

**THE NEW CIVILIZATION, ARTIFICIAL INTELLIGENCE AS THE STANDARD OF  
THE DIGITAL ECONOMY:  
DIGITAL ECONOMY POLARIZATION IN THE GLOBAL SOUTH**

**Dr. Yoochul Lee**

Lecturer, Department of Political Science and International Relations, Seoul National University

[yoochul.lee@snu.ac.kr](mailto:yoochul.lee@snu.ac.kr) / [uchul83@gmail.com](mailto:uchul83@gmail.com)

<https://orcid.org/0000-0002-3952-4878>

**Abstract**

This study examines the impact of digital transformation, driven by advances in artificial intelligence (AI), on the global North-South divide. Unlike previous research that focuses on the U.S.-China rivalry, this study explores potential crises arising from disparities between the northern and southern hemispheres. The Fourth Industrial Revolution, characterized by AI and machine learning, has ushered in a digital economy, intensifying AI competition among major nations like the U.S. and China. This competition spans research, talent, infrastructure, and commercialization, with the U.S. leading in private investment and China in government-led initiatives. The study suggests that this rivalry could deepen the North-South divide, as advanced countries dominate AI development, sidelining the Global South. Nonetheless, the digital economy could offer growth opportunities for developing nations, enhancing their participation in global trade. The paper investigates how AI development affects the gap between developed and developing countries and explores global governance frameworks to address these disparities.

**Keywords:**

AI, Digital Transition, Digital Economy, Global South, North-South Conflict

**I. Introduction**

The objective of this study is to examine the impact of the digital transformation of the international economic system, driven by advancements in AI technology, on the global North-South divide. In particular, it seeks to explore the potential crises arising from the disparity between the northern and southern hemispheres. This study distinguishes itself from previous research, which has primarily focused on digital economy and technological competition as a U.S.-China hegemonic struggle, thereby ensuring its significance and originality.

The term "Fourth Industrial Revolution," introduced at the World Economic Forum in Davos, Switzerland (January 2016), reflects the industrial structural changes brought about by the development of machine learning and artificial intelligence (Schwab, 2017), marking the commencement of the international economy's transition to a digital economy. As AI and scientific technologies are anticipated to bring revolutionary changes across various fields, including industry and economy, major countries worldwide are actively engaging in AI competition. This competition is not merely one-dimensional; it spans multiple areas such as research and development (R&D), talent, infrastructure, and commercialization, embodying the multifaceted nature of technological competition within the digital transformation of the international economic system. This context necessitates the comprehensive consideration of the innovative capabilities of research institutions and the strategies of supporting governments.

At the forefront of this transformative competition in the international economic system is the rivalry between the United States and China. Their technological competition in artificial intelligence is perceived as a race for technological hegemony, viewed as an intense struggle for future dominance. The United States demonstrates overwhelming superiority in private investment areas such as talent, infrastructure, and R&D compared to other countries, with its private investment scale (\$335.2 billion) surpassing China's (\$103.7 billion) (Bomey 2024). Nonetheless, this competition is underpinned by the fact that the U.S. and China have developed markedly different AI ecosystems (Lazard 2023). While the U.S. focuses on large-scale funding through private investment, its cohesive national strategy for AI integration is relatively weak. In contrast, China, promoting government-led industrial policies, not only has a higher proportion of government investment compared to the U.S. but also builds an organic system centered on state-owned enterprises, which warrants attention. This can be observed in operational environments where the U.S. lags behind China. This results from the U.S. government's AI regulation policy fluctuating between self-regulation and government regulation, reflecting the difficulty of achieving public consensus on the expansion of AI use. Conversely, the Chinese government has been swift in moving at the national strategy level, as evidenced by its announcement of new rules for AI developers and distributors in April 2023, fundamentally conflicting with the U.S. AI paradigm by implementing core socialist values such as national sovereignty and prevention of system subversion. This fierce competition arises from the potential of emerging technologies to bring changes not only to the economy but also to various social sectors like military, education, health, and culture, and it is predicted to accelerate further.

However, along with the potential for AI to promote economic growth, there are also various negative aspects. Particularly, the development, dissemination, and utilization of AI technology are predominantly led by advanced countries, including the United States and China, while the Global South remains relatively marginalized. While the issue of the North-South divide has been a traditional issue in international politics, the renewed focus on this issue during the digital economy transition is due to the accelerated informationization, with IT technologies such as the internet and smartphones more clearly affecting the North-South gap (UNCTAD, 2020). This trend has been accelerated by rapid changes in production and economic environments through the pandemic, the expansion of automation and smart factories, and the growth of the online commerce market, all of which have reinforced the gap in various aspects.

Developing countries, compared to advanced countries, generally have lower levels of digital infrastructure or technological innovation and lack the capacity for digital transformation, with scant resources beyond labor. In this context, the ongoing digital transformation in traditional manufacturing sectors, such as the automotive industry, particularly with the spread of automation and smart factories, makes it easier for machines to replace the relatively simple, repetitive labor that developing countries have handled within the global value chain. This could potentially reduce, rather than enhance, the status of developing countries, further expanding the gap between developing and advanced countries.

Nevertheless, not only negative aspects exist. The digital economy transformation of advanced countries can also present growth opportunities for developing countries. In fact, some regions of developing countries, such as Mexico, have actively participated in the global value chain, benefiting from increased trade with advanced countries. As smart factories utilizing robots or 3D technologies spread in advanced countries, production capacity and income increase, boosting

demand for final products and activating trade with developing countries providing components or intermediate goods (UNCTAD, 2020). A representative case is the transaction between developing country producers and advanced country consumers in online commerce. However, this also carries numerous potential negative factors, such as platformization of online commerce companies, data monopolization, changes in value chains, and reduced employment effects.

Therefore, amidst the ongoing major trend of digital transformation of the international economic system, how does the development and utilization of AI technology affect the gap between advanced and developing countries? Will AI technology amplify the existing gap between the global North and South, or could it serve as a ladder of opportunity? What crises might arise if developing countries are marginalized in AI development and utilization in the long term? This paper examines the differences between advanced and developing countries in AI infrastructure investment and utilization, explores discourses on AI and developing countries, and seeks ways in which AI can enhance the global political-economic status of the Global South. Additionally, it aims to explore the potential for global governance for the Global South within the asymmetric relationship between the Global South and North, which may arise from various crises. This could provide insights into the survival prospects of the Global South within the digital transformation system amidst crises.

In this paper, we first examine the digital international political-economic landscape being shaped by leading AI countries through the lens of U.S.-China competition, and the normative efforts of the EU and the UK. Next, we empirically review the asymmetric situation facing the Global South amidst the current digital transformation of the international economy, and forecast whether the AI digital economy can become an arena of opportunity for them. Finally, we explore the potential for global governance opportunities for the Global South through the fundamental limitations revealed by the asymmetries in the AI gap between the Global North and South.

## II. Digital Geopolitics of Leading AI Nations: The Race for Technological Dominance

### 1. The U.S.-China Competition for AI Governance Leadership

#### **United States: Establishing AI Governance Leadership through Executive Orders**

AI, due to its significant impact and potential as a determinant of long-term future competitiveness, has intensified the rivalry between the U.S. and China. The United States is focused on accumulating domestic capabilities to maintain and expand its technological lead over China while strengthening measures to slow down China's pursuit of AI advancements. The U.S. aims to maintain as large of a lead as possible over China (The White House 2022). A key strategy involves expanding the technological gap through export controls on AI semiconductors, electronic design automation (EDA) software, and military semiconductors. Effective implementation of these export controls is generally expected to hinder China's technological advancements. The U.S. strategy extends to blocking the transfer of intangible technologies, including preventive measures against technology leakage through education and research, and adjustments in talent recruitment to prevent technology outflow.

The U.S. perceives that AI could enhance China's civil-military integration and is continually intensifying export controls to block access to core AI technologies. Concerns about the Chinese military potentially using American semiconductors for supercomputer simulations in military

operations have been rising in the U.S., leading to the Biden administration's reinforcement of export controls on semiconductors from companies like NVIDIA and AMD in August 2022.

The U.S. strategy towards China is twofold: preventing the military application of American AI technologies while enhancing the competitiveness of its AI industry. U.S. export controls impact not only China's civil-military integration but also the cloud services of leading Chinese AI companies like Baidu, Tencent, and Alibaba. The U.S. government anticipates that sustained export controls will delay China's AI progress, allowing the U.S. to maintain or expand its current lead.

Executive Order 14110, announced by the Biden administration in October 2023, titled "Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence," marked a significant shift in U.S. AI governance. While the "Blueprint for an AI Bill of Rights" released in October 2022 by the Biden administration proposed principles for AI development and utilization, and Executive Order 13960 under the Trump administration outlined principles for AI use in the federal government, they were limited in scope to federal levels. Executive Order 14110, however, provides comprehensive and actionable guidelines for AI development and use, with White House oversight ensuring continuous tracking and management of compliance.

The order signifies the U.S. government's recognition of the importance of AI governance and its intent to assert global leadership in this domain. Announcing the order just two days before the UK's AI Safety Summit drew international attention towards the U.S. and helped establish its leadership in AI governance discussions, especially as the EU struggled with AI Act legislation.

### **China: Seeking New Leadership in AI Governance**

The AI rivalry between the U.S. and China transcends mere technological competition, embodying a confrontation over national security and ideological systems. Following the U.S. crackdown on Chinese tech firms, ostensibly for security reasons since 2018, China has faced significant isolation from the global AI ecosystem. The Trump administration focused on regulating telecom equipment manufacturers like Huawei and ZTE, and surveillance equipment makers such as Megvii and iFlytek, while the Biden administration has expanded efforts to disrupt China's semiconductor supply chain. In response, China is striving to overcome international isolation and secure leadership in AI governance by developing a legal and ethical framework that reflects Western values.

Since 2017, when the Chinese State Council released the "New Generation Artificial Intelligence Development Plan," China has been promoting AI technological innovation as a national strategy. The government has officially articulated its intention to overcome U.S. containment through self-reliance and technological strength, as seen in its declaration of a "new national system for tackling key core technologies." China has identified 35 "chokepoint technologies" that could be used by the U.S. to contain China, and believes it can counter U.S. containment in 21 of these areas (EET China 2023).

China's efforts to build independent capabilities reflect its strategy to counter U.S. technological controls and export restrictions imposed through alliances. China perceives the U.S. strategy as intensifying efforts to delay or obstruct China's AI progress and prioritizes building autonomous capabilities in response (Wang 2024). The Chinese government views enhancing domestic innovation as the sole means to bypass U.S. use of key AI value chain points as chokepoints. Thus, China is attempting to construct its own AI ecosystem by organically combining governmental

coordination with market-driven innovation. The government has decided to undertake massive projects to enhance computing power as infrastructure, with data centers under construction in 30 cities as of March 2023. Institutionally, the government has established the National Data Bureau to support these efforts, combining data from the eastern coastal regions with computing power from inland areas.

Recently, China's AI governance has rapidly developed, impacting the global technological regulatory environment significantly. Regulations such as the "Internet Information Service Algorithm Recommendation Management Regulations" introduced in 2022 have laid the groundwork for public value and protection of vulnerable groups. In 2023, frameworks addressing deepfake technologies and generative AI were established through the "Internet Information Service Deep Synthesis Management Regulations" and "Interim Measures for the Management of Generative Artificial Intelligence Services." While these regulations initially stemmed from the Chinese Communist Party's concerns over online content management, they incorporated feedback from academia, enterprises, media, and the general public during their formulation (Sheehan, 2024).

Moreover, China is expanding its influence on AI governance on the international stage. The unanimous adoption of the "Enhancing International Cooperation on Capacity-building of Artificial Intelligence" resolution at the UN General Assembly on July 1, 2024, led by China, signifies the fruition of these efforts (UN General Assembly, 2024). The resolution, supported by the U.S. as a co-sponsor, emphasizes equality in AI technology use, the creation of an inclusive AI environment, and the promotion of international cooperation to enhance AI capabilities in developing countries. This reflects China's attempt to assert its influence on global AI governance by highlighting the UN's central role and representing the interests of developing countries.

## 2. Pursuing Normative AI Governance in Europe

### **United Kingdom: The Challenge of Balancing AI Innovation and Safety as a Global Mediator**

The UK government established its "National AI Strategy" in 2021, choosing a path distinct from the EU's regulation-centric approach. This strategy emphasizes fostering an innovation-friendly environment, promoting economic growth, and minimizing regulation as core values (DSIT et al., 2021). These principles were reiterated in the 2022 report "Establishing a Pro-innovation Approach to Regulating AI" and the 2023 "AI White Paper" (Frank, 2023). The UK government declared its intention to monitor and evaluate AI development and use through autonomous, guideline-based non-statutory means to flexibly respond to AI's societal impacts.

While Executive Order 14110 represented a landmark in U.S. AI governance in 2023, the UK hosted the AI Safety Summit, which played a similar role. By positioning itself as a mediator, the UK successfully garnered participation from 28 countries, including major AI powers like the U.S. and China, as well as emerging nations from Asia, Latin America, and Africa, to build international consensus on the potential risks of AI. The adoption of the Bletchley Declaration, emphasizing joint responses to AI risks and the necessity of international cooperation, was a key outcome of this summit. Despite these efforts, some questioned the UK's ability to act as an independent and impartial mediator, given its close alliance with the U.S. and doubts about its neutrality among major AI stakeholders like the EU and China (Frank, 2023).

Post-summit, the UK government faces various demands regarding AI governance. A report by the House of Commons Communications and Digital Committee in February 2024 criticized the safety discourse focused on the long-term existential threats of generative AI models and called for policies that promote market competition and practical benefits (Communications and Digital Committee, 2023). In August 2023, the House of Commons Science, Innovation and Technology Committee stressed the need for a "tightly-focused AI bill" to establish the UK as a leading nation in AI governance (Science, Innovation and Technology Committee, 2023). However, the UK government has taken a cautious stance, opting to learn about AI models' functions and risks rather than rushing legislation (DSIT, 2023). In November of the same year, the Science, Innovation and Technology Committee expressed concern over the diminishing likelihood of legislation and urged the acceleration of a comprehensive AI governance framework, including all legal measures (Science, Innovation and Technology Committee, 2024). Faced with criticism of both its discursive and institutional approaches to AI safety, the UK government is challenged to establish a convincing AI governance system.

### **European Union: Establishing a Comprehensive AI Governance Framework Centered on the AI Act**

The EU concluded years of discussions since the draft release in April 2021 by passing the "AI Act" in the European Parliament in March 2024, with final approval by the European Council in May. The AI Act was published in the Official Journal and took effect on August 1, with phased implementation over approximately three years. From February 2025, the prohibition on "prohibited systems" will be enforced. By May 2025, the establishment of an AI Office and a code of conduct for general-purpose AI model providers will be mandated. Governance obligations for general-purpose AI will apply from August 2025, followed by the preparation of guidelines and casebooks for AI law implementation by February 2026. The AI Act will be fully enforced from August 2, 2026 (Park, 2024).

The EU has been pursuing the construction of a comprehensive AI governance framework to regulate AI technology development and use. While the AI Act is central to this framework, revising the "Product Liability Directive" and enacting the "AI Liability Directive" are also significant components. The amendment to the Product Liability Directive explicitly includes "software" in the definition of "products," expanding the scope of product liability from primarily physical products to encompass digital products and services, including AI systems.

Additionally, the directive incorporates the self-learning characteristics of AI systems as a factor in assessing product defects and recognizes defects due to cybersecurity vulnerabilities. It also includes compensation for damages from data loss or corruption. Following its adoption in July 2024, the Product Liability Directive amendment will undergo a 24-month preparation period before being implemented into the national laws of each member state in 2026. The AI Liability Directive draft, announced in September 2022, aims to enable victims to seek compensation for damages caused by AI systems even without a direct contractual relationship with AI providers or users. This directive grants victims the right to request the court to disclose or preserve evidence related to suspected high-risk AI system-induced damages. It also introduces a rule assuming a causal link between AI system operation and damage if reasonably inferred. Although the legislative progress of the AI Liability Directive is slower compared to the Product Liability

Directive, it remains a priority due to the current legislative and societal significance of AI technology (Launders, 2024).

### **III. Discourses on AI and the Global South**

#### **1. The Rising Status of the Global South and the Asymmetry of New Technologies**

##### **The Rise of the Global South and Bloc Formation through BRICS**

The Global South, composed of over 130 developing countries primarily located in the southern hemisphere, is advocating for new global governance in a multipolar international society. Amidst strategic competition between the U.S. and China, Global South countries are strengthening their influence without aligning with specific blocs and expanding South-South cooperation to support each other. Historically limited by economic size and political constraints, these countries are now enhancing their political and economic status.

At the 15th BRICS Summit held in August 2023 in South Africa, five countries—Saudi Arabia, the United Arab Emirates, Iran, Egypt, and Ethiopia—joined as new members. With these additions, BRICS expanded to ten countries, accounting for 28% of global GDP (IMF 2023 forecast) and 43% of global oil production.

Politically and diplomatically, the Global South is questioning the existing G7-centric global governance, pursuing balanced diplomacy in a multipolar international society, and acting as "swing states" to engage in pragmatic diplomacy on the global stage. In March 2022, 35 Global South countries, including China, India, South Africa, and Senegal, abstained from a UN General Assembly resolution condemning Russia's invasion of Ukraine and calling for troop withdrawal. In November of the same year, 73 Global South countries also abstained from a resolution demanding restitution and compensation for Russia's aggression. Notably, China played a mediating role in reconciling Iran and Saudi Arabia, while Brazil proposed a peace plan to end the Ukraine war. India refrained from participating in Western sanctions against Russia, and Saudi Arabia obtained observer status in the Shanghai Cooperation Organization (SCO).

The Global South gained prominence after the 2008 financial crisis, which weakened the Western-centric international order. In response to the G7 system, the first BRICS summit was held in 2009, with South Africa officially joining in 2010. The establishment of the New Development Bank (NDB) initiated by India at the 4th BRICS summit was significant, as it reflected the needs of developing countries through financial cooperation, including infrastructure expansion and the Contingent Reserve Arrangement (CRA), thus moving beyond being a mere assembly of emerging economies to playing a practical role with common objectives.

Major developed countries have been establishing regional strategies and development cooperation policies and strengthening support programs, but with intensified U.S.-China competition, strategic responses are being pursued to expand influence over key Global South countries. In June 2022, the U.S. proposed the Partnership for Global Infrastructure and Investment (PGII) at the G7 Summit to meet the infrastructure needs of developing countries and strengthen the global economy and supply chains. The U.S. plans to mobilize \$200 billion in development resources over five years and leverage \$600 billion from multilateral development banks, development finance institutions, and sovereign wealth funds by 2027 to focus on climate and energy, information and communication, gender equality, and health.

Meanwhile, the European Commission launched the Global Gateway in December 2021 as an EU-level global project to counter China's Belt and Road Initiative. Notably, at the 6th EU-AU (European Union-African Union) summit in February 2022, the "Africa Package" was announced, preparing an Africa-Europe investment package with approximately €150 billion in investments to strengthen cooperation with African partners, with plans to gradually expand to the Asia-Pacific, Latin America, and Caribbean regions.

Japan, having hosted the Tokyo International Conference on African Development (TICAD) since 1993, is also pursuing expansion to counter China's influence by emphasizing large-scale investments. At the 8th TICAD in August 2022, Japanese Prime Minister Kishida adopted the TICAD8 Tunis Declaration, announcing that the government and private sector would provide a total of \$30 billion in support to Africa in the form of loans and investments over three years starting in 2023. Furthermore, at the G7 meeting in May 2023, "Engaging with Partners" was presented as a key agenda item, highlighting cooperation with the Global South.

### **The Status of the Global South and the Asymmetry of New Technologies**

Despite the rising prominence of the Global South, the gap between the northern and southern hemispheres remains undeniable. The technological polarization between the North and South is increasingly evident. Various empirical indicators can help gauge the extent of the disparity in AI development, dissemination, and utilization between the two regions. One fundamental infrastructure indicator for AI technology implementation is internet penetration. Approximately 2.7 billion of the world's 8 billion people are excluded from internet access (DATAREPORTAL, 2024). In particular, 680 million in India, 340 million in China, and less than 40% of the population in Sub-Saharan Africa lack internet access, with Southeast Asia just surpassing 50%.

In this context, it is unsurprising that some northern hemisphere countries have been leading AI investments since 2020. According to Figure 2, the U.S. leads with \$330 billion in AI investments from 2013 to 2023, followed by China with approximately \$100 billion, and other countries such as the UK, Israel, Canada, and Germany with investments in the tens of billions. The combined investment of China, the second-largest investor, and Sweden, the 15th largest, barely exceeds half of the U.S. investment amount (Tortoise, 2024).

The lack of AI-related infrastructure or investment in developing countries naturally leads to low AI research output or patent filings. AI research is dominated by the U.S., China, and EU countries. From 2014 to 2023, U.S. research institutions produced over 772,000 AI-related peer-reviewed papers, accounting for a 30% share, followed by China with approximately 465,000 papers and an 18% share. Other AI research hubs include the UK, Germany, Japan, India, Brazil, and Iran, each producing 10,000 to 140,000 papers, while AI research in Africa, South America, and most Asian countries is below 5%. In AI patents, South Asia, Latin America, and Sub-Saharan Africa accounted for less than 1% of patents from 2010 to 2022, with most patents granted to China (61.1%) and the U.S. (20.9%).

These disparities lead to a peculiar gap in AI utilization between the Global South and North. Foundation models like GPT-4, Claude 3, and Llama 2, trained on vast datasets to be applied to a wide range of scenarios, are driving AI proliferation (HAI, 2024).

Interestingly, developing countries, despite being weaker in all metrics—AI infrastructure, investment, research, patents, and foundation models—show relatively high awareness and usage of ChatGPT. In particular, the percentage of respondents using ChatGPT daily or weekly is

significantly higher in countries like India (75%), Kenya (69%), and Pakistan (62%) compared to the global average, and surpasses Germany (41%), Japan (38%), and the UK (38%). This can be interpreted in various ways, but the proactive entry of big tech companies into new markets and the expansion of AI services in healthcare and education sectors at relatively low costs in underdeveloped countries appear to have been crucial. Companies like Google, Microsoft, and Meta have been expanding by establishing R&D centers and engineering offices in developing countries (Okolo, 2023). IBM established IBM Research India in 1998 and later opened research labs in São Paulo and Rio de Janeiro (2010), Nairobi (2013), and Johannesburg (2016). In 2005, Microsoft launched Microsoft Research India in Bangalore and opened two African development centers in Nairobi and Lagos. Google established AI research labs in Accra in 2018 and Bangalore in 2019. Importantly, despite the weaknesses in infrastructure investment outcomes, AI dissemination and utilization in developing countries are more active than expected. Additionally, the rate of generative AI adoption by companies or institutions is 40% in the U.S., 31% in China, and 33% in developing countries including India and Latin America. Considering AI utilization, there remains potential for AI to be a window of opportunity for developing countries.

According to a UNCTAD report, the gap between developed and developing countries has widened since the 1980s with the advent of informationization (UNCTAD, 2023). As examined above, developed countries lead in all aspects, including AI infrastructure investment, research investment, and foundation models, with minimal presence from developing countries. It is challenging to be optimistic that the current accelerated AI technology development and utilization will proceed in a way that alleviates existing disparities. PwC estimates that AI could contribute up to \$15.7 trillion to global economic growth by 2030, with the economic impact on the Global South, excluding China, estimated at only \$1.7 trillion (PwC, 2024). However, the active acceptance and utilization of AI in underdeveloped countries suggest the need to actively seek ways to reduce disparities while observing the comprehensive impact of AI on the development of these countries.

## **2. A Moment of Opportunity for the Global South?: Divergent Prospects Surrounding AI**

Technological advancements and data dominance competition at the corporate and national levels raise concerns about their impact on ordinary citizens' present and future. As reliance on data extraction technologies and digital platforms increases, long-term threats to our freedom are inevitable. Human behavior is captured as patterns and reflected in datasets used for algorithm training. The issue is that this raw data inherently contains social inequalities. Therefore, algorithms embedded in AI are likely to exacerbate and solidify these inequality patterns. In the long run, there is a risk of forgetting what life was like without constant surveillance. The possibility of being trapped in a form of data colonialism by AI cannot be entirely dismissed. Historical colonialism succeeded not only in occupying land and resources but also in colonizing minds and universalizing Western worldviews. Data colonialism may similarly generalize current Global North-South issues and potentially widen the gap.

Conversely, digital transformation in developed countries can present growth opportunities for developing countries. In some regions of developing countries, like Mexico, active participation in the global value chain has led to benefits from increased trade with developed countries. The

spread of smart factories utilizing robots or 3D technologies in developed countries has increased productivity and income, boosting demand for final products and activating trade with developing countries providing components or intermediate goods.

Despite these advantages, the AI wave also presents numerous challenges. The enhancement of AI productivity is concentrated in wealthy countries and major tech companies, leading to the emergence of a few global superstar companies. Consequently, developed countries reap most of the benefits, while developing countries fall behind, risking an expansion of income disparities. Additionally, AI could weaken the competitiveness of many developing countries reliant on cheap labor. For instance, as AI-based automation advances, economic incentives for trade and investment may decline, weakening traditional economic foundations and stalling progress in closing income gaps. Moreover, many developing countries today must create enough quality jobs for their growing young populations. AI is expected to automate many jobs, overturn traditional growth models and development strategies, severing the link between wage growth and productivity, and increasing unemployment and inequality. These imminent threats require careful exploration.

### **Algorithmic Imperialism**

The discourse of algorithmic imperialism has emerged, arguing that Western dominance in AI extends beyond technological advancement and marginalization of underdeveloped countries, manifesting as control over social, political, and cultural narratives (Birhane, 2020). According to this discourse, traditional colonialism was state-driven, whereas algorithmic colonialism is led by corporations. While the former involved indiscriminate violent domination, colonialism in the AI era takes the form of "cutting-edge algorithms" and "AI-driven solutions" to social issues (Arora et al., 2023; Muldoon and Wu, 2023). Much of Africa's digital infrastructure and ecosystem is predominantly operated by Western companies like Google, Meta, Netflix, and Uber. For example, Meta's creation of an African population map using data obtained through computer vision technology, demographic data, and high-resolution satellite imagery naturally grants it the authority to create and control knowledge about the continent's population (Birhane, 2020; Menon, 2023). To maximize data extraction and profits, Meta freely uses information about Africans and their movements and authoritatively determines what constitutes legitimate knowledge about populations (Sampath and Tregenna, 2022). This is remarkably similar to how Westerners justified colonial rule by claiming they knew better what the colonies needed and would save them, expecting gratitude in return.

Even in Nigeria, one of Africa's more technologically advanced countries, approximately 90% of software used is imported, posing a barrier to indigenous technology development (Soulé, 2024). Western-developed AI is not only unsuitable for African problems but also impedes the development of locally relevant products while making the continent reliant on Western software and infrastructure. For example, AI diagnostics using Mammotome, useful for breast cancer diagnosis in the West, have not been as successful in Africa as expected, with self-diagnosis proving more useful. This suggests that AI systems developed against the backdrop of Western lifestyles and environments may have limited applicability in underdeveloped countries and should be used cautiously.

Biases inherent in AI models and data often result in problems being framed and solutions derived in ways similar to Western perceptions. For instance, answers derived from AI models to the same

questions posed offline to the World Values Survey (WVS) and Pew Research Center show a Western bias (Hanel et al., 2018). In response to questions evaluating the relative importance of democracy and economic growth, 83% of respondents in Russia, 72% in Indonesia, and 59% in the United States chose economic growth, while AI models chose economic growth 98% of the time. Similarly, there are claims that AI systems monopolized by companies in developed countries will monopolize and control knowledge, resulting in "knowledge slavery" for developing countries (UNCTAD, 2023).

The dominance of Western AI infrastructure and utilization extends beyond simple technological and data monopolies, accompanied by the spread of Western perceptions and lifestyles, leading to uncritical acceptance of Western models' legitimacy. The adoption of AI models detached from the political, economic, and cultural contexts of underdeveloped countries often proves inadequate for addressing their issues and is likely to deepen dependency on Western infrastructure and data.

### **AI Technology as an Opportunity**

On the other hand, AI is seen as a useful tool for addressing various challenges faced by developing countries and has been suggested to increase democracy by encouraging citizen participation through AI (Okolo, 2023). Proponents perceive AI as an opportunity for developing countries' advancement and actively recommend its utilization. Over the past decade, underdeveloped countries have begun using AI tools to address traditional underdevelopment issues, with increasing applications in agriculture, healthcare, and education (Goel et al., 2021; Guo and Li, 2018; Aderibigbe et al., 2023). For example, deep learning models for diagnosing banana diseases and crop infections and image observation systems for agriculture and forestry monitoring have been developed to support farmers in developing countries (Kunda and Phiri, 2023). In healthcare, medical, and education sectors, AI is being used to complement infrastructure shortages and significantly reduce costs. In India, predictive models are built to keep remote maternal participants engaged in telemedicine programs (Parveen et al., 2024), while Ghana has developed clinical support systems to combat antibiotic resistance (Ayesiga et al., 2024). In education, Colombia uses AI to identify students at risk (Coleman, 2021), enhances English learning for Thai students (Songsingchai et al., 2023), and employs AI assistants to support science education in West Africa (Boateng et al., 2024).

Advocates argue that democratizing current AI practices and encouraging the development of more inclusive AI systems can increase participation from underrepresented communities in AI development. The demand for regional specialization and development of AI systems is growing, with active efforts underway. Grassroots organizations like Masakhane and Ghana NLP are attempting to develop datasets and machine translation tools to increase accessibility to African languages (Bannerman et al., 2024). Other initiatives like Deep Learning Indaba, Khipu, AI Saturdays Lagos, and Data Science Africa contribute to building local expertise in the AI field and fostering the growth of AI researcher and developer communities in Africa and Latin America.

## **IV. Potential for Global AI Governance and the Global South**

### **1. AI Gap and Potential Crises for the Global South**

If AI development and utilization are predominantly led by advanced Northern Hemisphere countries, excluding developing nations in the Global South, a variety of crises could emerge. These crises may include economic disparities between developed and developing countries, dependency on data and technology, the expansion of social and cultural inequalities and biases, military instability, and political unrest.

The widening AI gap between the North and South is likely to exacerbate economic disparities between developed and developing countries. While developed countries maximize productivity and create new industries through AI technology, developing countries may face increased economic gaps and rising poverty rates due to lack of access to such technologies. This could contribute to instability in the global economy. However, there are also reports suggesting the opposite (Filippucci et al., 2024). They predict that AI will drive productivity and economic growth, but its impact will vary across different jobs. Overall, AI is expected to affect 40-60% of current jobs, with greater impacts on office jobs in developed countries (GS, 2023). While half of the jobs may benefit from increased productivity due to AI, the other half could see reduced labor demand and lower wages as AI takes over primary tasks.

Nevertheless, compared to developing countries in the Global South, developed countries face significant risks from AI but also have more opportunities to benefit. Their relative and absolute superiority in AI infrastructure, implementation environments, and technology could create new jobs. In contrast, while developing countries' jobs may be less affected by AI, they may also miss out on productivity gains. Although the overall benefits of AI might be significant, there is a risk that income inequality, with high-income earners who utilize AI well seeing increased incomes, will overshadow the benefits as many jobs experience income reduction and job loss.

This disparity can be attributed to developing countries' dependency on data and technology, which is the second risk factor. The monopolization of AI technology and data by major tech companies in developed countries could exclude companies in developing countries from accessing technology, potentially expanding the asymmetry between the North and South. Increased information asymmetry could hinder accurate decision-making by governments and companies in developing countries, leading to unfair competition and hindering economic independence, ultimately solidifying structural poverty.

Efforts to mitigate these disparities, such as international agreements, are not absent. A notable example is the Global Digital Compact (GDC, 2024), spearheaded by the UN to prepare for a digital future through cooperation. While digital technology can enhance convenience, economic growth, and social development, it also presents issues such as digital divides, privacy violations, cybercrime, and the spread of fake news. These challenges cannot be solved by individual countries alone, necessitating international cooperation. For developing countries, cooperation with developed countries is particularly crucial given their struggles with digital infrastructure, workforce development, and legal systems. The UN GDC aims to ensure that everyone benefits from digital technology. Additionally, the EU has proposed legislation to enhance data availability for new products and innovation, including AI, in November 2020.

Beyond international organizations, NGO collaborations are also noteworthy. The World Economic Forum (WEF) established a data exchange framework as part of the Data for Common Purpose Initiative (DCPI) in August 2021. This framework facilitates data sharing among companies. Capgemini, a global consulting firm, recently released a report suggesting strategic plans to promote a data-sharing ecosystem in July 2021.

Despite these efforts, the core issue remains overlooked. These initiatives focus on disparity "mitigation" rather than addressing problems within the digital economic ecosystem itself and providing solutions. This leads to concerns about the third crisis: the potential exacerbation of social inequality. If AI-driven services in education, healthcare, and finance are not accessible to developing countries in the Global South, it could intensify social inequalities, cultural discrimination, and biases. AI development centered on developed countries may not consider the social and cultural contexts of developing countries, reinforcing cultural discrimination and biases when applied in different environments.

Ultimately, the crux of the issue lies in the absence of investment, education, and environment in developing countries, making them mere markets for the Global South. This mirrors developed countries' ODA policies, which aim to secure monopolistic positions in developing markets' infrastructure. This suggests that the digital economy transition and digital information sharing are not genuinely mutual.

Lastly, political and military crises cannot be ignored. The unequal distribution of AI technology could lead to social dissatisfaction and political instability in developing countries. Job losses and economic inequality resulting from AI could trigger social conflicts, potentially leading to political instability. This could culminate in the absence of state functions and the erosion of democracy. Specifically, low AI and cybersecurity capabilities in developing countries could lead to cyberattacks threatening critical infrastructure, economic systems, and political stability, targeting financial systems and government institutions, leading to economic losses and social chaos.

These crisis points ultimately necessitate discussions on global governance to address the crises stemming from the AI gap between developed and developing countries. While efforts at the individual country level in both the Global North and South are important, international efforts are crucial to recognizing and responding to these crises, underscoring the need for AI global governance to mitigate the AI gap.

## **2. Absence of AI Global Governance and the Global South**

While AI technology has the potential to reinforce algorithmic colonialism, it is also highly applicable in fields like agriculture, healthcare, and education in underdeveloped countries. However, there are challenges that must be addressed for these countries to effectively leverage AI's opportunities. Despite steady increases in electricity and internet access in Africa, many people in Sub-Saharan Africa still lack internet access (Ayesiga et al., 2024). The World Bank estimates that at least \$100 billion is needed to connect 100 million Africans living in remote areas. Infrastructure expansion in Africa must be further extended (Chinzara et al., 2023). The deployment of 2Africa, the longest submarine internet cable designed to date, is underway. Of the estimated 485 submarine internet cables in use globally, most are owned by large telecommunications companies, and big tech companies like Amazon, Google, Meta, and Microsoft have jointly owned about 30 cables, increasing their investment in submarine infrastructure (Transformation, 2010). Discussions should focus on ensuring that this infrastructure expansion considers the benefits for underdeveloped regions.

Underdeveloped countries are often tasked with data labeling work, and there have been concerns about the exploitation of data workers and content moderators employed by companies like Sama and Scale AI in East Africa and South Asia (Okolo, 2023). In addition, most underdeveloped

countries lack data protection and AI policies, potentially leading to more frequent data misuse. Currently, concerns and discussions about the negative impacts of AI are primarily centered around developed countries, calling for increased attention and discussion on the situation in underdeveloped countries.

More proactive efforts by the governments of underdeveloped countries are also important. They should build partnerships with external organizations to educate local researchers and developers, foster entrepreneurship, and support the creation and maintenance of AI ecosystems that encourage local innovation. Nigeria partnered with Microsoft to provide digital skills to its citizens (MNC, 2021), and Google has been educating approximately 8 million people in digital skills in Latin America since 2017 (Pichai, 2022). Plans to integrate topics like computer literacy, ICT skills, coding, digital citizenship, and online safety into K-12 curricula are mentioned in digital innovation initiatives in Brazil, Costa Rica, India, Jamaica, Malaysia, Panama, Rwanda, and South Africa (Stork, 2018).

In a context where the influence of AI technology is growing, it is crucial to create an environment where underdeveloped countries can fairly access AI technology, enabling a level playing field for competition and utilization. Various international organizations, including the UN, World Bank, IMF, and G20, advocate for the promotion of AI to ensure stability, security, and sovereignty for developing countries while advancing the benefit of humanity. Ideas such as the Digital Public Infrastructure System Framework and the Global Digital Public Infrastructure Repository (GDPIR) have also been proposed. The G20's Data Gap Initiative 3 (DGI-3) supports developing countries in using open datasets to operate AI models in the field of climate change (Celjak et al., 2017).

As AI technology and its dissemination continue to be discussed in various international organizations and conferences, there is a need to open and invite developing countries to participate in AI global governance. This will help raise awareness of the potential crises resulting from the AI gap and seek solutions to address them.

### **3. Efforts of Global South Developing Countries to Establish AI Governance**

Countries in the Global South, which have been relatively excluded from AI governance discussions, are now striving to realize the potential of AI technology and establish governance frameworks tailored to their circumstances. Notably, in Latin America and Africa, efforts to lay the foundation for AI governance with the support of international organizations are active. In Latin America, Brazil has emerged as a leader in AI regulation, proposing a total of four AI bills from 2019 to 2023. The most recent bill, proposed in May 2023 (2338/2023), adopts a human rights-centered risk-based approach similar to the EU's AI Act (Hillard, 2023). Meanwhile, Chile hosted the first Ministerial High-Level Summit on AI Ethics in Latin America and the Caribbean in October 2023, leading discussions on regional AI governance (UNESCO, 2024a). As a result of the summit, 20 countries signed the "Declaracion de Santiago," an initiative to promote ethical AI development reflecting regional specificities (InvestChile, 2023). This declaration reflects the basic principles of UNESCO's 2021 "Recommendation on the Ethics of Artificial Intelligence," and Chile's government further announced an AI bill based on these principles in May 2024 (UNESCO, 2024b).

In Africa, the African Union (AU) has taken the lead in establishing a continental AI strategy. Announced in April 2024, the "Continental AI Strategy" envisions "an Africa-centered, responsible, and ethical AI that empowers people and contributes to inclusive growth, resilience, and socioeconomic development across the continent." Developed with UNESCO's technical and financial support, the strategy involved the AU's implementation and technical bodies, regional economic communities, regional and Pan-African organizations, and UN agencies. The AU supports member states in developing AI strategies and governance frameworks, enhancing AI system transparency and accountability by establishing a continental AI observatory, ethics committee, and transparency register. Furthermore, the AU is promoting AI knowledge sharing and usage across Africa and pursuing various cooperation initiatives to strengthen Africa's voice on the international stage, such as building knowledge exchange platforms, waiving visas for AI experts, and hosting international AI events.

The UN and UNESCO have played significant roles in promoting the participation of Global South countries in AI governance. As seen in the Chilean case, UNESCO provided a framework for Global South countries to establish AI ethics policies through its 2021 "Recommendation on the Ethics of Artificial Intelligence." By supporting regional AI cooperation, UNESCO has contributed to helping Global South countries learn and incorporate the values pursued by UNESCO and the UN regarding AI. The UN established a high-level advisory body on AI in 2023, including experts from various regions to reflect the voices of Global South countries. The advisory body's report, "Governing AI for Humanity," published in December 2023, emphasizes the need for global governance in response to the rapid advancement of AI technology and proposes inclusive and public interest-oriented AI governance principles. It underscores the importance of improving access to data, computing resources, and talent to promote the participation of Global South countries in AI development and governance, thereby equitably distributing AI benefits and leveraging AI to achieve sustainable goals (UNHABAI, 2024)

## **V. Conclusion: Challenges for Global AI Governance**

The impact of AI is already manifesting unevenly across countries, and this disparity is expected to widen further in the future. While some developed nations are reaping the benefits of AI, a growing number of developing countries risk falling behind in the AI race. In this context, China is likely to leverage cooperation with the Global South as a key strategy to expand the influence of its AI models.

The rapid development and proliferation of AI technology present complex challenges in establishing AI governance frameworks across nations. Economic and technological disparities between countries, differing perspectives on the roles of government and the private sector, and varying perceptions of AI's potential risks all hinder the establishment of a unified and interoperable global AI governance system. Moreover, as AI governance is perceived as a means to secure national AI dominance, leading AI nations are forming subtle competitive relationships even with allied countries in building AI governance. In this scenario, the need for collaborative AI governance among countries has emerged to reduce regulatory and market fragmentation and to encourage the participation of diverse nations affected by AI (Mohanty, 2024).

In this context, the mediating role of international organizations such as the UN and UNESCO is expected to become increasingly important, and there is a need to establish a balanced global AI

governance framework that reflects the perspectives of Global South countries. South Korea, possessing both AI technological capabilities and democratic values, has the potential to emerge as a key mediator and an innovative model proposer in global AI governance discussions. Successful AI governance will require a delicate balance between technological innovation and ethical considerations, international cooperation, and respect for individual national sovereignty, remaining a crucial challenge that the entire world must address together.

### Bibliography

- Aderibigbe, Adebayo Olusegun, Ohenhen, Peter Efosa, Nwaobia, Nwabueze Kelvin, Gidiagba, Joachim Osheyor and Ani, Emmanuel Chigozie (2023) 'Artificial Intelligence in Developing Countries: Bridging the Gap between Potential and Implementation', *Computer Science & IT Research Journal*, 4(3), pp. 185-199.
- Arora, A., Barrett, M., Lee, E., Oborn, E. and Prince, K. (2023) 'Risk and the Future of Ai: Algorithmic Bias, Data Colonialism, and Marginalization', *Information and Organization*, 33(3), pp. 100478. DOI: <https://doi.org/10.1016/j.infoandorg.2023.100478>.
- Ayesiga, Innocent, Yeboah, Michael Oppong, Okoro, Lenz Nwachinemere, Edet, Eneh Nchiek, Gmanyami, Jonathan Mawutor, Ovyee, Ahgu, Atimango, Lorna, Gadzama, Bulus Naya, Kembabazi, Emilly and Atwau, Pius (2024) 'Artificial Intelligence-Enhanced Biosurveillance for Antimicrobial Resistance in Sub-Saharan Africa', *International Health*, pp. 1-9.
- Bannerman, Stephen, Agyei, Emmanuel, Sarpong, Sarah, Quaye, Ama Bonuah, Yussif, Sophyani Banaamwini and Agbesi, Victor Kweku (2024) 'Machine Translation from English-Twi in Parallel Corpus: Low Resource Ghanaian Language (Nlp)', *Artificial Intelligence Research*, 2326, pp. 107-134.
- Birhane, Abeba (2020) 'Algorithmic Colonization of Africa', *SCRIPTed*, 17(2), pp. 389-409.
- Boateng, George, John, Samuel, Boateng, Samuel, Badu, Philemon, Agyeman-Budu, Patrick and Kumbol, Victor 'Real-World Deployment and Evaluation of Kwame for Science, an Ai Teaching Assistant for Science Education in West Africa'. *International Conference on Artificial Intelligence in Education*: London: Springer, 119-133.
- Celjak, Draženko, Bekić, Zoran, Cundeković, Marko, Jertec, Ljiljana, Milinović, Miroslav and Zubić, Alen 'Dabar-the National Infrastructure for Digital Repositories'. *EUNIS*: European University Information Systems Organization, 16-24.
- Chinzara, Zivanemoyo, Dessus, Sebastien and Dreyhaupt, Stephan (2023) *Institutional Reforms: The Critical Factor to Attracting Infrastructure Investment in Sub-Saharan Africa*. World Bank Blog. Available at: <https://blogs.worldbank.org/en/ppps/institutional-reforms-critical-factor-attracting-infrastructure-investment-sub-saharan-africa>.
- Coleman, Chad J (2021) *Exploring a Generalizable Machine Learned Solution for Early Prediction of Student at-Risk Status*. New York: Columbia University.
- DATAREPORTAL (2024) *Internet Use 2024*. Available at: <https://datareportal.com/reports/digital-2024-deep-dive-the-state-of-internet-adoption> (Accessed: 30 November).
- Filippucci, Francesco, Peter Gal, Cecilia Jona-Lasinio, Leandro, Alvaro and Nicoletti, Giuseppe (2024) *The Impact of Artificial Intelligence on Productivity, Distribution and Growth*, Paris,: OECD.

- Goel, Raj Kumar, Yadav, Chandra Shekhar, Vishnoi, Shweta and Rastogi, Ritesh (2021) 'Smart Agriculture–Urgent Need of the Day in Developing Countries', *Sustainable Computing: Informatics and Systems*, 30, pp. 100512.
- GS, Goldman Sachs (2023) *Generative Ai Could Raise Global Gdp by 7%*. Available at: <https://www.goldmansachs.com/insights/articles/generative-ai-could-raise-global-gdp-by-7-percent> (Accessed: 3 November).
- Guo, Jonathan and Li, Bin (2018) 'The Application of Medical Artificial Intelligence Technology in Rural Areas of Developing Countries', *Health equity*, 2(1), pp. 174-181.
- HAI, Stanford University (2024) *Global Ai Power Rankings: Stanford Hai Tool Ranks 36 Countries in Ai*. Available at: <https://hai.stanford.edu/news/global-ai-power-rankings-stanford-hai-tool-ranks-36-countries-ai> (Accessed: 1 December).
- Hanel, Paul HP, Wolfradt, Uwe, Lins de Holanda Coelho, Gabriel, Wolf, Lukas J, Vilar, Roosevelt, Monteiro, Renan Pereira, Gouveia, Valdiney V, Crompton, Tom and Maio, Gregory R (2018) 'The Perception of Family, City, and Country Values Is Often Biased', *Journal of Cross-Cultural Psychology*, 49(5), pp. 831-850.
- InvestChile (2023) *Chile Leads Regional Initiative on Ethical Artificial Intelligence*: Santiago: InvestChile. Available at: <https://blog.investchile.gob.cl/chile-ethical-artificial-intelligence> (Accessed: 1 December).
- Kunda, Barbara Chalwe Kunda and Phiri, Jackson 'Towards Leveraging Ai Deep Learning Technology as a Means to Smart Farming in Developing Countries: A Case of Zambia'. *Proceedings of International Conference for ICT (ICICT)-Zambia*, 114-121.
- Menon, Sunita (2023) 'Postcolonial Differentials in Algorithmic Bias: Challenging Digital Neo-Colonialism in Africa', *SCRIPTed*, 20, pp. 383-399.
- MNC, Microsoft News Center (2021) *Microsoft Collaborates with the Nigerian Government to Accelerate Digital Transformation in the Country*. Available at: <https://news.microsoft.com/en-xm/2021/05/03/microsoft-collaborates-with-the-nigerian-government-to-accelerate-digital-transformation-in-the-country/> (Accessed: 14 November).
- Mohanty, Amlan (2024) *Why We Need a Global Ai Compact*. Wahington DC: Carnegie Endowment for International Peace.
- Muldoon, James and Wu, Boxi A (2023) 'Artificial Intelligence in the Colonial Matrix of Power', *Philosophy & Technology*, 36(4), pp. 80-104.
- Okolo, Chinasa (2023) *Ai in the Global South: Opportunities and Challenges Towards More Inclusive Governance*. Washington DC: The Brookings Institution.
- Parveen, Gulafshan, Joshi, Poonam, Uniyal, Yashika and Rawat, Sapna (2024) 'Contribution of Artificial Intelligence to Improving Women's Health in Pregnancy', *Artificial Intelligence and Machine Learning for Women's Health Issues*: Amsterdam: Elsevier, pp. 121-135.
- Pichai, Sundar (2022) *Our Commitment to Latin America's Digital Future*. Available at: <https://blog.google/around-the-globe/google-latin-america/our-commitment-latam-digital-future/> (Accessed: 13 November).
- PwC, Price waterhouse Coopers (2024) *Pwc's Global Artificial Intelligence Study: Sizing the Prize*. New York: PwC.
- Sampath, Padmashree Gehl and Tregenna, Fiona (2022) *Digital Sovereignty: African Perspectives*. Johannesburg: DSI/NRF South African Research Chair in Industrial Development.

- Schwab, Klaus (2017) *The Fourth Industrial Revolution*. London: Penguin
- Songsingchai, Saifon, Sereerat, Bang-on and Watananimitgul, Wirot (2023) 'Leveraging Artificial Intelligence (Ai): Chat Gpt for Effective English Language Learning among Thai Students', *English Language Teaching*, 16(11), pp. 1-68.
- Soulé, Folashadé 2024. Digital Sovereignty in Africa: Moving Beyond Local Data Ownership. Oxford: CIGI Policy Brief.
- Stork, Michele Garabedian (2018) 'Implementing a Digital Learning Initiative: A Case Study in K-12 Classrooms', *Journal of Formative Design in Learning*, 2, pp. 36-48.
- Tortois, Media (2024) *The Global Ai Index Annual Report 2024*. Available at: <https://www.tortoisemedia.com/intelligence/global-ai> (Accessed: 30 November).
- Transformation, Africa's Infrastructure: A Time for (2010) *Vivien Foster Cecilia Briceño-Garmendia*. Washington DC: the World Bank.
- UNCTAD, UN Trade and Development (2020) *World Investment Report 2020*. Geneva: UNCTAD.
- UNCTAD, UN Trade and Development (2023) *World Investment Report 2023*. Geneva: UNCTAD.
- UNESCO, United Nations Educational, Scientific and Cultural Organization (2024a) *Chile Launches National Ai Policy and Introduces Ai Bill Following Unesco'S Recommendations.*: London: UNESCO.
- UNESCO, United Nations Educational, Scientific and Cultural Organization (2024b) *Recommendation on the Ethics of Artificial Intelligence*. London: UNESCO.
- UNHABAI, High-level Advisory Body on Artificial Intelligence (2024) *Governing Ai for Humanity*. New York: UN.