ISSN: 2688-8653

Generative Artificial Intelligence in the Global South: Navigating Economic Transformation, Inequality, and Governance Challenges

Yi Li[1, a]

[1]School of Social and Political Science, University of Edinburgh, Edinburgh, EH8 9YL, the United Kingdom

[a]liyiiii04@163.com

Abstract

Generative artificial intelligence (AI)—systems capable of producing novel text, images, and other content—is rapidly advancing and spreading across the globe. This paper examines the implications of generative AI for countries in the Global South, focusing on its potential to drive economic transformation, its impact on social and economic inequalities, and the governance challenges it presents. A qualitative analysis of current literature and policy reports reveals that generative AI holds great promise for boosting productivity and innovation in developing economies, for instance through new business opportunities and improved service delivery. However, these benefits may be unevenly distributed: limited digital infrastructure, skills gaps, and biases in AI systems risk deepening existing divides between and within societies. Moreover, governance and regulatory frameworks in many Global South countries are struggling to keep pace with AI advancements, raising concerns around ethical use, data privacy, and accountability. The findings underscore the need for proactive strategies to harness generative AI for inclusive development—such as investing in digital infrastructure and education, and participating in international AI governance initiatives—to ensure this technological revolution narrows rather than widens global inequalities.

Keywords

Generative AI; Global South; AI Divide; Inclusive Development.

1. Introduction

Generative artificial intelligence (AI) has emerged as a disruptive technology with the ability to autonomously produce text, images, code, and other media. Recent advances, exemplified by large language models such as OpenAI's ChatGPT and generative art systems like DALL-E, demonstrate how AI can perform complex content-creation tasks that were once exclusively human. These developments are expected to significantly influence economic and social systems worldwide. While much of the public discourse and research on AI focuses on impacts in advanced economies, there is growing recognition that countries in the **Global South**—a term broadly referring to developing and emerging economies across Africa, Asia, Latin America, and the Caribbean—will experience distinct opportunities and challenges from generative AI [1].

At the same time, there are serious concerns that the benefits of AI may be unevenly distributed. Developing countries often face limitations in digital infrastructure, skill levels, and institutional capacity, which could hinder their ability to fully leverage AI innovations [1]. Without deliberate intervention, generative AI might **exacerbate existing inequalities**—for instance, by automating routine jobs that are prevalent in low-income economies or by reinforcing biases against underrepresented groups [2,3]. The prospect of an "AI divide"

ISSN: 2688-8653

between those who can afford and effectively use these technologies and those who cannot is a key issue that warrants thorough investigation[4]. In light of both the transformative potential and the risks associated with generative AI in the Global South, this study aims to examine three interrelated aspects: economic transformation, inequality, and governance.

2. Literature Review

2.1. Economic Transformation Potentia

A growing body of literature explores the macroeconomic impact of AI on developing economies. Broadly, these studies highlight significant potential gains in productivity and economic growth. PricewaterhouseCoopers, for instance, estimates that AI technologies could add as much as **$15 trillion** to the global economy by 2030, primarily through productivity improvements and enhanced consumer demand[5]. If harnessed effectively, a portion of these gains could accrue to countries in the Global South via increased efficiency in sectors like agriculture, manufacturing, and services. For example, generative AI can automate routine content-generation tasks, enable rapid prototyping and design in manufacturing, and support decision-making in resource-constrained environments [6]. There is optimism that such capabilities might allow developing nations to *leapfrog* certain stages of development, using AI to accelerate growth in areas such as online services, fintech, and e-government [1].

However, the literature also cautions that these economic benefits will likely be unevenly distributed across countries. A McKinsey Global Institute analysis indicates that early AI adopters (typically higher-income countries and China) are poised to capture a disproportionately large share of AI's economic upside, while late-adopting economies risk missing out on much of the potential gains [7]. This scenario could exacerbate global economic disparities if Global South countries lag in adoption. Moreover, some scholars point out that generative AI might disrupt traditional development pathways. UNCTAD warns that advances in automation (including AI-driven robotics and software) could erode the labor-cost advantages that many developing countries have relied on, particularly in manufacturing and business-process outsourcing[2]. If routine factory jobs or call-center roles are increasingly automated by AI, lower-income nations may face new challenges in job creation and export-led growth.

On the other hand, researchers also identify new opportunities that generative AI could unlock in the Global South. One promising area is the creative and knowledge sectors: AI-generated content could empower small businesses and entrepreneurs in domains like digital marketing, design, and local media production, even without large budgets or specialized human talent. In addition, generative AI tools tailored to local needs—such as chatbots providing legal or health information in indigenous languages—have begun to emerge, suggesting the technology's capacity to broaden access to information and services [1]. Pilot projects in a few countries have used AI to translate between major world languages and lesser-known local languages, or to generate educational materials for remote schools, hinting at AI's potential to improve information accessibility. Overall, the economic literature paints a picture of generative AI as a double-edged sword: it can be a catalyst for innovation and development, but only if accompanied by strategies to adopt the technology and adapt economies to the changes it brings.

2.2. Inequality and Inclusion

A central theme in the literature is the risk that generative AI will **exacerbate existing inequalities**, both between countries and within them. The concept of a digital divide – the gap in access to digital technologies between different populations – is well established [1]. With generative AI, this divide could deepen into an "AI divide." Advanced economies and wealthy

ISSN: 2688-8653

segments of society are more likely to have the high-quality internet connectivity, computing power, and education needed to deploy AI effectively, whereas poorer communities may be left behind. This gap is evident in global indices: for example, the Government AI Readiness Index shows that most low-income countries, especially in Sub-Saharan Africa, score far lower on AI preparedness than high-income countries [4]. Such disparities suggest that without intervention, generative AI may primarily benefit those who are already relatively advantaged, increasing the gulf between the Global North and South in terms of technological empowerment and economic gains.

Within countries of the Global South, unequal access to AI tools and skills could amplify domestic social inequalities. Urban areas and elites are better positioned to utilize AI, while rural populations, the poor, and other marginalized groups may see little benefit from these innovations. Furthermore, biases present in AI models could adversely affect underrepresented communities. Large language models often perform worse for inputs in languages or dialects that are not well-represented in their training data [8]. As a result, users who speak minority languages or dialects prevalent in the Global South might receive less accurate or useful AI-generated outputs, effectively marginalizing their language communities in the digital sphere. There are also documented cases of AI systems exhibiting racial or gender biases due to skewed training data[3]. In a generative AI context, this could translate into stereotypical or derogatory portrayals of certain groups in AI-generated content, which in turn can perpetuate social biases and exclusion.

Another facet of inequality highlighted by researchers is the concentration of AI development power in a few countries and companies, raising concerns of a new form of technological dependency. A framework dubbed "AI colonialism" argues that the Global South risks remaining a consumer of AI products developed in the Global North, without equitable input or control[9]. This dynamic could replicate colonial patterns of resource extraction and dependence, where developing countries provide data or cheap labor for AI development but do not reap proportional benefits. Indeed, the labor practices behind generative AI have come under scrutiny. Leading AI firms often rely on outsourced workers in developing countries to label data or filter harmful content for AI training datasets. For instance, OpenAI's development of ChatGPT involved Kenyan contract workers who were paid less than $2 per hour for screening toxic content [10]. Such cases illustrate how the burdens of AI development (in the form of tedious or even psychologically taxing labor) can fall on lower-income communities, while the profits and advanced technological capabilities accrue elsewhere.

In light of these concerns, scholars and international organizations stress the importance of making generative AI more inclusive. Proposed measures include investing in digital infrastructure in underserved areas, expanding education and training programs to broaden AI literacy, and encouraging the development of AI applications in local languages and contexts [11]. There is also advocacy for greater involvement of researchers and institutions from the Global South in international AI initiatives, to ensure that the technology and its datasets better reflect diverse cultures and needs. The literature suggests that without deliberate efforts along these lines, generative AI could reinforce and even exacerbate socio-economic inequalities, undermining its potential as a tool for inclusive development.

2.3. Governance and Policy Challenges

The rapid emergence of generative AI poses significant governance challenges, especially for countries in the Global South that may not yet have robust regulatory frameworks for AI. The literature indicates that policy responses to AI are still nascent in many developing nations. Only a limited number of countries in Africa, Asia, or Latin America have published national AI strategies or enacted laws specifically addressing AI[4]. This lag in policy development can be attributed to constrained expertise and resources, as well as the prioritization of other pressing

ISSN: 2688-8653

development issues. As a result, many Global South countries currently rely on general ICT regulations or data protection laws to indirectly govern AI applications, which may be insufficient for the unique ethical and societal issues raised by generative AI.

A key concern in governance is the potential misuse of generative AI and the difficulty of monitoring and regulating its outputs. Generative AI can be used to create highly realistic fake images, videos, or news, which could be weaponized to spread misinformation or hate speech in politically volatile contexts. Without adequate legal frameworks and technical capacity to detect and manage such abuses, countries could face threats to social stability and election integrity. Analysts have warned, for example, that deepfakes might be deployed to incite conflict or manipulate voters in countries with fragile democracies. Additionally, issues of privacy and data security are heightened by generative AI, since these models often train on massive datasets that may include personal information. Developing appropriate regulations for data collection, consent, and usage in AI systems remains an ongoing challenge for policymakers.

Another governance issue is the limited representation of Global South perspectives in the global discourse on AI ethics and standards. A review by Jobin, Ienca and Vayena found that among dozens of AI ethics guidelines published worldwide, the vast majority originated from institutions in Europe, North America, or East Asia, with relatively few contributions from Africa or Latin America[12]. This imbalance suggests that international norms for AI are being shaped predominantly by advanced economies, potentially overlooking context-specific values and concerns of less-developed nations. Consequently, frameworks designed without sufficient input from the Global South might not fully address issues such as local cultural sensitivities, capacity constraints, or development priorities.

However, there are initiatives working to bridge this governance gap. UNESCO's **Recommendation on the Ethics of Artificial Intelligence** is one example of a global framework developed with broad consultation, including many developing countries. It outlines principles—such as fairness, accountability, and inclusiveness—that member states are encouraged to incorporate into their national policies[11] . Similarly, regional bodies and partnerships are emerging to support AI governance in developing contexts – for instance, the African Union has discussed a continental AI strategy, and organizations like the ITU and World Bank have launched programs to help build regulatory capacity for AI in poorer countries. Despite these efforts, implementation remains a challenge. Many governments in the Global South lack sufficient experts, funding, or institutional frameworks (such as dedicated AI agencies or ethics committees) to effectively oversee the fast-moving AI sector.

The literature emphasizes that strengthening governance will be critical to ensure generative AI's risks are managed and its benefits shared widely. Recommendations include developing clear national AI strategies and action plans, updating legal and regulatory instruments to cover AI-specific issues (for example, introducing requirements for algorithmic transparency or clarifying liability for AI-driven decisions), and fostering multi-stakeholder engagement. Public-private collaboration can also play a role; governments could work with technology companies and civil society groups to create guidelines for responsible AI deployment in areas like education or banking. In summary, while generative AI offers immense promise, without proactive governance mechanisms the Global South may struggle to mitigate negative outcomes such as ethical lapses, economic disruptions, or erosion of public trust in AI systems.

3. Discussion

3.1. Economic Transformation in the Global South

Addressing RQ1, it is clear that generative AI holds substantial potential to contribute to economic transformation in Global South countries, but realizing this potential is contingent on

ISSN: 2688-8653

the extent of adoption and integration into local economies. Generative AI could serve as a tool for **enhancing productivity** in various sectors. For instance, in agriculture, AI-driven advisory systems might help farmers make better decisions on crop management, and in manufacturing, AI-generated designs could accelerate product development for local enterprises. These improvements can increase output and efficiency, contributing to overall economic growth. Additionally, generative AI may enable the creation of entirely new business models and industries. One example is the rise of local start-ups focusing on AI services – such as firms offering AI-driven translation, content creation, or data analytics tailored to regional markets. As the literature suggests, countries that proactively invest in AI capacity-building and innovation stand to capture a share of the global AI dividend [5]. Indeed, some developing countries are beginning to establish AI research hubs and incubators in partnership with universities and tech companies, aiming to build an ecosystem that can produce home-grown AI solutions.

At the same time, we must acknowledge the **significant barriers** that could prevent many Global South economies from fully benefiting. Without improvements in basic infrastructure (e.g. reliable electricity and broadband internet) and human capital (skilled engineers, data scientists, and entrepreneurs), generative AI might remain underutilized in these regions. The risk of a two-tier outcome is high: a few emerging economies with better preparedness (such as those investing heavily in tech education and innovation) could leap ahead, while poorer nations might stagnate or even fall further behind [7]. Moreover, generative AI might disrupt certain industries that have been traditional avenues for development. As noted in the literature review, automation threatens jobs in manufacturing and service offshoring that many developing economies rely on [2]. In the short term, this disruption could manifest as job losses in sectors like textiles, electronics assembly, or call centers if AI substitutes for human labor. In the long run, however, if managed well, generative AI could also create new types of employment – for example, roles in AI system maintenance, data curation, or integrating AI tools into local businesses – potentially offsetting some losses. The net effect on employment and economic structure will depend largely on policy responses, such as how effectively education systems and training programs can equip workers with skills *complementary* to AI.

In summary, generative AI can be a catalyst for economic transformation in the Global South, but the benefits will not materialize automatically or evenly. Strategic investments in digital infrastructure, education, and innovation ecosystems are needed to enable local firms and communities to leverage AI. Countries that succeed in these areas may witness accelerated growth and development, whereas those that do not may see generative AI deepen existing economic vulnerabilities. Ultimately, to harness AI for economic transformation, Global South nations must not only adopt the technology but also cultivate the surrounding conditions that allow AI-driven productivity gains to translate into broad-based development.

3.2. Implications for Inequality

In relation to RQ2, the adoption of generative AI comes with profound implications for inequality. Without deliberate corrective measures, generative AI could intensify disparities both **between countries** and **within societies**. Internationally, as discussed above, there is a real danger of an **AI divide** where wealthier nations benefit disproportionately from AI-driven growth while poorer nations struggle to access even basic AI tools [4]. This divide is not just about economics, but also about influence: countries at the forefront of AI development and deployment can shape the technology's direction and norms, potentially entrenching their own advantages. For the Global South, catching up requires not only access to AI technology but also participation in its creation and governance, so that their needs and perspectives are represented. If generative AI algorithms continue to be developed primarily with Western data

ISSN: 2688-8653

and perspectives, they may remain less effective or appropriate for Global South contexts – further marginalizing those populations in the digital realm [9].

Within countries, generative AI could widen the gap between those who have the skills and resources to use these tools and those who do not. Highly skilled workers and firms in capital cities might use AI to become more productive and capture higher profits, while lower-skilled workers could face unemployment or stagnating wages if their tasks are automated away. For instance, if AI chatbots replace customer service representatives, the mostly urban, educated tech workforce and business owners may reap cost savings, but thousands of call-center employees (often young workers with moderate education in cities like Nairobi or Manila) could lose their livelihoods. Additionally, social inequalities related to language, literacy, and gender may be exacerbated. English-speaking, tech-savvy users currently get the most out of generative AI systems, whereas rural communities with limited internet access or people who speak languages not well-supported by AI might see little benefit. Women in the Global South, who on average have less access to technology and STEM education due to systemic gender biases, risk being left further behind in an AI-driven economy unless targeted efforts are made to include them in the digital revolution.

Mitigating these inequality impacts will require **proactive measures**. On the technology side, there is a need to make generative AI more inclusive by improving support for diverse languages and cultural contexts. Initiatives to create open datasets and train models for low-resource languages are critical [8], as they would enable more people to interact with AI in their native tongue. Equally important are policies on the socio-economic side: governments and development organizations should invest in digital literacy and skills training programs, ensuring that marginalized groups gain the knowledge needed to use AI tools effectively. Workforce retraining and robust social safety nets will be crucial to help workers displaced by AI find new opportunities. For example, vocational programs could retrain factory or call-center workers for jobs in the digital economy, while education curricula can be updated to emphasize skills that complement AI (such as complex problem-solving, data analysis, or AI oversight roles). Equity-focused interventions—such as subsidizing access to AI-powered services for schools and small businesses in poorer communities, or creating community technology centers—can also help spread the benefits of AI. In essence, addressing inequality in the age of generative AI means consciously designing inclusion into the AI ecosystem. If left to market forces alone, the technology is likely to empower those already in power; but with thoughtful intervention, it could be steered to empower a much broader segment of society.

3.3. Governance Responses and Strategies

Finally, in addressing RQ3, we consider the governance challenges posed by generative AI in the Global South and possible strategies to navigate them. The fast pace of AI development has outstripped the current capacity of many governments to adequately regulate and guide its use. As a result, a primary challenge is **regulatory preparedness**. Many developing countries need to update or create legal frameworks to cover issues specific to AI – such as establishing accountability when AI systems cause harm, ensuring transparency of algorithms, protecting citizens' data used in AI training, and preventing malicious uses of AI-generated content. Crafting such regulations is difficult when expertise is scarce; hence, a common recommendation is for Global South governments to collaborate with international organizations and expert networks. By leveraging resources like UNESCO's AI ethics guidelines or the policy toolkits offered by groups such as the OECD, countries can jump-start their governance frameworks rather than starting from scratch[11].

Another critical governance issue is building **institutional capacity**. Effective AI governance will require skilled personnel (e.g. regulators, legal experts, and data scientists) within government who understand the technology's workings and its societal impacts. Currently,

ISSN: 2688-8653

there is a shortage of such expertise in many Global South administrations. Capacity-building initiatives—such as specialized training programs for policymakers, academic partnerships, and knowledge exchange with countries that have more experience in AI—are vital to fill this gap. Some nations have begun to establish dedicated bodies (like national AI task forces or innovation ministries) to coordinate AI strategy, which is a positive step toward institutionalizing focus on AI. Broad stakeholder engagement is also important: involving academia, industry, and civil society in shaping AI policies can lead to more balanced and context-appropriate outcomes. For instance, consulting local tech companies and community organizations can help policymakers identify practical concerns and cultural values that should inform regulations, thereby increasing the legitimacy and effectiveness of the governance measures.

International cooperation emerges as a key strategy in many governance discussions. Global South countries may benefit from a united front in advocating for their interests within the global AI governance arena. Through alliances or participation in international forums, they can amplify their voice to push for ethical norms and arrangements that account for development needs—such as technology transfer mechanisms, funding for AI capacity in poorer countries, or global agreements on restricting harmful AI uses. There is precedent in other domains (for example, climate change negotiations) where developing countries have coordinated positions to influence global policy. In the realm of AI, a collaborative approach could help ensure that issues like fairness, accessibility, and sovereignty are addressed in international standards. Additionally, many challenges posed by generative AI—such as cross-border disinformation or cyber-security threats—transcend national boundaries and thus require cooperative solutions. Joint efforts in research, standard-setting, and information-sharing can enhance all participants' ability to manage AI responsibly.

Finally, the governance of generative AI must be **adaptive**. This technology is evolving rapidly, and unforeseen challenges will continue to arise (for example, novel types of deepfake fraud or unexpected socioeconomic impacts). Policymakers should adopt a flexible, learning-oriented approach: regularly reviewing and updating AI policies, creating regulatory sandboxes to safely test new AI applications, and being willing to adjust course based on outcomes and new evidence. By doing so, Global South countries can better navigate the uncertainties of the generative AI era. Importantly, governance is not just about mitigating risks—it is also about guiding technology toward social good. Encouraging and enabling innovation in AI applications that address local development priorities (such as AI for agriculture, education, or disaster management) under appropriate oversight can ensure that the governance framework is empowering rather than stifling. In sum, effective governance of generative AI in the Global South will likely require a mix of adopting international best practices and tailoring solutions to local contexts. Strengthening laws and institutions, investing in human capacity, and engaging in global dialogues are all part of the strategy to harness generative AI responsibly. The overarching goal is to create an environment in which generative AI can be utilized for public good and economic development, while safeguarding society against its inherent risks.

4. Conclusion

Generative AI is poised to be a transformative force worldwide, and the trajectory it takes in the Global South will significantly influence the region's development outcomes. This paper has examined the technology's potential for economic transformation, its implications for inequality, and the governance challenges it raises. The analysis indicates that, if effectively leveraged, generative AI could drive substantial economic gains in developing countries by improving productivity and fostering innovation. However, these benefits are far from

ISSN: 2688-8653

automatic; they require concerted efforts to build the necessary infrastructure, human capital, and regulatory environments.

Generative AI presents both an opportunity and a test for the Global South. It offers tools that could accelerate progress on economic and social objectives, but it could also deepen divides if mismanaged. Whether it becomes an engine of inclusive growth or a source of new inequalities will depend on the actions taken now by policymakers, businesses, and civil society in these countries. By learning from early experiences, investing in people and infrastructure, and crafting forward-looking governance frameworks, Global South nations can better navigate the generative AI revolution. Future research should continue to monitor the impacts of generative AI in diverse contexts and help refine strategies to maximize its benefits for all.

References

[1] Capraro, V., Lentsch, A., Acemoglu, D., Akgun, S., & Williams, M. (2024). The impact of generative artificial intelligence on socioeconomic inequalities and policy making. *PNAS Nexus, 3*(6), pgae191. https://doi.org/10.1093/pnasnexus/pgae191

https://openknowledge.worldbank.org/handle/10986/23347 (Accessed: 17 April 2025).

[2] Stemmler, H. (2023). Automated deindustrialization: How global robotization affects emerging economies—Evidence from Brazil. *World Development, 171*, 106349. https://doi.org/10.1016/j.worlddev.2023.106349

[3] Bender, E. M., Gebru, T., McMillan-Major, A., & Mitchell, S. (2021). On the dangers of stochastic parrots: Can language models be too big? *Proceedings of the 2021 ACM Conference on Fairness, Accountability, and Transparency (FAccT)*, 610–623. https://doi.org/10.1145/3442188.3445922

[4] Khan, M. S., Umer, H., & Faruqe, F. (2024). Artificial intelligence for low-income countries. *Humanities & Social Sciences Communications, 11*, 1422. https://doi.org/10.1057/s41599-024-02791-z

[5] Banerjee, A., Kabadi, S., & Karimov, D. (2023). The transformative power of AI: Projected impacts on the global economy by 2030. *Review of Artificial Intelligence in Education, 4*, e020. https://doi.org/10.5555/raie2023.020

[6] World Economic Forum. (2020). *The future of jobs report 2020*. Geneva: World Economic Forum. http://www3.weforum.org/docs/WEF_Future_of_Jobs_2020.pdf

[7] Alonso, C., Berg, A., Kothari, S., Papageorgiou, C., & Rehman, S. (2022). Will the AI revolution cause a great divergence? *Journal of Monetary Economics, 127*, 18–37. https://doi.org/10.1016/j.jmoneco.2022.03.002

[8] Joshi, P., Santy, S., Budhiraja, A., Bali, K., & Choudhury, M. (2020). The state and fate of linguistic diversity in natural language processing. *Proceedings of the 58th Annual Meeting of the Association for Computational Linguistics (ACL 2020)*, 6282–6293. https://aclanthology.org/2020.acl-main.560

[9] Mohamed, S., Png, M.-T., & Isaac, W. (2020). Decolonial AI: Decolonial theory of AI. *Philosophy & Technology, 33*(4), 659–684. https://doi.org/10.1007/s13347-020-00405-8

[10] Le Ludec, C., Cornet, M., & Casilli, A. A. (2023). The problem with annotation: Human labour and outsourcing between France and Madagascar. *Big Data & Society, 10*(2). https://doi.org/10.1177/20539517231193364

[11] Robinson, M. (2025). The establishment of an international AI agency: An applied solution to global AI governance. *International Affairs, 101*(3), 627–645. https://doi.org/10.1093/ia/iiad018

[12] Jobin, A., Ienca, M., & Vayena, E. (2019). The global landscape of AI ethics guidelines. *Nature Machine Intelligence, 1*(9), 389–399. https://doi.org/10.1038/s42256-019-0088-2