil feeding it data. Then in August 2024, Brazilian President Lula Inacio da Silva announced that the government will invest 23 billion reais or $4.07 billion between 2024 and 2028 toward sustainable and publicly beneficial AI development. This included 14 billion reais for business innovation projects at AI companies and startups, 5 billion reais for more data centers and high-performance compute, and finally 4 billion reais for training initiatives, public service improvements, and AI regulatory development.[95]

Civil society in Latin America has not been idle either. Several organizations have served as watchdogs, holding AI development in Latin America to rights-based governance standards - similar to Europe. The public advocacy NGO Derechos Digitales has written extensively of the harms of government-employed AI tools, their opacity, and their ethically dubious usage by Brazil in profiling the unemployed for government employment, by Chile's Child Alert System AI that generates a "risk index" to predict the violation of a child's rights, and by Colombia's use of its PretorIA project to predictively assess judicial protection of fundamental rights in Colombia's Court.[96] Other organizations like the feminist tech advocacy organization Coding Rights[97] and ARTICLE 19[98] also advocate for responsible AI and call out societal downstream harms. UN organizations like UNESCO and ECLAC continue to advocate for responsible OSAI in Latin America, with the latter bringing together regional government agencies like Chile's CENIA and Ministry of Science, Technology, Knowledge and Innovation, and civil society public good aggregators like Fundaciõn Encuentros Del Futuro for collaborative discussions on

[95] https://www.reuters.com/technology/artificial-intelligence/brazil-proposes-4-billion-ai-investment-plan-2024-07-30/
[96] https://www.derechosdigitales.org/24559/una-voz-firme-para-poner-los-derechos-humanos-en-el-centro-de-la-inteligencia-artificial/
[97] https://codingrights.org/en/
[98] https://articulo19.org/sobre-articulo19/

OSAI development.[99] Discourse among these varied groups generally reflects skepticism of OSAI, focusing on the risks of downstream harms like misinformation, labor exploitation, algorithmic discrimination, and exploitative data extraction.

The growing AI industry in Latin America has similar but nuanced compute infrastructural tensions to those of Africa, primarily around unequal energy and natural resource distribution. There is no shortage of compute investment in Latin America; Patria Investimentos has invested $1 billion in a hyperscale data center platform across Brazil, Mexico and Chile to be powered by renewable energy,[100] Scala Data Centers has invested $500 million with a plan to build a "Scala AI City" massive data center complex,[101] and US tech giants Microsoft,[102] Google[103] and Amazon[104] are both investing hundreds of millions of dollars into cloud data centers across the continent. The majority of these investments, however, are in Brazil, which benefits from an 85% clean energy grid that supports the high demands of these data centers, leaving compute access on the continent fragmented and underdeveloped.[105] Moreover, the 70% of Latin Americans with internet access mostly live in urban areas and enjoy reliable access, while only about 40% of rural Latin Americans have access to basic internet. The AI data center and compute industry in Latin America is poised to grow precipitously, but boosts to domestic OSAI will likely only be felt by its urban residents in the short term.

---

[99] https://inria.cl/en/towards-responsible-and-transparent-artificial-intelligence-chile-inria-chile-brings-together
[100] https://getcoai.com/news/patria-commits-1b-to-build-ai-powered-data-centers-in-latin-america/
[101] https://www.datacenterfrontier.com/site-selection/article/55140968/brazils-scala-data-centers-secures-latam-dominance-plans-to-develop-ai-city
[102] https://news.microsoft.com/pt-br/microsoft-announces-14-7-billion-reais-investment-over-three-years-in-cloud-and-ai-infrastructure-and-provide-ai-training-at-scale-to-upskill-5-million-people-in-brazil/
[103] https://latinamericareports.com/off-the-back-of-snowflake-announcement-google-to-invest-850-million-in-latin-america-to-build-infrastructure-for-ai-and-cloud-computing/
[104] https://www.reuters.com/technology/amazons-aws-unit-invest-18-bln-brazil-through-2034-2024-09-11
[105] https://hispanicexecutive.com/ai-adoption-in-latin-america-how-the-region-sets-its-own-terms

Finally, Latin America contends with cybersecurity and safety tradeoffs that OSAI brings in much the same way as Africa, especially with OSFMs optimized for local languages and contexts. On February 27, 2024, Brazil's Electoral Court approved the passage of Resolution No. 23.732, which for the first time regulated the use of AI tools in Brazilian elections:

> *"The use in electoral propaganda, in any modality, of synthetic multimedia content generated using artificial intelligence to create, replace, omit, merge or change the speed or superimpose images or sounds imposes on the person responsible for the propaganda the duty to inform, in an explicit, prominent and accessible way, that the content was manufactured or manipulated and the technology used."*[106]

Yet, when Brazil held municipal elections in October 2024, watchdog organization DFRLab identified 78 instances of synthetic content across 67 cities related to local candidates in video and audio across multiple social media platforms, 65 targeting mayoral candidates. These included pornography deepfakes of female candidates, manipulated content of false accusations, media figure impersonations, and AI-manipulated content to deceive viewers about electoral events. Organized crime has also benefited; an investigation by Peruvian news outlet El Comercio discovered 55 instances of AI-generated audio deepfakes used in fraud and extortion cases in 2023[107].

Recommendations

Policy makers in the Global South should:

---

[106] Resolução TSE No. 23.732, de 27 de fevereiro de 2024, art. 9-B, Tribunal Superior Eleitoral (Braz.), https://www.tse.jus.br/legislacao/compilada/res/2024/resolucao-no-23-732-de-27-de-fevereiro-de-2024.

[107] https://elcomercio.pe/lima/clonacion-de-voz-para-estafar-con-inteligencia-artificial-como-funciona-esta-modalidad-y-que-recomendaciones-seguir-inseguridad-deepfake-ciberdelincuencia-hackers-secuestros-noticia

1. *Enact legislation specifically tailored to OSFM risks.* Kenya's Draft DKS 3007 AI Code of Practice and Brazil's recent Resolution on digital propaganda in elections are excellent starting frameworks for addressing OSFM risks, with Kenya's draft specifically regulating transparency, auditability, and explainability of all AI models.
2. *Promote, fund, and scale regional education and upskilling initiatives and sponsor international conferences locally.* Education initiatives should include education on both developing OSAI as well as discerning content and processes involving AI to improve readiness for deceptive uses. Building AI education into all education fields creates a more prepared and integrated workforce as well with international appeal.

Western AI companies and governments should:

1. *Hardcode provenance features into all models.* If downstream malicious uses cannot be mitigated, users should at least be able to detect content produced by models derived from Western AI architecture and pre-training.
2. *Foster local AI development talent and create regional hiring pools.* Incorporating Global South perspectives and engineering approaches in model development both creates more lucrative future customers in those regions and vastly improves global datasets and architecture.

Global South developers and civil society should:

1. *Communally develop norms and certifications of trusted models and developers.* Democratically creating earned certifications of trust and reliability by Global

South users both increases adoption locally and distinguishes beneficial OSAI from malicious or broken OSAI.

Conclusion

While daunting and complex, the governance challenges OSAI has introduced to the Global South are nothing new; the Android operating system, Chrome and Firefox browsers, and the Linux browser all introduced similar benefits of collaboration and innovation as well as newer and more efficient ways for malicious actors to victimize people without detection. These technologies each also came from the Global North and shaped the digital development of the Global South in many good ways and bad. What is different with OSAI, however, is the intensity of the challenges and perhaps the higher stakes they introduce.

Rapidly developing AI with more capabilities threatens to both replace workers in developing economies and subjugate them to more exploitative data management tasks. Models deployed at scale require high performance compute, which takes a far higher toll on often shaky energy grids, precarious natural resources,[108] and land availability than any previous wave of open source technology. AI allows for digital fraud to steal money in unprecedented amounts and speed, and floods electoral information ecosystems with more synthetic and dubious content than voters can easily parse.

Yet, OSAI also lowers technical and financial barriers to entry for the Global South at a pivotal early stage of this technology's development, allowing the Global South to meaningfully participate in global debates with cultural and linguistic inclusion and parity. As this paper shows, while still fragmented and mostly aspirational,

[108] https://restofworld.org/2025/ai-resource-extraction-chile-indigenous-communities/

governments in Africa and Latin America are asserting their sovereign goals and laying the foundation for equitable AI development. However, without targeted and meaningful investments in open infrastructure, cohesive regional legal frameworks, and decentralized communal governance, these continents risk falling back into the same capacity and Western dependency traps they have worked so hard to escape.

This paper also demonstrates the sheer size and drive of the rapidly emerging OSAI communities in each region. The US, EU, and China cannot afford to treat Africa and Latin America as anything less than serious contenders and invaluable partners in driving AI's development. If companies and governments in the US and China can manage to embrace Africa and Latin America as partners in AI's technical governance and if the EU is can coordinate early and frequently with both regions on governance of newer forms of AI, humanity as a whole stands to benefit from AI more than it has from any other technology that came before.

GENERATIVE AI STATEMENT

I used ChatGPT 4o and Gemini 2.5 or the following for this paper:

1. Described my idea and subtopics and asked ChatGPT to generate a potential outline for me.
2. For each section, once I had researched relevant laws and regulations I asked ChatGPT and Gemini to look for additional articles and find relevant civil society organizations in African and Latin American countries. I then went to each link and conducted deeper analysis and research on my own
3. I asked ChatGPT to format my citations in BlueBook format, but was unsuccessful for all of them. I validated that all links are accurate though.