AI in Africa: historic opportunity or new instrument of inequality?

By Alain Serge MIFOUNDOU

Communications Officer, Repongac

Reflection

Making Congolese digital technology a lever for integration, governance, economic growth and social progress.

In my programme, I have placed people at the centre of my actions and good governance as the foundation for economic growth, a caring society and sustainability. I remain convinced that digital technology will contribute to the performance of our economy, the strengthening of our social cohesion, the improvement of our knowledge, the effectiveness of our institutions and the fight against poverty. (DRC National Digital Plan)

Félix Antoine TSHISEKEDI TSHILOMBO

President of the Democratic Republic of Congo

This **"Research paper on AI in Africa as a historic opportunity or a new instrument of inequality - March "October 2025"** was carried out by experts working in the digital sector who convened in a Technical Advisory Committee set up by **Alain Serge MIFOUNDOU**, Communications Officer at **REPONGAC,** at the instigation of **the Centre for Governance and Sustainability** (CGS) at **NUS Business School** in collaboration with **TENCENT** and **CANGO.**

This commission is chaired by **Alain Serge MIFOUNDOU**, **REPONGAC's** Communications Officer, who is responsible for its coordination. It is composed of experts, consultants, new technology stakeholders, members of marginalized and vulnerable communities, young people, women, populations with low income living in underserved rural areas, refugees, internally displaced persons, etc., totalling 25 people who worked between March and October 2025.

This work is spearheading one process of change, namely the deployment of AI in the countries of Central Africa. We will need to overcome unjustified fears and resistance to change through systemic adjustments and communication strategies. AI must take centre stage in the multifaceted activities of our societies, fuelling popularized intelligence with the same enthusiasm generated during the validation sessions in our countries. Tomorrow, AI will carry the hopes of our "Africa".

Serge Alain MIFOUNDOU is a Congolese (DRC) actor and researcher, recognised for his pioneering work in defending digital rights and promoting ethical, human-centred internet and artificial intelligence (AI) governance in Africa.

Professional Career: From Activism to Governance

Serge Alain's career path unfolded in three key stages:

1. Defender of Rights in the Field (2017–2019)

In Kinshasa, **Serge Alain** joined Repongac (Network of National NGO Platforms in Central Africa), a regional network, as Communications Officer to carry out and monitor tasks related to internal and external communications in line with REPONGAC's strategies.

His missions were very specific:

- **Documentation:** He documented and reported cases of online censorship, illegal surveillance, internet shutdowns, and repression of fundamental freedoms and human rights, providing evidence to organisations such as Forus International and Civicus Monitor.

- **Advocacy:** He led advocacy campaigns with regional, continental, and national institutions, including parliamentarians in Central Africa during debates on the development of laws on digital transformation and telecommunications policies, fighting for the integration of net neutrality, personal data protection, technological inclusion, and digital equity. Training: He has organized workshops, conferences, and webinars to raise awareness and build citizen resilience in countries of the Central African sub-region on digital security, censorship circumvention tools, the proliferation of hate speech, disinformation, harassment, and all forms of online violence.

2. The Architect of Internet Governance (2019–2021)

His expertise has opened the doors to internet governance bodies for him.

- **National level:** He was one of the founding members of the Internet Governance Forum in the DRC (IGF-DRC), creating a space for multi-stakeholder dialogue (government, civil society, private sector, academia).

- **Regional and international level:** He has become a respected voice at the African Internet Governance Forum (AfiGF) and participated in the civil society manifesto for ethical and responsible artificial intelligence as a representative of Central African civil society. His role was to ensure that technical decisions regarding internet infrastructure did not infringe on human rights and took into account the continent's realities regarding limited connectivity, linguistic diversity, etc.

3. The AI Governance Thinker (2021 to present)

With the rise of AI, **Serge Alain** has identified a new challenge. He is about to design an AI governance think tank, which will be based in Kinshasa to have an impact in the Central African sub-region.

- **Research:** He publishes studies on algorithmic bias in AI systems, showing how models trained on Western data can discriminate against African populations through facial recognition, credit allocation, inclusion and technological equity, benefiting only the most connected and wealthy populations, leaving behind the poor, marginalized, and vulnerable populations, and clear and ethical policies and regulatory frameworks to enable AI systems to be catalysts for economic development in Africa...

- **Policy advice:** He advises governments in the sub-region, the African Union, regional institutions such as ECCAS, CEMAC, and ICT regulatory agencies on the development of national AI strategies that are ethical, inclusive, and promote local innovation instead of simply importing foreign technologies. Capacity building: He works in collaboration with Forus International, Civicus Monitor, the European Union's CADE Consortium for the Promotion of Internet and AI Governance in the Global South, African startups, and developers to integrate an ethics-by-design approach into their products and also to design practical guides, simple videos, and easy-to-understand infographics that take into account all levels and are translated into all local languages for successful public awareness.

- **Philosophy and impact: Serge Alain's** philosophy is simple: "AI technology must be a tool for emancipation, inclusion, and equity for all Africans, not an instrument for exacerbating existing inequalities and for control." He fights against a purely techno-solutionist vision and advocates for each innovation to be evaluated in terms of its impact on human dignity, equality, and democracy.

His impact is visible through the policies he influences, the network of young hopefuls he has trained, and his ability to translate complex technical issues into clear and compelling human rights arguments on the international stage.

ANALYTICAL SUMMARY

Repongac is a civil society organization operating in the Central Africa sub-region with the capacity to radically transform the African continent by creating healthier, more educated, more thriving and more resilient societies. It fights against digital inequalities and promotes internet and AI governance so that these technologies are used strategically and ethically to propel Africa towards a better future for all its inhabitants. It has worked to translate its sectoral vision of technological inclusion in the sub-region into a benchmark study entitled "**AI in Africa: historic opportunity or new instrument of inequality**?" with the stated aim of making AI a catalyst for economic development, governance and social progress.

This research, which is divided into several fundamental pillars (technological inclusion, digital equity, infrastructure, content, application uses, governance and regulation), enables the Central Africa sub-region, at regional, national and local levels, to align the necessary deployment and development of AI in institutions, businesses and public services, and to overhaul the pyramidal architecture of actions by favoring cross-cutting approaches and building a governmental AI ecosystem in order to achieve the objectives of building a strong, thriving and resilient economy in Africa in the digital age.

This is a major systemic and structural revolution that will require support from mechanisms and systems adapted to African realities.

REPONGAC

Repongac is a non-profit organization created in 2008 to help national NGO platforms and other CSO networks in Central Africa to pursue their social and economic interests in a manner that is effective, while respecting the environment and good governance, in order to increase their political impact in a democratic space under pressure. By supporting civil society, REPONGAC aims to facilitate and convene various actors from organizations in the region by strengthening and connecting them, adapting resources to the priority needs of the population, providing advice on key issues and offering capacity development support for concrete development.

REPONGAC was created in response to the globalization and internationalization of challenges and issues related to sustainability. Networking has become the main focus at the national, regional and international levels, and the trend observed within CSOs is to pool the efforts of these actors in order to influence and have a lasting impact on the actions initiated in favor of sustainability. Networking provides membership organisations with a framework for defending mutual interests, strengthening their role in decision-making at the national, regional and international levels.

It works with partners such as Forus, CIVICUS, FINGO, CARE International, and other local organisations, and is a member of the European Union's CADE consortium for the promotion of Internet governance and AI in the Global South, to conduct advocacy and awareness campaigns with national, regional, continental and international institutions in order to achieve the inclusion of AI and secure and thriving digital equity.

INTRODUCTION

Africa is at a decisive turning point in its history in the era of artificial intelligence, which is a time of choice with the possibility of shaping its future in an inclusive manner, but this requires a clear vision, strategic investments and collective commitment.

AI is an emerging technology that is uniquely applicable to the African context, given its socio-economic, political and cultural specificities, but which has the potential to transform many key high-impact sectors, such as agriculture, health, education, financial services, governance, etc. Considered the youngest and most dynamic continent in the world, Africa is in a position to develop and deploy ethical AI systems to stimulate its economic growth. While it is true that AI can make contributions to the creation of new jobs and generate economic opportunities by improving business productivity and effectiveness, its adoption is nonetheless dependent on overcoming numerous challenges, such as a lack of literacy and the necessary resources.

At a time when the world is accelerating its technological transformation, the African continent faces a crucial choice: to passively endure technological inequalities or to anticipate them in order to reap the maximum benefits. If the continent seizes this historic opportunity, it could make up for its long-standing backwardness and become a major player in innovation.

With the enormous potential offered by AI, Africa could directly adopt cutting-edge solutions without having to rely on the heavy infrastructure of Western countries. As Africa is predominantly "mobile-first", where Internet access is mainly via mobile phones, it could opt for unique models where smartphones replace hospitals, blockchain secures doctors, and AI speaks local languages (Swahili, Wolof, Bamanankan, Hausa, Zulu, etc.). With these technological innovations, it will be able to leapfrog 50 years of infrastructure delays to provide quality healthcare, personalized learning, productive agriculture, inclusive finance, transparent governance, and more.

This is a truly historic technological opportunity that demonstrates the innovative potential of Africans in the rapid application of cutting-edge solutions such as Mobile Money (M-Pesa), Flutterwave, Zindi, Deep Learning Indaba, Jumo, the Masakhane projects, and more.

However, behind these innovations lies a growing divide: digital exclusion and inequality. While some countries such as Nigeria, South Africa, Kenya, Ghana, etc. are investing heavily in AI, other countries risk being left behind.

On the other hand, if the continent misses this historic technological opportunity, it risks further widening inequalities and remaining in a state of dependency on foreign technologies. Only 5% of AI applications are developed in Africa by Africans for Africans. Tech giants (Google, Meta, Huawei, Microsoft, IBM, Apple) dominate the market, capturing African data without always creating local value. African AI talent is often recruited by foreign companies, limiting the local ecosystem.

AI offers opportunities to strengthen Africa's strategic autonomy and develop technological solutions aligned with the continent's ethical and environmental values. However, Africa is hampered by a severe lack of infrastructure, a total absence of investment in research and a

remarkable delay in the implementation of ambitious projects. Yet, with the youngest population on the globe (70%) and a growing market with unique challenges, the continent has all the assets it needs to become a key actor in digital inclusion and equity, provided it acts ethically and responsibly.

This research takes us to the heart of a reflection on current technological realities purely in the African context, taking into account socio-economic, political and cultural specificities, and asking the question: "***With the reality of persistent digital inequalities in Africa, could AI be a catalyst for inclusive development and technological equity, or could it exacerbate existing divides and create new forms of inequality?"***

This work resolutely takes a stance, considering that technological development is only relevant if it serves human beings and the general interest while respecting rights. If shared, this vision must then transcend public policy, shape each policy direction and thus shape the way we build safer and more inclusive African societies.

The challenge is not only **technological** or **one of massive investment** in infrastructure and digital literacy**, but rather a political** one, requiring a firm commitment to respect and promote digital rights, as well as the continuous capacity development of civil society so that it can fully play its role as a counterweight and driver of innovation. Africa should write its own future. Digital equity cannot be begged for, it must be built. AI is neither a miracle solution nor an inevitable threat. Its impact will depend on the public policies put in place by stakeholders. **When *Africa manages to bridge its infrastructure gaps and develop its technological ecosystem, it could make AI a tool for empowerment; otherwise, there would be an inevitable risk of exacerbating or creating new forms of inequality***.

Our concern in this study is whether AI in Africa will be a catalyst for inclusive development and technological equity, or whether it will exacerbate new forms of inequality.

This is why ***measuring the technological divide over time is essential to assess the effectiveness of public policies implemented by governments and to identify areas where efforts need to be strengthened***. There are a multitude of indicators showing the necessity or importance of this work, and it is with this in mind that we have reformulated a few questions to guide our research.

In this regard, we ask the following questions:

- How is AI currently being deployed and perceived in different African contexts?
- What socio-economic, political and technological factors influence the inclusive or exclusive potential of AI?
- What are the concrete risks that AI will exacerbate existing digital inequalities and create new forms of disparity?

- What strategies and policies could promote truly inclusive AI development and adoption that contribute to technological equity?

2. Hypotheses of our work

These are the guiding principles of our research, and the quality of the results of this study depends on them. Thus, to provide a provisional answer to the questions we asked above, we put forward the following two hypotheses:

- In the opinion of the populations of Central Africa countries, for AI systems to deliver the expected positive socio-economic, political and cultural impacts, it is essential, even mandatory, to ensure that citizens understand the theoretical foundations of these systems and their functionalities, while taking into account the African context in order to develop effective strategies for successful technological inclusion and equity, and to encourage citizens to participate actively in decision-making process(es).
- According to this population, as Africa is predominantly "mobile-first", with Internet access mainly via mobile phones, it could opt for mobile models where smartphones replace hospitals, blockchain secures doctors, AI speaks local languages, and mobile is optimized with low bandwidths. With these technological innovations, it will be able to leapfrog 50 years of infrastructure delays to provide quality healthcare, personalized learning, productive agriculture, inclusive finance, transparent governance, and more.

In order to better elucidate our issue, this work will tackle various aspects such as the historical potential of AI, the risks of a new instrument linked to technological inequalities, and the conditions for successful inclusion.

3. Methods and techniques used

In view of the definitions of the concepts of method and technique, in order to collect data that would enable us to verify our two hypotheses, we conducted a field survey of populations living in urban and rural areas of Central Africa countries using a questionnaire, which we supplemented with documentary research and interviews.

Thus, the study that led to this research was designed not only as an assessment of the use and deployment of AI in Central Africa, but also as a means to assess the current state of public policies put in place to enable digital inclusion and technological equity.

The researchers therefore ensured that it included practical practices for the involvement of the main institutions in the various Central African nations (governments, parliaments, ICT

regulatory authorities, ICT companies, etc.) in the ethical governance of AI, with a view to making it a real catalyst for economic development for the benefit of all populations.

The study was conducted in four countries, specifically at 25 sites, according to a geographical distribution covering most of the countries in the sub-region. These are:

1) The DRC

In the provincial city of Kinshasa, which is the seat of government, the province of Maindombe, the province of Kwilu, the province of Kongo Central, the province of Kasaï, the province of South Ubangi and the province of Maniema.

2) Congo-Brazzaville

The city of Brazzaville, which is the seat of government, the city of Pointe-Noire, the Plateaux Department, the Cuvette Department, the Kouilou Department, the Pool Department, the Bouenza Department and the Lékoumou Department.

3) Gabon

The city of Libreville, which is the seat of government, the city of Franceville, the province of Haut Ogooué (Franceville), the province of Moyen Ogooué (Lambaréné) and the province of Ngounié (Mouila).

4) Cameroon

The city of Yaoundé, which is the seat of government, the city of Douala, the province of Adamaoua (Ngaoundéré), the province of East (Bertoua) and the province of North-West (Bamenda).

The study methodology was exclusively qualitative, combining five data collection methods, namely:

- An analysis of documentary sources;
- Semi-structured interviews;
- Organization of focus groups;
- The holding of public forums;
- Field visits.

a) Analysis of documentary sources

The researchers set about analyzing the laws, existing regulatory frameworks and other enforcement measures taken by the governments of the countries in our study in the digital technologies sector, as well as reading a set of documents (white papers, reports, action plans, strategic frameworks, etc.) likely to promote the implementation of this digital

transformation in Africa. It should be noted that researchers encountered considerable difficulty in reviewing the documentation and literature due to the lack of written documents on AI systems in particular and emerging technologies in general. Even the legal acts (laws, regulatory frameworks) creating or governing AI are not known to the general public and have not even been published in the Official Journal. It should be noted that, according to most of the officials interviewed by our researchers, documentation on AI in the various countries surveyed is in its infancy. However, there are a few doctrinal studies and research reports on emerging technologies or AI in Central Africa.

b) Conducting semi-structured interviews and focus groups

In order to build a meaningful sample, it was decided to define strategic target groups and to look for contrasts between the information collected, based on variations in policy. The criteria for determining the strategic groups were, in particular: occupation in the public sphere (actors likely to come into contact with AI technologies, individual users such as students, sellers of digital goods, small traders, etc.); specific categories likely to be more "targeted" by AI technologies because they are assumed to be able to fulfill their needs (such as women, young people, etc.); membership of community leaders (parents, spouses, children, etc.).

Focus groups were organized at all sites and convened civil society delegates, opinion leaders, and a few telecom and political leaders, who participated in an individual capacity. However, at all sites, there was a notable refusal by agents and civil servants to agree to direct interviews. They were also very reluctant to participate in focus groups alongside the members of civil society.

It was also very difficult for researchers to use group analysis methods (MAG) due to the deep mistrust shown by both the authorities and civil servants towards the study. The confusion among the population between the opportunities offered by AI technologies and the risks involved, particularly in the use of these technologies, as well as the ignorance of the public policies put in place by governments in the governance of AI by almost the entire population, were a real obstacle to the conduct of the surveys.

c) The organization of People's Forums (TEP)

In order to gather the population's perceptions of AI in front of a large audience in record time, People‘s Forums (Tribunes d'Expression Populaire - TEP) were organized in all the sites chosen in the different countries. The categories targeted by these TEPs included: employees, community leaders (street, neighbourhood and village chiefs), teachers' unions, religious communities (pastors, worshippers, believers, etc.), CSO leaders and student committees.



d) Field visits

In addition to the various cities, three field visits were organized at each site. These covered the provinces of Maindombe, Kwilu, Kongo Central, Kasaï, South Ubangi and Maniema in the DRC; the city of Pointe Noire, the departments of Plateaux, Cuvette, Kouilou, Pool, Bouenza and Lékoumou in the Republic of Congo; the city of Franceville, the provinces of Haut Ogooué, Moyen Ogooué and Ngounié in Gabon; and the city of Douala, the provinces of Adamaoua, East and North-West in Cameroon, where a number of interviews were conducted with some key actors. It should be noted here that our budget and the very limited time available for the survey did not allow us to conduct a large number of interviews and public forums.

4. Scope of the subject

It would be overly ambitious on our part to claim to be working on the entire population of the selected countries in Central Africa, given the time available to us and the resources at our disposal. We therefore limited ourselves to a more or less representative sample of subjects covering the entire sub-region. It would be futile for us to claim to be the first to conduct research on AI as a historic opportunity or a new instrument of inequality in Africa.

Several studies prior to ours have been carried out on this subject, either directly or indirectly, around the world. This is particularly the case with the studies below on public health in **India**, **Thailand** and **Vietnam**, as well as studies in countries such as **Brazil**, **Chile, Colombia** and **Argentina**, which show a growing adoption of AI focused on precision agriculture.

Asia has become a major driver of AI innovation, with countries such as **China** and **India** leading the way, but also with significant advances in other emerging economies.

Countries such as **India**, **Thailand** and **Vietnam** have conducted studies to improve access to specialized medical diagnostics, particularly in rural areas, and to support the prevention of chronic diseases. They have successfully developed and deployed AI-based solutions that are increasingly being used in medical image analysis, early disease detection and clinical decision support.

This is the case in **India**, where start-ups such as **Niramai Health Analytix** are using AI for early breast cancer screening through thermography, a non-invasive and accessible method. Other initiatives focus on diagnosing diabetic retinopathy from eye images, enabling large-scale screening.

There are also projects in **Thailand** and **Vietnam** exploring the use of AI for lung imaging analysis to detect tuberculosis or other respiratory conditions, which is particularly relevant in areas where radiologists are scarce.

The positive impacts in these cases are numerous, including democratizing access to advanced diagnostics, reducing screening costs, and improving public health outcomes, particularly in underserved areas.

On the side of **Latin America**, countries such as **Brazil**, **Argentina**, **Chile**, and **Colombia** are showing increasing adoption of AI, often focused on social and economic challenges by optimizing agricultural yields, early detection of crop diseases, irrigation management, and improving sustainability in the face of climate change.

These countries are developing and deploying start-ups and research institutes that use AI to analyze data from IoT sensors, drones and satellite imagery. This data enables them to create predictive models for soil health, water requirements, and pest and disease identification.

In **Brazil**, for example, AI is used for surveillance of coffee plantations and to optimize crops such as soybeans and sugar cane. Platforms such as **AgroSmart** provide data analysis to help farmers make informed decisions.

In **Argentina**, AI is used for early disease detection and crop management, providing inputs to more resilient agriculture.

And in **Colombia**, AI helps detect crop diseases and optimize inputs. The positive impacts of these AI-based solutions include improved productivity, reduced losses, optimized water and fertilizer resources, and the promotion of more sustainable agriculture.

To conclude this section, we would like to say that these previous studies in public health and diagnostics in **India**, **Thailand** and **Vietnam**, as well as in **Brazil**, **Chile, Colombia** and **Argentina** focused on precision agriculture, have inspired us and confirmed the importance accorded to our research topic.

5. Research Objectives

5.1. General Objective

Our objective is to analyze the opportunities offered by AI as a catalyst for inclusive development and technological equity in Africa, taking into account the realities of persistent digital inequalities and the risks of exacerbating existing divides for successful development and deployment.

5.2. Specific Objectives

Specifically, to take stock of or map the current state of AI deployment and perception by:

- Identifying and documenting the main AI initiatives and applications that are currently being developed and deployed in various key sectors such as health, education, agriculture, finance, governance, etc. across the continent, analyzing the geographical and sectoral distribution of these initiatives;
- Assessing the level of awareness and perception of AI among different populations such as experts, decision-makers, researchers and the general public;
- Identifying the socio-economic, political and technological factors that influence the inclusive or exclusive potential of AI;
- Examining the impact of existing digital inequalities, such as access to basic infrastructure, digital literacy, the cost of digital devices and internet access, on the adoption and use of AI to analyze the role of government policies, regulatory frameworks and investments in promoting inclusive AI;
- Assessing the influence of cultural, linguistic and educational factors on the uptake of AI by different local communities;
- Identifying specific technological barriers that hinder equitable access to AI;
- Assessing the concrete risks that AI exacerbates existing digital inequalities and creates new forms of disparities by analyzing the potential for algorithmic bias in AI systems developed and deployed in different African countries and their potential impacts on marginalized populations;
- Studying the risk of concentration of AI benefits among privileged actors such as companies, regions and cities, to the detriment of rural areas;
- Assessing the potential impact of AI automation on the African labor market and the most vulnerable populations;
- Identifying new forms of inequality that could emerge due to differentiated access to AI-related opportunities such as highly skilled jobs, entrepreneurship, etc.;
- Suggesting policies and strategies to maximize the inclusive potential of AI and promote technological equity by identifying strategies to overcome barriers related to digital inequalities and foster more equitable access to AI;
- Formulating recommendations for public policies that encourage the development and deployment of inclusive and ethical AI;
- Proposing courses of action for key actors such as governments, businesses, CSOs, international organisations, academics, researchers and ordinary citizens to ensure that AI contributes to inclusive development and technological equity;
- Suggesting a Monitoring & Review mechanism to measure the impact of AI on inclusion and equity.

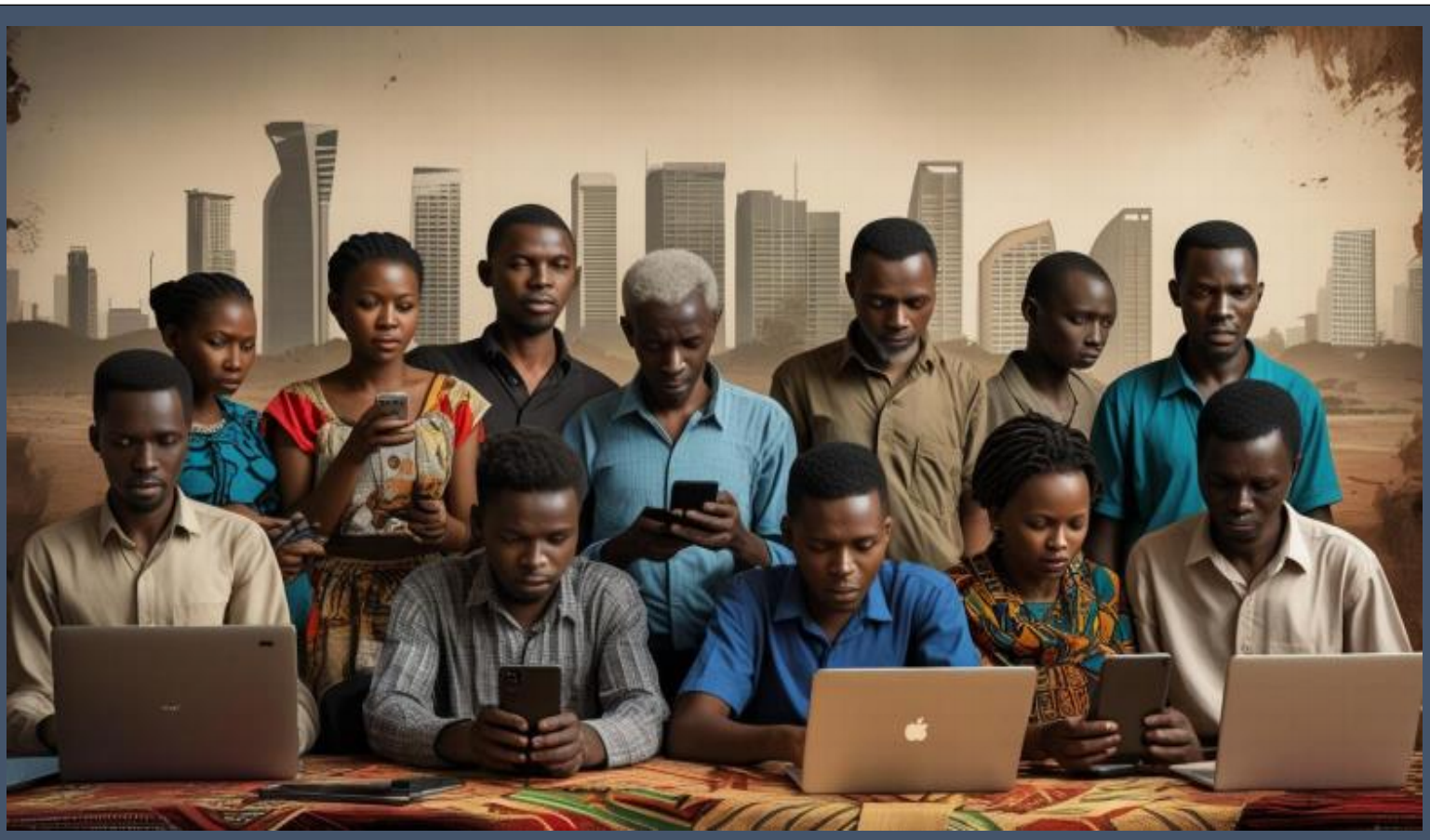
6. Expected results and the importance of the research

The aim of this research is to identify the extent of persistent digital inequalities in areas where the technological divide is most significant in order to adapt public policies accordingly; to assess their effectiveness in terms of the impact of the actions to be implemented, so that AI can be a real catalyst for inclusive development and technological equity, and to reduce the technological divide; to monitor the evolution of this digital divide over time in order to adjust the various strategies required and enable a cultural change within our societies, placing citizens and individual users at the center of our concerns.
Digital accessibility is much more than a legal obligation; it is a major societal issue that aims to ensure that everyone, including marginalized and vulnerable people living in inaccessible rural areas, can access information and online services.
This is clearly in our interest, as reducing digital inequalities represents a historic opportunity to ensure technological inclusion and the effectiveness and sustainability of AI development in all areas. Based on our research findings, we make useful recommendations and suggestions to African decision-makers, local businesses and CSOs with a view to proposing sound public policy guidelines that meet the needs of marginalized populations in order to reduce digital inequalities and achieve technological inclusion.

7. Division of labour

In addition to the introduction and general conclusion, our work is divided into five chapters:

- The first chapter reports on the current use of AI systems in Africa.
- The second chapter is devoted to defining and explaining the basic concepts we have used.
- The third chapter presents the field of study, namely Central Africa.
- The fourth chapter reports on the methodological approach of the work.
- And the fifth chapter discusses the analysis and interpretation of the data and the results we have obtained.



CHAPTER I

CURRENT USE OF AI SYSTEMS IN AFRICA

1. Current situation

Where are we today?

Africa in the age of AI: Multi-speed deployment between innovation and structural challenges. Artificial intelligence (AI) is experiencing undeniable growth on the African continent, driven by a booming technological ecosystem and a desire to respond to local challenges through innovation. However, the deployment and development of these systems is occurring at very different rates across sub-regions, creating a contrasting map where centers of excellence coexist alongside areas still on the margins of this revolution. From healthcare to agriculture, finance and environmental protection, concrete projects demonstrate the transformative potential of AI, despite persistent obstacles related to infrastructure, data availability and training.

While Africa presents a mixed picture in terms of AI deployment, a fundamental trend is emerging. Innovative solutions are springing up everywhere to address concrete issues. The success and spread of these initiatives depend on the continent's ability to address the challenges of training, data governance, and the establishment of robust digital infrastructures that are accessible to all. The potential is immense, and Africa is determined not to be left on the sidelines of this global technological revolution.

1.1. North Africa with national strategies to catalyze innovation

North Africa, with countries such as Egypt and Morocco, stands out for its increasingly institutional approach. Egypt has adopted a national strategy for AI and is stepping up initiatives to position itself as a regional leader. The Egyptian start-up **Elves** is a good example of this dynamic. It is an AI-based virtual personal assistant, accessible via messaging applications such as Facebook Messenger. Users can entrust it with a multitude of tasks, from booking flights to ordering meals, as well as personalized recommendations. **Elves** combines natural language processing and machine learning to understand user queries and respond to them in a way that is effective, thus integrating itself into the daily lives of its users.

Morocco, for its part, has invested in cutting-edge infrastructure, notably by acquiring the most powerful supercomputer in Africa, a major asset for AI research and development. AI applications are also being explored in the tourism sector to personalize offers and in financial services for credit risk assessment.

1.2. West Africa, a dynamic start-up ecosystem

West Africa, led by giants such as Nigeria and highly active countries such as Ghana and Senegal, is characterized by a proliferation of start-ups developing AI solutions adapted to local realities.

In Ghana, the startup **Cowtribe** uses AI to optimize the distribution of vaccines for livestock. Its platform makes it possible to forecast vaccine needs in remote rural areas, aggregate demand and ensure reliable and timely delivery. This system provides input to reduce animal mortality and improve the livelihoods of livestock farmers.

In Nigeria, companies are developing natural language processing models for local languages. The start-up **Andakia**, for example, has developed speech recognition and translation models for languages such as Yoruba and Igbo, promoting digital inclusion and the development of voice services accessible to as many people as possible.

Regional initiatives, such as those of the organization Data Science Nigeria, also promote training and the creation of a community of AI practitioners.

1.3. East Africa, with Kenya as the driving force behind innovation

East Africa, and Kenya in particular, has established itself as a true technological hub on the continent. Nairobi, nicknamed the "**Silicon Savannah**", is home to numerous start-ups and AI research laboratories.

In the agricultural sector, Kenyan start-up **Taimba** has developed a B2B mobile platform that uses data analysis and AI to reduce food waste. It connects rural farmers directly with urban traders, optimizing the supply chain and ensuring better prices for producers.

AI is also central to the success of the **M-Pesa** mobile payment platform, which uses it for fraud detection and user behavior analysis to offer new financial services.

Although originally American, **Zipline** has a strong presence in Rwanda and Kenya. It uses autonomous drones and AI-based logistics to deliver blood and emergency medical supplies to hard-to-reach areas.

1.4. Southern Africa with South Africa as a structured leader

South Africa is undoubtedly the most advanced country on the continent in terms of AI development and integration. It benefits from a mature ecosystem, leading research universities and a private sector that invests heavily in technology.

South African start-up **FinChatBot** develops AI-based chatbots for financial institutions. These conversational agents automate customer service, facilitate new customer acquisition and provide personalized financial advice, thereby improving the operational effectiveness of banks and insurers.

The country is home to the African Institute for Artificial Intelligence (**AIISA**), a government initiative aimed to develop research, skills and entrepreneurship in the field of AI.

2. Current context of AI deployment in Central Africa

The deployment of AI systems in the Central Africa sub-region is still in its infancy, but it is a rapidly evolving field, characterized by emerging initiatives with significant structural challenges and considerable development potential, often supported by international organizations and partnerships. The context is complex and completely different from that of other regions of the world. Nevertheless, specific, high-impact projects are beginning to emerge, particularly in the field of nature conservation.

The **Mbanza AI** project, developed in Gabon in collaboration with international research institutions, is a remarkable illustration of the use of AI for biodiversity protection. This software uses deep learning algorithms to automatically analyze millions of images captured by camera traps in national parks. **Mbanza AI** can identify and classify animal species with great accuracy, enabling ecologists to monitor animal populations, combat poaching and better understand forest ecosystems. This manual task used to take months or even years.

2.1. Institutional and strategic frameworks

Central African countries are beginning to recognize the potential of AI and lay the foundations for its development. The Democratic Republic of Congo (DRC) has validated its national report on AI readiness, a document that sets out a road map for ethical and inclusive AI. Cameroon is also in the process of developing its national AI strategy, and Congo-Brazzaville is preparing to launch, in collaboration with the United Nations Economic Commission for Africa (**ECA**), an AI research center to aim to position the country as a major player in the sub-region.

2.2. Emerging areas of application

In general, AI applications focus on priority areas for sustainability, such as precision agriculture for soil composition analysis and disease detection, with the aim of improving yields; the environment, where software called "**Mbanza AI**" has been developed for biodiversity preservation in the Congo Basin, demonstrating the adaptation of AI to local challenges; initiatives to aim to use AI to improve access to education, in particular by equipping schools with multimedia rooms; in healthcare, although more common in West Africa, East Africa and Southern Africa, where applications are emerging to facilitate diagnosis, particularly in rural areas, and also in finance and business, where AI is seen as a lever for wealth creation and business process improvement. It is beginning to be explored for the automation of credit applications and the analysis of economic trends.

3. Challenges and opportunities

The deployment and development of AI in Central Africa faces significant challenges while offering unique opportunities.

3.1. Challenges or obstacles

The results of this research detail a multitude of considerable challenges and obstacles that are hindering the full deployment and development of AI in all sectors, despite promising opportunities and emerging successes in Africa. These challenges are often multidimensional, encompassing technological, socio-economic, political and cultural aspects.

Digital infrastructure is often limited or of poor quality, hindering the deployment of data-intensive solutions. There is a shortage of skilled human resources in data science and AI, requiring massive investment in training. The lack of local and representative data is a major obstacle to training algorithms adapted to African realities. Investment in AI remains low compared to the rest of the world, making it difficult to develop robust technological ecosystems. The establishment of robust legal and ethical frameworks is essential to ensure the responsible use of AI and prevent abuses. The DRC is, in theory, at the forefront in this regard.

3.1.1. Challenges related to the digital divide and infrastructure

Although mobile connectivity is improving, a large part of the African population, particularly in rural and remote areas, still does not have access to the internet or a stable, high-quality connection. The cost of connectivity (mobile data, subscriptions) and devices (smartphones, computers, tablets) remains prohibitive for the majority of the population, widening inequalities and effectively excluding many citizens. The lack of robust telecommunications infrastructure (fibre optics, extensive 4G/5G networks) in many regions hinders the speed and reliability of access. Poor to no access to reliable electricity is a fundamental barrier to the use of digital devices and access to the Internet, particularly in rural areas. A large proportion of the population lacks the basic skills needed to use digital tools in a manner that is effective, to assess online information, or to participate constructively in digital debates. This limits citizens' ability to fully exploit the potential of AI and the internet, and makes them vulnerable to cyber threats and disinformation.

3.1.2. Policy and governance challenges

Several governments resort to internet shutdowns or restrictions on access to social media, particularly during election periods, protests, or crises, to stifle dissent and control information. The adoption of vaguely defined cybersecurity or cybercrime laws is often used to muzzle online freedom of expression, targeting journalists, activists, and critical voices. The use of generative AI by governments poses serious threats to the privacy and security of citizens and human rights defenders. The lack of investment, clear strategies and a real willingness to implement AI initiatives is a major obstacle. Resistance to change within public administrations slows down the adoption and integration of AI tools. Many countries in Central Africa lack comprehensive personal data protection laws or have existing laws that

are not enforced with effectiveness, leaving marginalized populations vulnerable to data abuse. The absence of clear ethical and regulatory frameworks for AI poses risks of algorithmic bias, discrimination and violations of fundamental rights.

3.1.3. Social and cultural challenges

The rapid proliferation of fake news and disinformation via social media is a major challenge, exacerbating social tensions, manipulating public opinion and undermining trust in digital technologies and institutions. The lack of fact-checking skills makes the population particularly vulnerable. Digital platforms have become vectors for hate speech, incitement to violence and the polarization of societies, particularly in contexts where ethnic or political divisions are already latent. Low levels of trust in AI prevent citizens from using digital platforms to interact with the state, fearing for their privacy or the manipulation of their data. This mistrust extends to citizen participation tools, which are perceived as window dressing with no real impact on decisions.

3.1.4. Organisational and Financial Challenges

African CSOs, often at the forefront of promoting digital transformation, operate on limited budgets and are heavily dependent on external funding, which makes their work precarious and difficult to plan for the long term. Despite their good intentions, many CSOs lack the technical expertise needed to develop, maintain and secure complex digital tools, or the s to critically analyze the implications of new technologies such as AI. The lack of coordination between different CSOs on the continent leads to fragmentation of efforts and weakens the collective impact of advocacy.

3.1.5. Barriers to achieving the SDGs

The technology divide hinders progress towards several Sustainability Goals, the United Nations Development Programme's Agenda 2030, particularly those related to quality education (SDG 4), gender equality (SDG 5), decent work and economic growth (SDG 8), reducing inequalities (SDG 10) and promoting peaceful, just and inclusive societies (SDG 16).

3.1.6. The risks of creating a new instrument of inequality

The results collected and the documentation consulted show that the existing digital divide is a breeding ground for AI-induced inequalities. The lack of basic infrastructure, high-speed connectivity, affordable devices to tackle, local innovation, a clear policy to mitigate brain drain, technological dependency, adequate training, etc. The impact of AI on employment: on the one hand, it can improve business effectiveness, create new jobs and facilitate repetitive tasks. But on the other hand, it risks replacing humans with machines and destroying certain jobs, particularly those requiring few skills, and creating inequalities in the labor market.

Will Africa remain a passive consumer or will it be an active creator of its own solutions tailored to its context? The data used to train AI models in Africa is often Western, which limits their local relevance. Here we provide a non-exhaustive list of risks that could give rise to a new instrument of inequality in Africa:

- More than 90% of AI models developed in most African countries use Western data that is unsuited to local realities.
- Only 2% of global investment in AI goes to Africa, and 75% of this investment benefits English-speaking countries such as Nigeria, South Africa, Kenya, Egypt and Ghana;
- More than 70,000 qualified African professionals leave the continent each year, and 40% of AI graduates go abroad (African Union).
- More than 60% of African technology graduates struggle to find local jobs because they do not meet the requirements;
- More than 80% of advanced AI training is very often concentrated in English-speaking countries such as South Africa, Nigeria, Kenya, Ghana, Egypt, etc.
- Only 5% of African schools teach programming or AI, and the programmes often remain theoretical.
- More than 230 million Africans are still illiterate, and more than 60% of schools have no electricity.
- Less than 20% of African AI professionals are women.
- More than 70% of educational content and technology training is in English.
- Over 60% of Africans still do not have reliable access to the Internet, and the cost of deploying fixed and mobile networks remains prohibitive in rural areas.
- 1 GB costs on average 7% of monthly income in Africa, compared to 1% in Asia.
- Fragmented regulations and lack of coordination, as well as political, social, economic and cultural instability, are hindering investment;
- Poor governance, corruption, interference, lack of leadership, etc.
- Africa spends only 0.5% of its GDP on technological R&D, compared to 2.5% in South Korea, and citizen participation remains low, particularly in marginalized communities.

3.1.7. Exacerbation of inequalities

In this section, the results obtained showed that people who are not connected are deprived of essential access to information, online educational resources and opportunities for continuous learning, which widens the educational and social divide. The digital divide isolates individuals and communities, limiting their participation in social, political and cultural life. Limited access to health information and telemedicine services disadvantages unconnected populations, particularly in rural and underserved areas. Women are often more affected by the digital divide due to cultural norms and limited access to education and resources, which limits their economic and social empowerment. Lack of digital literacy



exposes the most vulnerable citizens to misinformation, scams, threats, harassment and other online risks.

3.2. Opportunities

AI is seen as a powerful tool for achieving the Sustainable Development Goals (SDGs) in Africa by addressing specific issues such as food security, public health and education. AI can stimulate the emergence of innovative solutions tailored to local needs, developed by African actors for Africa. Growing demand for AI is prompting governments and institutions to invest in human capital, opening up career opportunities for young people. Collaborations with international organizations (UNESCO, ECA) and global technology companies (Google) facilitate access to funding, expertise and technology.

3.2.1. A historic opportunity to develop Africa

The results of our research inspire optimism and a firm commitment from all stakeholders to the development of AI on the continent. AI has considerable transformative potential for key development sectors in Central Africa, offering innovative solutions to the enormous challenges facing the sub-region and providing a historic opportunity to leapfrog stages and catch up on structural delays, as well as create local jobs to accelerate economic growth, local innovation and the formation of an elite, without going through the traditional stages.

The ITU points out that mobile phone networks are the backbone of Internet access in sub-Saharan Africa, as fixed broadband infrastructure is still limited and expensive. This thesis is reinforced by **Gregory Rockson**, CEO of **mPharma,** who explains, "*When mobile telecommunications networks were set up in Africa, large telecommunications groups*

invested in towers before selling SIM cards to consumers. Our application is the SIM card that we give to doctors and hospitals. We build the towers to enable them to use the application."

Africa could directly adopt advanced AI solutions without relying on the heavy infrastructure of Western countries, by inventing unique models where smartphones replace hospitals, blockchain secures medicines, AI speaks local languages, and so on. The future of digital technology in Africa will not come from elsewhere, but from a mobile phone. With these innovations, the continent could cut 50 years of infrastructure delays to provide quality healthcare, personalized learning, productive agriculture, inclusive finance, and cutting-edge solutions such as M-pesa mobile banking, Flutterwave, Zindi, Deep Learning Indaba, Masakhane projects, and more.

3.2.2. In the field of health

Every year, the sub-region of Central Africa is very often the victim of epidemics, natural disasters and armed conflicts, forcing populations to flee en masse and exacerbating health crises. According to a report by the World Health Organisation (WHO), AI analyses public health data, mobility data and media outlet information to predict and track the spread of epidemics, enabling faster and more targeted interventions, especially in inaccessible areas. AI is being used to solve problems related to skills shortages, insufficient numbers of doctors and inadequate medical facilities, especially in very remote rural areas, by creating secure, transparent electronic medical records ( ) that are accessible to authorised healthcare professionals. This is particularly important in our context, where infrastructure is limited, in order to improve continuity of care and reduce medical errors. AI assists in the analysis of medical images (X-rays, MRIs), laboratory data and patient records to help diagnose diseases such as cancer, tuberculosis and eye diseases with greater accuracy and speed, particularly in inaccessible rural areas where specialists are rare.

This is the case with a few examples of successful automated diagnostics via applications in Africa, such as Ubenwa, Gavi, mPharma (Ghana), 54 Gene (Nigeria), Zipline (Rwanda, Ghana), AI for Health, Google - AI Centre (Ghana), Waspito in Cameroon, etc.

3.2.3. In agriculture

In Africa, according to the United Nations Food Agency (WFP), agriculture plays a crucial role in the economy and food security, but is often vulnerable to climate hazards and traditional practices. AI applications are being used to analyze satellite data, weather conditions, soil quality and sensor information to provide farmers with personalized recommendations on irrigation, fertilization, pest control and optimal planting and harvesting dates. Drone imaging and AI image analysis are used for crop health surveillance, detecting diseases and pests at an early stage, and tracking livestock behavior and health. AI models are used to predict crop yields based on various factors, thereby assisting in food stock planning and management. AI applications are used to improve the effectiveness of the agricultural supply

chain through demand forecasting, logistics optimization and post-harvest loss reduction. It assesses farmers' creditworthiness using alternative data (mobile phone transactions, satellite imagery) to facilitate access to credit and insurance. It is being used to improve forecast accuracy, early warning systems for extreme events, adapt agricultural practices to climatic conditions, and more.

Some concrete examples cited in this work developed in Africa are Hello Tractor (Nigeria), Aerobatics (South Africa), Agri Edge (Morocco), Watson Decision Platform for Agriculture, FarmBeats Project (Kenya), Farmonaut, Kiazi Bora, etc.

3.2.4. In the field of education

In some African countries, AI platforms are used to generate and organize interactive educational content, virtual simulations and multimedia resources to make learning more engaging; analyze student performance data to identify trends, predict outcomes and help educators make informed decisions. AI-based virtual tutors provide personalized assistance to students, answering their questions and offering target feedback outside of class hours. AI is used to automate tasks such as exam marking, lesson planning and enrolment management, freeing up teachers' time to focus on teaching.

We have a few examples such as Eneza Education (Kenya), Ulesson (Nigeria), Orange Energy (DRC), Orange Digital Centres Training Africa's Next Tech Generation, etc.

3.2.5. In finance

Blockchain is used in the development of fintechs for financial inclusion through alternative biometric identification and credit assessment, fraud detection, reduction of the financial divide, affordable access and inclusive models, and support for innovation to catalyze investment growth. AI is used in the analysis of non-traditional data (mobile phone transactions, social media activity) to assess the creditworthiness of unbanked individuals and enable them to access financial services. AI algorithms analyze financial transactions in real time to detect suspicious activity and prevent fraud, improving the accuracy of credit assessment models and enabling financial institutions to make more informed decisions. This is the case with Databank (Nigeria), M-pesa (Kenya), JUMO (South Africa), PiggyVest (Nigeria), Wave (Senegal), etc.

3.2.6. In the field of governance and public services

AI is improving administrative effectiveness, optimizing public resource management, detecting corruption and facilitating the delivery of services to citizens. It is used in wildlife surveillance, anti-poaching, satellite image analysis for deforestation and natural disaster prevention. AI optimises water use, forecasts energy demand and improves mine management. In some North African countries, such as Egypt and Morocco, it is used to

optimize transport routes, improve traffic management and develop intelligent transport systems.

In Central Africa, Rwanda is often cited for its progress in e-government, where the **Irembo** application, a unique platform, allows citizens and businesses to access more than 100 government services online (passport applications, driving licences, birth certificates, etc.). **Senegal, Côte d'Ivoire** and now the **DRC** are also making significant progress in digitizing administrative procedures, simplifying access to services for their populations. SMART Africa (25 signatory countries), Starlink in Africa (Nigeria, Rwanda, Kenya, etc.), Google AI Centre (Ghana), Open AIR, Azure Space with SES, IBM Research Africa (Kenya, South Africa), etc.

3.2.7. Citizen participation and election monitoring

Ushahidi in Kenya, launched after the post-election violence of 2008, is a crowdsourcing platform that allows citizens to report incidents (violence, electoral irregularities) via SMS, email or the web. It has been replicated in many African countries for election surveillance and mapping other types of incidents (natural disasters, human rights). **AfricTivistes** in Senegal, a pan-African organization that is a key example of digital citizen mobilization. It trains cyberactivists, develops tools for election monitoring and combating disinformation, and promotes digital citizenship in French-speaking Africa. Movements such as **#FeesMustFall** in South Africa have demonstrated the power of social media to mobilize young people and influence public policy.

3.2.8. Transparency and Access to Information

Kenya, **Nigeria** and **South Africa** have launched open data portals, making information on budgets, public spending and other statistics accessible. Although their use is sometimes limited, they represent a step towards greater transparency. Several African countries participate in **the Extractive Industries Transparency Initiative** (EITI), using digital platforms to publish data on natural resource income, which helps to combat corruption in the extractive sector (Ghana, Nigeria). Initiatives such as "**Ville Propre**" (Clean City) in Morocco enable citizens to report urban problems (waste, damaged infrastructure) to local authorities, improving the responsiveness of services.

4. Stakeholders in the deployment of AI in Central Africa

The AI landscape in Central Africa is driven by various actors such as governments and public institutions, which are responsible for developing national policies and establishing regulatory frameworks. Entities such as the United Nations Economic Commission for Africa (ECA) and UNESCO play a crucial role in supporting research projects and advising states on the strategies to adopt. Universities and research centers are at the heart of AI skills development and research. Although the ecosystem is still emerging, the private sector and technology start-ups are beginning to offer AI solutions in a variety of fields.

The deployment and development of AI in the countries of Central Africa is a process of construction, marked by growing awareness among governments, the driving role of international organisations and the desire to use this technology as a powerful lever for development to solve local and structural problems, while navigating major challenges related to policy, infrastructure, skills and funding.

CHAPTER II

DEFINITION AND ELUCIDATION OF BASIC CONCEPTS

We have a duty to define and clarify key concepts in order to anchor this research and ensure a common understanding of fundamental terms, taking into account the context of our research, which we will use to clarify their meaning and thus avoid any ambiguity that may surround them.

Understanding Artificial Intelligence (AI), Digital Inclusion and Technological Equity is essential in the context of current technological development, particularly in Central Africa.

1. Artificial Intelligence (AI)

AI is a field of computer science that aims to create machines capable of simulating human intelligence, particularly in terms of reasoning, learning, problem solving, perception and language comprehension. Its goal is to enable machines to reason, learn, understand, perceive and interact in ways that mimic or surpass human cognition.

AI is a vast field that encompasses several sub-disciplines and technologies. Its fundamental goal is to enable machines to perform tasks that usually require human intelligence, which translates into:

- Machine learning (ML): This is the most common branch of AI today. It enables systems to learn from data without being explicitly programmed for each task. Instead of following fixed instructions, ML algorithms identify patterns in large amounts of data and adjust their own rules to improve their performance. Supervised learning: the system learns from labelled data (e.g. images of cats and dogs with labels "cat" or "dog"). Unsupervised learning: the system discovers hidden structures in unlabelled data (e.g. grouping customers into segments). Reinforcement learning: the system learns through trial and error, receiving rewards or penalties based on its actions (e.g. a robot learning to navigate).
- Deep learning (DL): A subset of machine learning that uses artificial neural networks (inspired by the human brain) with multiple layers to analyze data. DL is particularly effective for complex tasks such as image recognition, speech recognition and natural language processing.

- Natural Language Processing (NLP): Enables computers to understand, interpret and generate human language. Examples: chatbots, machine translation, sentiment analysis.
- Computer vision: Enables computers to "see" and interpret images and videos, such as facial recognition, object detection, or autonomous navigation.
- Reasoning and planning: The ability of systems to make logical decisions, solve complex problems, and plan sequences of actions to achieve a goal.
- AI applications: These are ubiquitous and constantly expanding, including virtual assistants (Siri, Google Assistant), recommendation systems (Netflix, Amazon), medical diagnostics, autonomous driving, fraud detection, logistics optimization, and many others.

2. Digital inclusion

Digital inclusion is a concept that goes far beyond simply connecting to the internet. It is a comprehensive process aimed to ensure that every individual, regardless of age, gender, language, area of residence or location, socio-economic status or income level, or physical and cognitive abilities, has equitable and meaningful access to information and communication technologies (ICT) and the opportunities they offer. It is opposed to the digital divide, which refers to the gap between those who have access to technology and those who are excluded from it. Digital and technological inclusion is based on several fundamentals:

2.1. Physical and financial access

High-quality infrastructure (broadband networks, 5G, fibre optic, etc.) must be accessible everywhere, including in rural and remote areas. All populations, regardless of income level, must be able to purchase digital devices (smartphones, computers, tablets) at an affordable price. Internet and mobile data subscription prices must be accessible to all.

2.2. Digital skills and literacy

Simply owning a digital device is not enough; technological inclusion means knowing how to use these devices in a manner that is effective and safe. This includes basic skills such as browsing the internet, using software, sending emails, and searching for information, as well as more advanced skills for employment or entrepreneurship, etc. This digital inclusion is not limited to technical use, but also involves developing the ability to assess online information, understand risks (cyberbullying, misinformation) and protect personal data, as well as developing digital citizenship, i.e. understanding the social codes and ethical issues related to the use of technology.

2.3. Relevant content and services

To be truly inclusive, online content must be available in the local languages that citizens speak and understand, and websites, applications and services must be designed to be

usable by people with disabilities, such as screen readers for the visually impaired or subtitles for the hearing impaired, and digital platforms and services must meet the specific needs of local communities, whether for education, health, employment or access to public services.

2.4. Support and guidance

It is crucial to offer training programmes and technical support to help people acquire and improve their digital skills; governments have a key role to play in implementing strategies and policies that promote digital inclusion and reduce existing inequalities.
Digital inclusion has become a major issue as technologies are increasingly integrated into all aspects of daily life, with many job offers, training courses and professional opportunities now available online, and administrative procedures, health and education services becoming increasingly digitized. these technologies enable greater citizen participation in public debate, political life and social mobilization; and in development, digital inclusion has become an engine of economic growth, stimulating innovation and creating new opportunities for small and medium-sized enterprises (SMEs).
Digital inclusion is a social and economic imperative that aims to ensure that no one is left behind in the digital transformation. It is a concerted effort to make digital technology a lever for equality and development for all. It aims to reduce the "digital divides" that may exist between urban and rural areas, rich and poor, young and old, men and women, or able-bodied and disabled people.

3. Technological Equity

Technological Equity is the principle that access to, use of, and benefits from technologies should be distributed fairly and impartially, ensuring that no group is systematically disadvantaged or excluded from their benefits. It aims to correct structural inequalities and ensure that technology is a catalyst for opportunities for all.

Technological equity is a deeper concept than digital inclusion, as it focuses on social justice in the deployment and impact of technologies. It involves ensuring that:

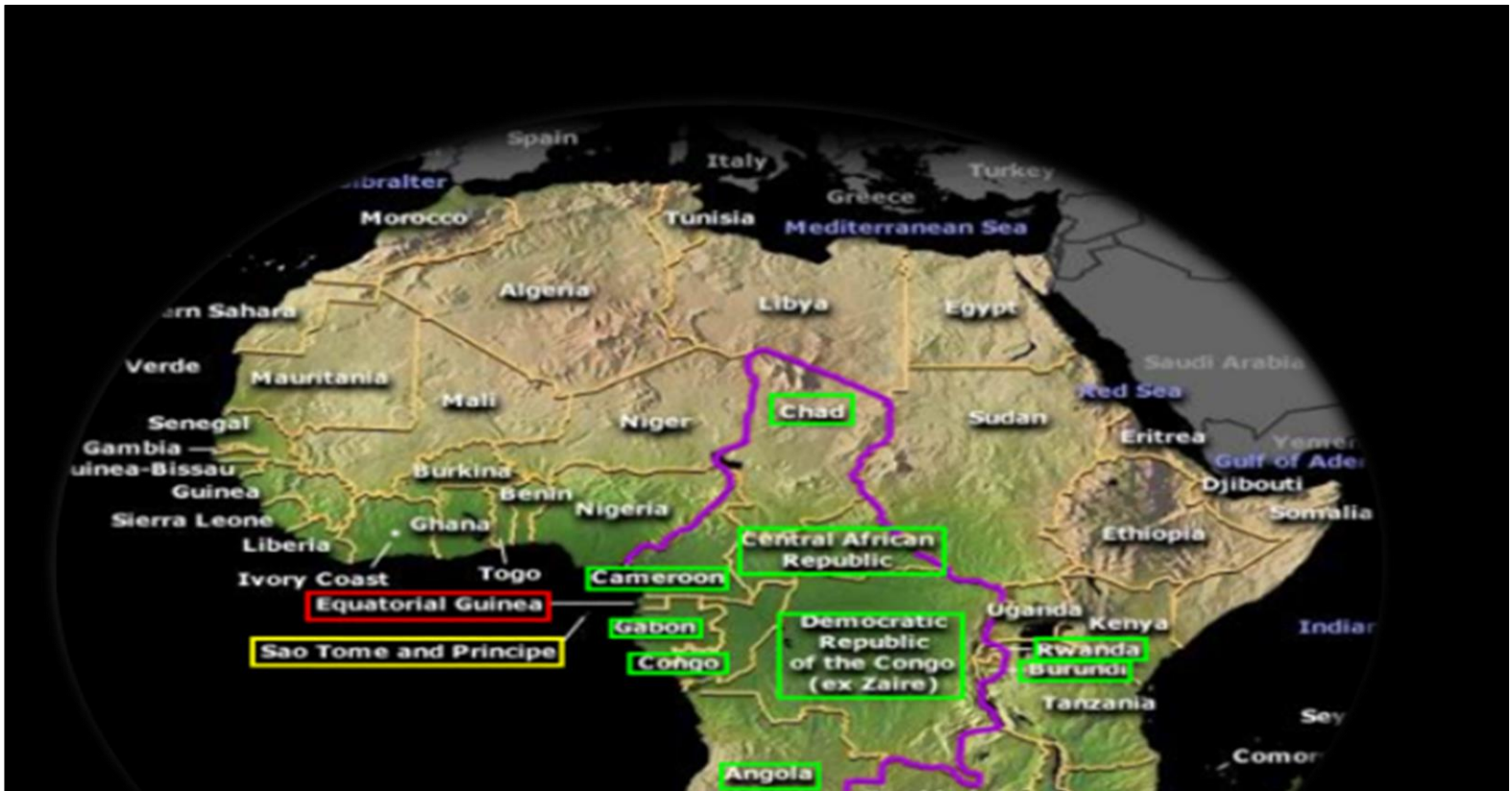
- The benefits of technology do not create new inequalities and a divide between those who can take advantage of it and those who cannot. AI innovations must be designed and deployed in a way that benefits society as a whole.
- Technologies, and AI in particular, can reproduce and amplify existing biases in the data on which they are trained. Technological equity requires recognizing and correcting these biases (e.g. facial recognition algorithms that may be less accurate for certain ethnicities, or in credit systems that may disadvantage certain groups).
- Access to technology must be available to all, regardless of geographical location, income, gender, race, language, age or disability. This is closely related to digital inclusion, but equity goes further by seeking to rectify power imbalances that could perpetuate these inequalities.

- Local communities and traditionally marginalized and vulnerable groups should be actively involved in the design, development and governance of technologies that affect them.
- The implementation of public policies, regulatory frameworks and initiatives that promote equality and equitable access to and use of technologies, ensuring that benefits are distributed fairly and risks are minimized for marginalized and vulnerable populations.

4. Digital inequalities

Digital inequalities refer to the significant disparities that exist between different groups of individuals and communities in terms of their ability to access, use, understand and benefit from digital technologies. These inequalities manifest themselves in several ways, including: differences in access, availability and affordability of digital infrastructure, such as stable and continuous high-speed internet access, affordable devices, access to electricity, etc.; the frequency, diversity and quality of digital technology use; the digital skills needed to use technology in a manner that is effective; the speed, reliability and stability of internet connections; the financial burden reported by accessing and using digital technologies in relation to income; and the availability of content and applications adapted to local languages, cultures and contexts.

In Central Africa countries, where inequalities are often pronounced and infrastructure limited, AI, digital inclusion and technological equity are interdependent concepts. The adoption of AI must be considered in parallel with digital inclusion strategies to ensure that this technology does not widen gaps, but rather contributes to fairer and more equitable development for all.



CHAPTER III

DESCRIPTION OF THE STUDY ENVIRONMENT, Central Africa

Central Africa is a vast and diverse region, characterized by a mix of socio-economic, geographical and technological challenges, often defined by the Economic Community of Central African States (ECCCAS), but also by significant development potential.

2. Geography and environment

The region is home to around half a billion people. It is marked by rapid urbanisation, with 48% of its population living in urban areas. However, vast rural areas, often consisting of dense forests and savannahs, make infrastructure deployment difficult and costly. It is therefore a vast territory, covering several million square kilometers. Its geography is dominated by several major features. At the heart of the region lies the Congo Basin, the second largest tropical rainforest in the world after the Amazon. This basin is an ecosystem of inestimable biodiversity, with the Congo River draining most of the region.

Around the basin, there is a diversity of landforms: to the west, the Mayombe mountain range; to the north, the Adamaoua plateau; and to the east, the high plateaus and

mountains of the Great Rift region, where there are volcanoes and lakes such as Lake Kivu and Lake Tanganyika.

The climate is mainly equatorial, hot and humid, with high rainfall, and is crucial for the forest cover, which plays a major role in regulating the global climate. The fauna and flora are extraordinarily rich, with iconic species such as gorillas, forest elephants and okapis.

The hydrography is dominated by the Congo River and its basin, but other important river basins exist, such as the Lake Chad basin in the north and the Nile basin in the east of the DRC.

3. Countries and Demographics

According to the United Nations definition, Central Africa comprises the following countries:

- Angola
- Cameroon
- Gabon
- Equatorial Guinea
- Central African Republic (CAR)
- Democratic Republic of Congo (DRC)
- Republic of the Congo
- Rwanda
- Burundi
- São Tomé and Príncipe
- Chad

A region rich in cultural diversity and natural resources, with a varied demographic characterized by strong population growth and rapidly increasing urbanization rates, even though the majority of the population remains rural. The DRC stands out as the most populous country in the region and one of the demographic giants of the African continent with approximately 109.3 million inhabitants, Angola with more than 37.9 million, Cameroon with more than 29.1 million, Chad with 20.3 million, Rwanda with 13.8 million, Burundi with 12.3 million, the Republic of Congo with 6.3 million, the CAR with 5.3 million, Gabon with 2.5 million, Equatorial Guinea with 1.9 million and São Tomé and Príncipe with 210,000 inhabitants. Cities such as Kinshasa (DRC) and Douala (Cameroon) have become megacities. The youthfulness of the population is also a notable feature of the region, with more than 40% of inhabitants under the age of 15. In Chad, for example, more than 60% of the population is under 25.

4. Socio-economic context

Central Africa faces extreme levels of poverty. In 2020, more than half of the 689 million people living below the international poverty line (less than $1.90 per day) in sub-Saharan Africa resided in this region. Poverty is particularly prevalent in rural areas, where more than 80% of people living in extreme poverty depend on agriculture for their livelihoods. In the Central African Republic (CAR), approximately 71% of the population lives in extreme poverty, and monetary poverty is 1.5 times higher in rural areas than in urban areas.

Access to electricity is a major challenge, with approximately 220 million people in Central Africa (nearly half the population) lacking access to electricity, which limits their ability to engage in economic activities and benefit from essential services.

The economy of Central Africa is mainly based on the exploitation of natural resources. The region is extremely rich in mineral resources (copper, cobalt, diamonds, coltan in the DRC), hydrocarbons (oil in Gabon, Angola, Chad, Cameroon, Equatorial Guinea and the Republic of Congo) and forest resources. Agriculture is a major economic activity, particularly for rural populations, and many products (cocoa, coffee, cotton) are exported. Despite these riches, the region faces significant economic challenges. According to the Human Development Index, several countries in this region are ranked among the poorest and most fragile in the world, with very low human development indicators. The economies are heavily dependent on fluctuations in world prices, which makes them vulnerable. The lack of roads, railways, electricity and telecommunications networks is a major obstacle to economic development, and conflicts and recurring political instability in certain countries (DRC, CAR, Chad, Cameroon) have disastrous consequences for the economy and the population, and the wealth generated by natural resources is often poorly distributed, fueling poverty and inequality.

5. Culture and Society

Central Africa is a melting pot of cultures, languages and traditions. French is the official language in most countries in the region, a legacy of colonization. However, a multitude of national languages and dialects are spoken.

In **the DRC**, the official language is French, with national languages (Swahili, Lingala, Kikongo and Tshiluba) and more than 450 local languages. In **Cameroon**: the official languages are French and English, local languages (Pidgin English, Fulfulde or Peul, Ewondo, Bassa, Douala, Ghomala, Bamiléké, Hausa). In **the Central African Republic**: the official language is French, the national language is Sango and the local languages are Gbaya, Banda, Manza and Zande. In **Chad**: the official languages are French and Literary Arabic, the national languages (Chadian Arabic, Sara and Ngambay) and local languages (Goulay, Moundang, Massa, Kanembou). In **Gabon**: the official language is French, the local languages are Fang, Mpongwe, Mbede, Punu, Teke, Kota, Sira and Lumbu. In **Congo**: the official language is French, national languages (Lingala and Kikongo or Kituba) and local languages (Lari, Teke,

Vili, Yombe, Mbochi, Punu, Yaka, Bembe). **Rwanda** has four (4) official languages: Kinyarwanda, English, which has gained importance since 1994, French, a colonial language still used in administration and education, and Swahili, added in 2017 to facilitate economic integration with the EAC. In **Burundi**, Kirundi is the official language spoken by 98% of the population, while French and English are used in administration, higher education and commerce. In **Sao Tome and Principe**, Portuguese is the official language used in administration, education and business, while Creole languages such as Forro, Angolar, Principense and Lung'iyé are also spoken. In **Angola**, the official language is Portuguese and the national languages are Umbundu, Kimbundu, Kikongo, Tchokwé, Nganguela and Kuanyama. **Equatorial Guinea** has three official languages: Spanish, which is used in administration and education, French and Portuguese, which were added for diplomatic and economic reasons, particularly for integration into French-speaking and Portuguese-speaking areas. The main local languages are Fang, Bubi, Ndowé, Annobonais, Benga and also Creole languages such as Fa d'Ambo and Pichinglis.

The region has a rich cultural heritage, with oral traditions, arts, music (such as Congolese rumba) and dances that vary from country to country. Traditional African culture is often community-centered and respectful of ancestors. These traditional values coexist with the influences of globalization and modernity.

Central Africa is a region of striking contrasts, with exceptional natural resources and immense development potential. However, it also faces profound structural challenges, particularly in terms of governance, infrastructure and human development.

6. Digital landscape

The digital landscape in Central Africa is characterized by ongoing development, but with significant challenges. The region generally lags behind other parts of the continent in terms of connectivity and infrastructure. However, government initiatives and investments from international partners are aimed to achieve digital transformation.

Infrastructure and Connectivity

In 2024, only 38% of the African population is online, well below the global average of 68%. In Central Africa, the figures are even lower: CAR has an internet penetration rate of 10.6% to 15.5%, Chad 12.2% to 25%, and DRC 27% to 40%. These figures are well below the African average of 36% to 38%. Most users depend on 2G/3G mobile access, as wired and broadband services are rare.

The DRC is undergoing a digital transition, with projects to support digital transformation approved with the aim of modernizing public and private services. Internet penetration is around 40%, mainly via mobile networks and in urban areas. Mobile money services such as

M-Pesa, Orange Money, Airtel Money and Afri-Money are booming, facilitating financial inclusion.

In Cameroon, the digital infrastructure is improving but remains insufficient. Mobile telephony is the main vector of connectivity, with a mobile penetration rate of 52% and a digital transformation strategy to address challenges such as low tele-density and the need to connect more rural areas and villages.

The Central African Republic has one of the lowest internet access rates in the world, with connectivity relying almost exclusively on 2G/3G mobile networks. However, efforts are being made to break down digital barriers through fibre optic projects connecting the country to Cameroon and the Republic of Congo. Gabon stands out for its notable advances in the digital sector in Central Africa with a £50 million project to boost its digital economy and diversify its sources of income, thus laying the foundations for more sustainable development.

The digital divide is particularly pronounced between urban and rural areas. In 2024, AI and Internet usage in cities was 57%, compared to only 23% in rural areas, the widest gap among all regions monitored by the ITU. For children and young people under the age of 25, only 5% in Central Africa have access to the Internet at home, compared to a global average of 33%.

Access costs are a major barrier. The median price of a basic mobile Internet package in Africa (4.2% of GNI per capita in 2024) is more than double the 2% affordability target set by the UN Broadband Commission. In CAR, 1 GB of mobile data costs up to 20% of average monthly income.

Infrastructure is limited and often outdated. Deployment is hampered by the high costs of installing and managing cell towers in remote areas, energy costs (diesel accounts for up to 60% of operating costs in the DRC for off-grid towers), and logistical constraints. Dependency on neighboring countries for access to submarine cables and the lack of reliable international connectivity routes expose national networks to disruptions.

The lack of digital skills is also a major obstacle. Hundreds of millions of Africans, including young people and women, are left behind without access to the internet and digital literacy.

Digital economy and usage

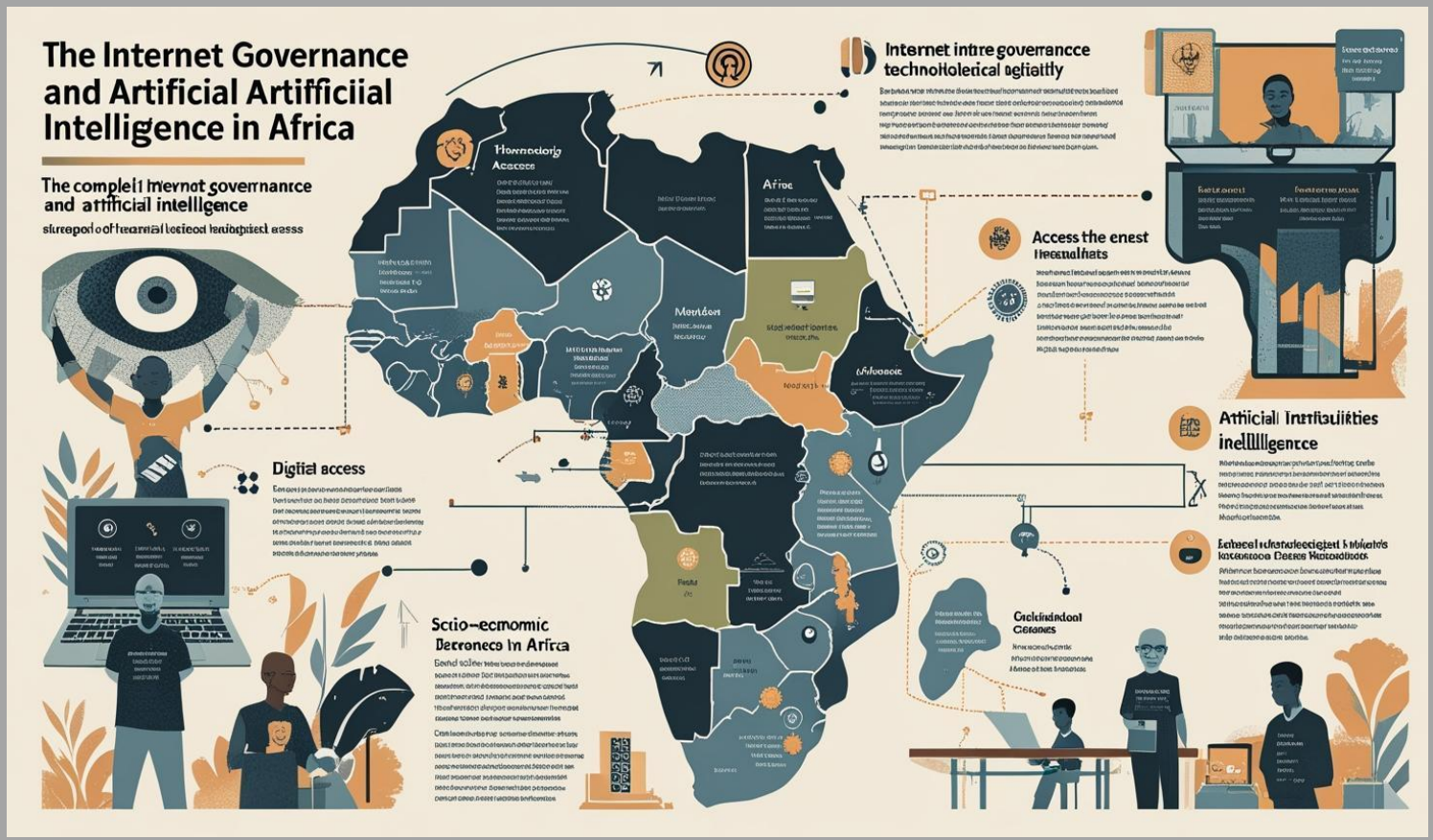
The digital economy in Central Africa is still in its infancy, but with strong potential, digital financial services, particularly mobile money, are the main drivers of this growth. Mobile money solutions are being adopted rapidly, enabling a large part of the unbanked population to carry out transactions, which is stimulating financial inclusion and economic

activity. Many governments in the region, such as in the DRC, are investing in the digitization of public services with the aim of improving effectiveness, transparency and reducing corruption. The tech start-up ecosystem, although less developed than in other African regions, is beginning to emerge, particularly in Cameroon, where young companies are creating solutions for health (e-health), education and finance. Sovereignty is becoming increasingly relevant, with countries initiating digital identification and data localisation projects, raising challenges related to the collection, storage and processing of sensitive data.

7. Regional Initiatives

Regional organisations such as the Central Africa Economic and Monetary Community (CEMAC) and the Economic Community of Central African States (ECCAS) are working to promote regional integration and digital development. CEEAC explicitly recognizes improving access to ICT as a major challenge for the region, highlighting low levels of internet and mobile phone access compared to the continental average. These organisations aim to improve access to ICT to foster a dynamic and competitive private sector.

Access to the internet and digital technologies is increasingly recognized as a fundamental right and an essential catalyst for socio-economic, educational, health and civic participation development. However, in Central Africa countries, many communities, particularly rural, low-income, women and ethnic minorities, face significant barriers to accessing these resources. These barriers can include high costs of digital devices and internet access, lack of infrastructure, low digital literacy and inadequate or ineffective internet governance policies.



CHAPTER IV

METHODOLOGICAL APPROACH

1. Population and study sample

1.1. Population

Our population consists of all citizens living in cities and rural areas of certain countries in Central Africa during the year 2025, with a density of 5.4 million square kilometers and a population of over 148 million.

1.2. Sample

Our sample is random and consists of 1,600 subjects who agreed to respond to our questionnaire after we distributed 2,000 copies of it.

2. Distribution of the sample by country

2.1. The CNONGD national platform in the DRC: 550

· 100 in the city of Kinshasa

· 75 in the province of Maindombe

· 75 in Kwilu Province (Kikwit)

· 75 in Kongo Central Province

· 75 in Kasai Province

· 75 in South Ubangi Province

· 75 in Maniema Province (Kindu)

2.2. The CCOD National Platform in Congo-Brazzaville: 350

· 100 in the city of Brazzaville and the Plateaux and Cuvette departments

· 100 in the city of Pointe-Noire and the Kouilou department

· 75 in Pool Province (Kinkala)

· 75 in the Bouenza and Lékoumou departments (Madingou and Sibiti)

2.3. The ROPAGA National Platform in Gabon: 350

· 100 in the city of Libreville

· 100 in the city of Franceville

· 50 in the province of Haut Ogooué (Franceville),

- 50 in the province of Moyen Ogooué (Lambaréné)

- 50 in the province of Ngounié (Mouila)

2.4. The COPAD National Platform in Cameroon: 350

· 100 in the city of Yaoundé

· 100 in the city of Douala

· 50 in the province of Adamaoua (Ngaoudéré)

- 50 in the East Province (Bertoua)

- 50 in North-West Province (Bamenda)

3. Sample characteristics

Table 1: Distribution of respondents by age

Age	Frequency	%
15	535	33.43
25	452	28.25
35–44	401	25.06
45 – more	212	13.25
Total	1,600	100

In light of this table, we note that the vast majority of our survey subjects are in the 15-24 age group, numbering 535 (33.43%), 452 subjects (28.25%) are in the 25 to 34 age group, 401 subjects (25.06%) are in the 34 to 44 age group, and finally, of the 1,600 subjects surveyed, 212 (13.25%) are in the 45 and over age group and constitute the oldest category in our study sample.

Table 2: Breakdown of respondents by gender

Gender	Frequency	%
Male	580	36.25
Female	1,020	63.75
Total	1,600	100

The data in this table indicate that 1,020 of the 1,600 subjects surveyed (63.75%), constituting the majority of our sample, are female, and 580 subjects (36.25%), representing the minority, are male. This finding can be explained by the fact that most men did not want to receive the questionnaire, and even among those who agreed to take it, many did not return their protocols or copies of the questionnaires they received.

Table 3: Distribution of subjects according to their level of education

Level of education	Frequency	%
Primary	248	15.5
Secondary	459	28.68
Higher	893	55.81
Total	1,600	100

The data in this table show that of the 1,600 respondents, 248 (15.5%) are from primary school, 459 subjects (28.68%) have a secondary education, and 893 subjects (55.81%), representing the majority, have a higher education.

Table 4: Breakdown of respondents by profession

Occupation	Frequency	%

Employees	511	31.93
Self-employed	347	21.68
Unemployed	281	17.56
Students	461	28.81
Total	1,600	100

Looking at this table, we note the following: of the 1,600 subjects surveyed, 511 subjects (or 31.93%) are among the heads of ICT ministries, parliamentarians, postal and telecommunications regulatory authority officials, employees working in telecommunications companies, IT specialists and developers working in technology companies, doctors and nurses working in hospitals in poor and rural areas, employees working in banks and financial agencies in urban and rural areas, and university professors. 347 subjects (21.68%) are authorized sellers of digital goods, farmers from rural communities, and members of CSOs working in the field of internet governance and AI; 281 subjects (17.56%) are unemployed; and finally, 461 of our subjects (28.81%) are students in applied science faculties at universities in urban and rural areas.

Table 5: Breakdown of respondents by area of residence

Area of residence	Frequency	%
Urban	700	43.75
Rural	900	56.25
Total	1,600	100

The results in this table show that of the 1,600 respondents, 700 (43.75%) live in urban areas and 900 (56.25%) live in rural areas. Therefore, the majority of our sample consists of rural residents.

Distribution of respondents according to level of access to ICT

Table 6: Distribution of respondents according to frequency of use

Frequency of use	Frequency	%
Every day	210	13.12
Often	549	34.31
Not often	576	36
Not at all	265	16.56
Total	1,600	100

In light of this table, we note that 210 (or 13.12%) are connected to the internet every day and constitute the category of institution managers and experts in our study sample. 549 subjects (34.31%) are often connected to the internet, 576 of our respondents (36%) are not often connected to the internet and finally, out of the 1,600 subjects surveyed, 265 subjects (16.12%) are not connected to the internet at all.

Table 7: Breakdown of respondents by type of digital device

Type of device	Frequency	%
Telephone	920	57.5
Computer	502	31.37
Tablet	178	11.12
Total	1,600	100

In light of the data in this table, 920 of the 1,600 subjects surveyed (57.5%), constituting the vast majority of our sample, use smartphones to connect to the internet. 502 subjects (31.37%) use computers to connect to the internet, and 178 subjects (11.12%), representing the minority, connect to the internet via tablets. This finding can be explained by the fact that Africa is predominantly mobile first, using low bandwidth and also for energy management due to electrical instability.

Table 8: Breakdown of respondents by income

Income	Frequencies	%
High	210	13.12
Medium	504	31.5
Low	886	55.37
Total	1,600	100

The data in this table indicate that 210 subjects out of the 1,600 surveyed (i.e. 13.12%) in our sample have a high income, 504 subjects (31.5%) have an average income, and 886 subjects (55.37%), representing the majority of our sample, have a low income. This can be explained by the fact that most of our respondents are from poor populations, marginalized and vulnerable communities living in underserved rural areas.

4. Data collection methods and techniques

The choice of working methods depends, on the one hand, on the nature of the subject and, on the other hand, on the objectives pursued. To collect the data necessary to verify our hypotheses, we used a questionnaire survey method, which we supplemented with interviews and documentary research.

4.1. Questionnaire

4.1.1. Questionnaire design

We developed a questionnaire comprising two types of questions: closed questions and open questions.

4.1.2. Pre-survey

All questionnaires must be tested before being administered; this shows the importance of the pre-survey in the development of the questionnaire. Therefore, before finalizing the questionnaire itself, we conducted a pre-survey. This was carried out with 50 subjects, all in

the city of Kinshasa in the DRC. The aim was to test the suitability of the questionnaire for the objectives pursued and to assess the effectiveness of the proposed questions.

4.2. Administration of the questionnaire

To administer our questionnaire, we tackled our survey subjects during their free time, taking into account their availability. After explaining the reason for our visit, we gave each of them a copy of our questionnaire, which they were asked to complete individually, either on the spot, at home or electronically (via email, WhatsApp, Messenger, etc.) and return to us afterwards. This was a very time-consuming operation.

4.3. Interview technique

We used the interview technique developed by BRUNO and REUCHLIN to obtain additional information to supplement that obtained from the questionnaire.

4.4. Data analysis

The protocols were analyzed item by item, noting the respective frequencies of the subjects' responses. These frequencies were converted into percentages to facilitate the analysis and interpretation of the data obtained. This applies to closed-ended questions. For open-ended questions, we used content analysis to identify the most frequent responses, whose frequencies we converted into percentages for analysis and interpretation purposes.

5. Data processing technique

To analyze and interpret the data we obtained, we used statistical techniques, namely: percentages and the Chi-square X^2 independence test.

5. Percentage technique

The percentage technique was used in particular in the overall processing of the data obtained. The formula is as follows: **= F x 100 / N**

- F: Denotes the frequency of occurrence of a response
- N: Represents the sample size
- %: This is the symbol for percentage
- 100: is a constant number.

6. Chi-square X^2independence test technique

Using this technique, we analyzed existing inequalities related to age, gender, level of education, occupation, place of residence (urban or rural) and income level to determine whether they were linked to the level of access to and perception of AI in Africa. In other words, we examined and verified whether the responses of our respondents should vary

significantly according to the variables selected in our study. As a reminder, we selected seven (7) variables, namely: age, gender, level of education, occupation, place of residence (urban or rural), level of access to digital technologies (frequency of internet use, type of device used, etc.) and income.

To test these differences, we used the Chi-square X2 test of independence and Cramer's V to measure the strength of this association. We present and explain the formula for this test, which is as follows:

Theoretical count = (Total for the row) × (Total for the column) / Grand total

$X^2 = (O–E)^2 / \sum E$

To interpret the calculated value of this test, we insert it into the X^2 table at a given degree of freedom and a given significance threshold to find the tabular value, which we then compare to the result of "E" to determine whether or not it is significant. To determine whether the calculated "E" is significant, its value must be greater than that in the table; otherwise, it is not significant.

Cramer's V formula is as follows:

$V = n \times \min (k-1, r-1)\ \chi 2$

Where:

- $\chi 2$ is the calculated chi-square value.
- n is the total number of observations (the size of our sample).
- k is the number of columns in the contingency table.
- r is the number of rows in the contingency table.

8. Difficulties encountered

No human endeavor or research project can be carried out without encountering difficulties. In this case, the main difficulty we encountered was the initial difficulty we faced in tackling our survey subjects, who suspected us of being spies, in receiving responses, given the time frame, the number of respondents, the geographical extent and the difficulty of access. After explaining the survey to the 2,000 subjects who received copies of the questionnaire, only 1,600 returned their completed forms, while the other 400 lost them, neglected them or simply refused to cooperate with us.

CHAPTER V

PRESENTATION, ANALYSIS AND INTERPRETATION OF THE DATA OBTAINED

the variables of age, gender, level of education, occupation, place of residence (urban or rural), level of access to digital technologies (frequency of internet use, type of device used, etc.) and income, which we retained.

1. Presentation, analysis and overall interpretation of the data

It is important to note that the majority of our respondents have a digital device (smartphone, tablet, computer) and use the internet, while a minority do not have access to the internet or digital devices, especially those living in rural areas, those from low-income populations, marginalized and vulnerable communities, and internally and externally displaced persons.
Given that an article is a mini-skirt that covers the essentials and also for reasons of volume, we present here a summary of our research findings.

1.1. Presentation, analysis and overall interpretation of the data

Question 1: *Are you familiar with the term "artificial intelligence (AI)"? (Yes/No/Abstention) If so, how would you briefly describe what AI is? (Open-ended question)*

Table 9: Knowledge of artificial intelligence

Responses	Frequency	%
YES	935	58.43
NO	665	41.56
Total	1,600	100

In light of this table, we note that out of our 1,600 respondents, 935 subjects (58.43%) who answered positively to this question have some knowledge of the term Artificial Intelligence, and 665 subjects (41.56%) who answered negatively have no knowledge of the term. It can be deduced that the majority of our respondents believe that they are familiar with and have already used AI systems.

Table 10: Justification of the 935 subjects who answered YES

Justification	Frequency	%
Machine learning technology, messaging, GPT chatbot	910	97.32
Technology that controls all human private data	805	86.09
Technology that destroys jobs and replaces humans with machines	743	79.46
System that simulates human cognitive abilities in learning, problem solving, perception, natural language understanding and decision making	690	73.79
Total	935	100

The data in this table shows us that of the 935 subjects who said they were familiar with and had already used AI systems:

- 910 subjects (97.32%) justified their yes by stating that they use AI every day in their work and research;
- 805 subjects (86.09%) believe they have heard about this technology that controls all human data and privacy and allows Westerners to colonize us completely;
- 743 subjects (79.46%) explained their response by stating that this technology is destroying the jobs they worked hard to obtain and replacing humans with machines;
- Finally, 690 subjects (73.79%) argue that AI models are computer systems that simulate human cognitive abilities in machine learning, problem solving, perception, understanding human language and decision making.

Table 11: Justification given by 665 respondents who answered NO to this question

Justification	Frequency	%
They do not use digital tools	428	64.36
Lack of internet connection and access to information	602	90.52
They lack knowledge of technology	597	85.77
Total	665	100

Looking at this table, we can see that of the 665 subjects who answered NO:

- 428 subjects (64.36%) justified their response by stating that they did not have the necessary means to obtain and use digital tools;
- 602 subjects (90.52%) said they lacked the necessary information, had no connection, and had no mobile network coverage in their village;
- Finally, 597 respondents (85.77%) explained their answers by saying that they lacked knowledge about current technologies.

Question 2: *In your opinion, in which areas could AI have the greatest positive impact in your country, city or village? (Multiple choices: Health, Education, Agriculture, to fund, Governance, Other - Please specify)*

Table 12: Areas where AI could have the greatest positive impact

Responses	Frequency	%
Health	1,255	78.43
Education	1150	71.87
Agriculture	1147	71.68
Finance	852	53.25
Governance	1,240	77.5
Other	543	33.93
Total	1,600	100

This table shows that of the 1,600 subjects surveyed:

- 1,255 subjects (78.43%) responded that the health sector would have the greatest impact in resolving issues related to skills, shortages of doctors, medical facilities, etc., especially in very remote rural areas;
- 1,150 respondents (71.87%) answered that education would be more effective in generating and organizing interactive educational content, virtual simulations and multimedia resources to make learning more engaging;
- 1,147 respondents (71.68%) answered agriculture in order to increase productivity by analyzing data to provide personalized recommendations to farmers on irrigation, fertilization, pest control and optimal planting and harvesting dates;
- 852 respondents (53.25%) mentioned finance to detect fraud, reduce the financial divide, provide affordable access and inclusive models, and support innovation to catalyze investment growth;
- 1,240 respondents (77.5%) discussed governance to improve administrative effectiveness, optimize public resource management, detect corruption, and facilitate service delivery to citizens;
- Finally, 543 respondents (33.93%) mentioned other areas such as the achievement of Sustainable Development Goals (SDGs), citizen participation in reporting incidents (violence, electoral irregularities), transparency and access to information to make information on budgets, public expenditure and other statistics accessible, and the fight against corruption. It appears that the majority of respondents mentioned health and governance.

Question 3: *To what extent do you believe that AI has the potential to improve the lives of the inhabitants of your country, city and village in general?*

The potential of AI to improve lives

Table 13: Responses from subjects who are convinced of the potential of AI

Responses	Frequency	%
Reducing existing disparities and promoting economic inclusion	1015	63.43
Accelerating the development of access to essential services	1210	75.62
Strengthening resilience to the challenges facing our countries	1408	88
Amplifying adapted innovation and job creation	1505	94.06

Transparent governance and public services	996	62.25
Total	1600	100

The data in this table shows that, of the 1,600 respondents in our survey:

- 1,015 subjects (44.68%) justify their opinion by the fact that AI can reduce disparities and promote economic inclusion by helping us to bridge gaps and provide health, education and financial services to remote or underserved populations;
- 1,210 respondents (75.62%) made the statement that AI can accelerate the achievement of the SDGs and the development of access to essential services by stimulating productivity and growth in key sectors such as agriculture, finance, health, governance, etc.;
- 1,408 respondents (88%) say that AI can strengthen our resilience in the face of various challenges by providing powerful tools to anticipate and manage our challenges, help predict extreme weather events, track the spread of disease, and even optimize natural resource and energy management;
- 1,505 respondents (94.06%) believe that AI can be a driver of innovation, promoting the emergence of new businesses and the creation of skilled jobs, and the development of local AI ecosystems with context-specific solutions.
- Finally, 996 respondents (62.25%) say that AI can make governments more effective and transparent by streamlining administrative processes, helping to detect fraud, and improving service delivery to citizens.

Table 14: Reasons given by respondents who do not support this idea

Reasons	F	%
Widening the digital divide, a new form of colonisation, abuse of power,	1359	84.93
Job losses, replacement of humans by machines	1002	62.62
Used for surveillance rather than empowering populations, suppression of freedom of expression	1280	80
Exclusion of the poor, women and rural populations from the economic benefits of digital technology	1354	84.62
Total	1600	100

Looking at this table, we note the following:

- 1,359 respondents (84.93%) believe that AI will further widen the existing digital divide, facilitate the integration of a new form of colonization, and encourage the concentration and abuse of power.
- 1,002 respondents (62.62%) are convinced that AI causes job losses because it replaces humans with machines;
- 1,280 respondents (80%) explain that AI is used for surveillance rather than empowering populations, amplifying the repression of freedom of expression and human rights;
- Finally, 1,354 respondents (84.62%) argue that poor people, women, young people, marginalized and vulnerable communities, and rural dwellers are excluded from the economic benefits offered by digital transformation.

This allows us to say that, despite the diverse opinions, for AI to truly improve the lives of Africans, it is crucial to address important challenges such as the lack of digital infrastructure, limited access to electricity, the need to develop local AI skills, and the establishment of robust ethical and regulatory frameworks to ensure that AI is used in a responsible and inclusive manner.

Question 4: *Do you think AI can contribute to the economic development of your country, city or village? (Yes/No/Don't know) If so, in what main ways? (Open-ended question)*

Table 15: Contribution of AI to economic development

Responses	Frequency	%
Yes	984	61.5
No	810	50.62
Abstentions	106	6.62
Total	1,600	100

When we look at this table, we see that of the 1,600 respondents, 984 subjects (61.5%), who constitute the majority of our sample, affirm that AI could contribute to the economic development of their country, city or village, 810 subjects (50.62%) think the opposite, and 106 subjects (6.62%) abstained.

Table 16: Justifications given by 984 respondents who answered positively

Reasons	F	%
Increased productivity and effectiveness in high-impact sectors	965	98.06
Development of innovation and creation of new industries	804	81.70
Creation of a local technology ecosystem	912	92.68
Infrastructure effectiveness, funding and banking inclusion	830	84.34
Total	984	100

The results in this table show that of the 984 respondents who answered yes to this question, the following justifications were given:

- 965 subjects (98.06%) believe that AI will increase productivity and effectiveness in high-impact sectors such as precision agriculture to optimize the use of land, water and inputs, leading to higher yields and improved food security; public health for faster and more accurate diagnoses, better epidemic management and optimization of drug supply chains for a healthier and therefore more productive population; financial services to streamline banking operations, reduce fraud and enable the financial inclusion of millions of people who do not have access to traditional banking services, thereby stimulating investment and consumption, and resource management to optimize energy, water and infrastructure management, reducing costs and improving resilience to climate challenges.
- 804 respondents (81.70%) believe that AI will drive innovation and create new industries through the emergence of locally developed technology start-ups to meet

specific needs, "Made in Africa" solutions to problems unique to the continent, digital transformation in operations, and existing companies modernizing and becoming more competitive on a larger scale.

- 912 respondents (92.68%) believe in the creation of a local technology ecosystem and, finally,
- 830 respondents (84.34%) believe that AI will enhance the effectiveness of infrastructure, finance, and enable banking inclusion.

Table 17: Justifications given by 810 respondents who answered negatively

Reasons	F	%
Existing digital inequalities, lack of control over data and critical digital infrastructure	674	83.2
Election manipulation, control over democracy, repression of freedom of expression, surveillance and control of privacy	801	98.88
Increased economic inequality, concentration of power in the hands of a minority of actors, income and wealth inequality	798	98.51
Stifling competition, innovation, exclusion of vulnerable populations, algorithmic bias, etc.	756	93.33
Technological, socio-economic, political and cultural challenges	805	99.38
Limited access to education and knowledge	625	77.16
Total	810	100

The data in this table shows that of the 810 respondents who answered this question negatively:

- 674 subjects (83.20%) believe that AI only contributes to amplifying existing digital inequalities and control over critical data and digital infrastructure, rather than making an effective contribution to the development of our countries, cities and villages;
- 801 respondents (98.88%) justify their opinion by saying that AI only amplifies election manipulation, control of democracy, repression of freedom of expression, surveillance and control of privacy;
- 798 respondents (98.51%) believe that it increases economic inequality, concentrates power in the hands of a minority of actors, and exacerbates income and wealth inequality, rather than making contributions to the development of our countries;
- 756 respondents (93.33%) say that AI stifles competition and innovation, enables the exclusion of vulnerable and marginalized populations, amplifies algorithmic biases, etc.;
- 805 respondents (99.38%) argue that AI brings technological, socio-economic, political and cultural challenges, rather than the development we expect in our countries and villages;
- Finally, 625 respondents (77.16%) believe that AI limits access to education and knowledge.

Justification from 106 respondents who abstained

Here, we lack precise explanations for their abstention, perhaps due to lack of time, understanding of the issue, consideration of our work, or loss of time.

Question 5: *Do you have regular and reliable access to the internet and AI technologies? (Yes/No/Don't know). If not, what are the main obstacles you encounter? (Multiple choice: High cost, Lack of infrastructure, Lack of electricity, Lack of skills)*

Table 18: Having regular and reliable access to the internet and AI technologies

Responses	Frequency	%
Yes	346	21.62
No	1,474	92.12
Abstention	380	23.75
Total	1,600	100

In light of this table, the following conclusions can be drawn: of the 1,600 subjects surveyed, 346 subjects (21.62%) admit that they have regular and reliable internet access, 1,474 subjects (92.12%), who constitute the vast majority of our respondents, say that they have access to the internet but that it is unstable, irregular, very weak and sometimes unavailable for an indefinite period of time, and 380 subjects (23.75%) abstained. We can therefore conclude that the majority do not have regular and reliable internet access.

Table 19: Justifications given by 346 respondents who answered positively

Reasons	Frequency	%
Wireless connection (Wi-Fi)	204	58.95
Broadband internet subscription (fibre optic)	130	37.57
Public access point, public Wi-Fi	340	98.26
Purchase of internet packages	338	97.68
Total	346	100

Looking at the data in this table, we see that of the 346 respondents with regular and reliable access to the internet: 204 subjects (58.95%) make the statement that they use a wireless connection, Wi-Fi, 130 subjects (37.57%) say they have a broadband subscription (fibre optic); 340 respondents (98.26%) connect via public access points and public Wi-Fi; and finally, 338 respondents (97.68%), who make up the vast majority of those with regular access, purchase mobile data packages.

Table 20: Justification given by 1,474 respondents who answered "no"

Reasons	Frequency	%
High cost of internet subscription	1,043	70.75
Income too low	1457	98.84
Lack of electricity	1040	70.55
Lack of time and digital skills	1003	68.04
Lack of digital infrastructure, connectivity, networks	1256	85.21
High cost of devices (smartphones, computers, etc.)	1370	92.94
Total	1,474	100

Looking at the data in this table, we see that of the 1,474 respondents who do not have regular and reliable access to the internet:

- 1,043 respondents (70.75%) believe that the cost of internet subscriptions is too high and does not allow for continuity;
- Meanwhile, 1,457 respondents (98.84%), representing the vast majority, cite low income and a lack of means to afford a monthly internet subscription as their reason;
- 1,040 respondents (70.55%) cite a lack of electricity and digital literacy.

- 1,003 respondents (68.04%) cited a lack of digital tools and the time needed to connect.
- 1,256 subjects (85.21%) cited a severe lack of digital infrastructure, difficult or rare connectivity, and the installation of mobile networks in their areas.
- Finally, 1,370 subjects (92.94%) cited the high cost of digital devices such as smartphones, computers, tablets and others. This leads us to understand that low-income levels are a real barrier to technological inclusion.

Reasons given by 380 respondents who abstained

Here, the 380 respondents (23.75%) who abstained do not use digital tools, so they do not need internet access.

Question 6: *Based on your observations, what are the main differences in access to and use of digital technologies among different populations in Africa (e.g., urban/rural, men/women, young/old, income levels)? (Open-ended question)*

Table 21: Differences in access and use among populations

Disparities in urban and rural areas

Urban	Rural	F	%
Compatible and advanced digital devices (smartphone, computer, tablet)	Basic digital tools for communication and text messaging	**1009**	**63.06**
More developed network infrastructure 3G/4G, fibre optics	Lack of network infrastructure	**1477**	**92.31**
More access to internet cafés, Wi-Fi hotspots, public access points.	High deployment costs and total lack of internet access	**1291**	**80.68**
Stable electricity supply	Limited access and lack of electricity in most areas.	**1528**	**95.5**
Regular and reliable internet access in offices, universities, residences, public places	Rare, expensive and unreliable internet access.	**1498**	**93.62**
More skills and training opportunities	Less digital skills and no training opportunities	**1305**	**91.56**
More opportunities, access to information, training, education	Lack of opportunities, more basic use, limited to voice calls and text messages.	**1501**	**93.81**
Presence of infrastructure	Lack of basic infrastructure	**1075**	**67.18**
Total		**1600**	**100**

The data in this table shows the following: of the 1,600 survey subjects:

- 1,009 subjects (63.06%) gave the following reasons: in urban areas, there are compatible, advanced digital devices (smartphones, computers, tablets), while in rural areas, there are basic digital devices used for communication and text messaging;
- 1,477 subjects (92.31%) explained the problem of network infrastructure, which is more developed (3G/4G, fibre optics) in urban areas than in rural areas, where there is a severe lack of network infrastructure;
- 1,291 respondents (80.68%) mention the presence of internet cafés, Wi-Fi hotspots and public access points in urban areas, whereas there is a total lack of internet access in rural areas due to the high cost of deployment.
- 1,528 respondents (95.5%), who constitute the vast majority of those surveyed on this question, mention the problem of electricity, which is more stable in urban areas than in rural areas, where access is limited and there is a lack of electricity;

- 1,498 respondents (93.62%) justified their response by the fact that internet access remains regular and reliable in offices, universities, residences and public places in urban areas, whereas in rural areas, internet access remains very rare, expensive and unreliable, or even non-existent in most cases.
- 1,305 respondents (91.56%) tackled the relevant issue of technological skills and training opportunities, which are more prevalent in urban areas than in rural areas, where there are fewer digital skills and a lack of training opportunities;
- 1,501 respondents (93.81%) mention the opportunities for access to information, training and education that are available in urban areas, compared to rural areas where there is a lack of opportunities and a more basic use of digital tools, limited to voice communications and text messaging.
- Finally, 1,075 respondents (67.18%) mention the presence of infrastructure, which is more developed in urban areas than in rural areas, where there is a significant lack of basic infrastructure. Based on these results, we can conclude that in rural areas, the use of the internet for more advanced purposes such as online education, banking services and e-commerce is less common due to a lack of digital skills and basic infrastructure.

Table 22: Disparities between men and women

Men	Women	F	%
Greater access to technology	Less access to technology	**975**	**60.93**
More access to computers, smartphones, tablets	Less access to devices for socio-cultural reasons	**890**	**55.62**
Access to the internet for professional, training, research, study purposes, etc.	Rare access to the internet, often for entertainment, social media, and dating platforms	**1489**	**93.06**
More digital skills, training, education	Less competence, training, education... fertile ground for harassment and all forms of violence	**1320**	**82.5**
More opportunities, access to information	Fewer opportunities, insecure access to information, vulnerability to misinformation and online threats	**1034**	**64.62**
Broader vision Research, fulfilment, development and intellectual and socio-economic progress	Vision in entertainment, fashion, cosmetics, dating	**1192**	**74.5**
More time spent accessing the internet and technologies	Less access for socio-cultural reasons, household chores	**1513**	**94.56**
Total		**1600**	**100**

The data in this table shows us the following: out of the 1,600 subjects in our survey:

- 975 subjects (60.93%) mention the fact that men have greater access to technology than women;
- 890 respondents (55.62%) justified this by saying that men have greater access to computers, smartphones and tablets than women, who have less access to these devices for socio-cultural reasons;
- 1,489 respondents (93.06%) mention that men have greater access to the internet for professional reasons, training, research, studies, etc. than women, who are rarely

connected to the internet and, when they are connected , it is for entertainment, dating platforms, or consuming raw information on social media;

- 1,320 respondents (82.5%) explain that men have greater digital skills because they train, educate themselves and conduct research through online learning platforms and other means, whereas women have fewer skills, training and education and prefer entertainment, publications and dating on social media platforms, which are fertile ground for harassment and all forms of violence;
- 1,034 respondents (64.62%) argue that men have more opportunities and access to information and are more tech-savvy than women, who have fewer opportunities and insecure access to information, exposing them to misinformation and online threats.
- 1,192 respondents (74.5%) mention that men have more specific goals and a broader vision of the internet for their personal fulfilment, development and intellectual and socio-economic progress than women, who often have somewhat misguided goals of entertainment, seeking Western lifestyles, cosmetics and international dating platforms;
- Finally, 1,513 respondents (94.56%), representing the vast majority of those surveyed on this question, tackle the issue of men having more time to access the internet and technology due to their social position than women, who have less access to the internet and technology due to socio-cultural reasons and household chores.



Table 23: Disparities between young and old

Young people	*Older*	F	%
Greater access to technology	Less access to technology	**983**	**61.43**
More access to computers, smartphones, tablets	Use of devices very often for communication purposes	**765**	**47.81**
Very frequent use of the internet for entertainment, social media, dating sites, etc., and only occasionally for relevant research, resulting in vulnerability to cyberattacks, misinformation and all forms of online violence	Internet access for professional and communication purposes	**1568**	**98**
More enthusiasm, digital skills, training, education	Less competence, training, education... fertile ground for harassment and all forms of violence	**1452**	**90.75**
More opportunities, less importance of access to relevant information	Fewer opportunities, no need for access to information,	**1402**	**87.62**
More time to access the internet and technology	Less access for reasons of responsibility, health, competence	**1389**	**86.81**
Total		**1600**	**100**

NB: For this table, 80% of the data used was collected from children (aged 15 to 24) living in urban areas. However, those living in rural areas do not use digital tools very often, hence their lack of digital skills.

The data in this table tells us the following:

- 983 subjects (61.43%) mention that young people have greater access to technology than older people, who have less access to technology;
- 765 subjects (47.81%) mention that young people have greater access to computers, smartphones, tablets and other digital tools, very often for entertainment purposes, than older people, who use these devices very often for communication purposes (calls, meetings, conferences, etc.);
- 1,568 subjects (98%) tackle the fact that young people connect to the internet very often for entertainment, social networking, dating sites, which makes them vulnerable to cyberattacks, misinformation and all forms of online violence, and rarely for relevant research, whereas older people connect to the internet for professional, communication and other reasons;
- 1,452 subjects (90.75%) justify this by the fact that young people have more enthusiasm, digital skills, training and digital education than older people, who have fewer skills, training and digital education, and are therefore fertile ground for harassment and all forms of violence;
- 1,402 respondents (87.62%) explained that young people have more digital opportunities but give less agreement to access to relevant information than older people, who have fewer digital opportunities but give greater agreement to access to information;
- Finally, 1,389 subjects (86.81%) mention that young people give more access time to the internet and technologies than older people for reasons of responsibility, health, competence and others.



Table 24: Disparities according to income level

High income	Low income	F	%
More access to technology	Less access to technology	**1056**	**66**
More access to high-quality, compatible and advanced computers, smartphones and tablets	Use of incompatible devices or lack of tools	**1376**	**86**
Regular (professional, family and everywhere) and reliable (private Wi-Fi, broadband, fibre optic, etc.) internet access	Rare internet access (public access points, etc.), expensive (daily rates, etc.) and unreliable (low bandwidth)	**1450**	**90.62**
More digital skills, training, education	Less skills, training, education fertile ground for harassment and all forms of violence	**1587**	**99.18**
More opportunities, access to information	Fewer opportunities, insecure access to information, vulnerability to misinformation and online threats	**1320**	**82.5**
Use of licensed and secure premium applications	Use of basic, free applications with limited functionality, voice communications and text messaging.	**1498**	**93.62**
Stable electricity with power generators	Unexpected power cuts, total lack of electricity	**1533**	**95.81**
Total		**1600**	**100**

The results in this table tell us the following: of the 1,600 people surveyed:

- 1,056 subjects (66%) stated that high-income or wealthy individuals have greater access to technology than low-income or poor individuals, who have less access to technology and sometimes no access at all;
- 1,376 respondents (86%) mention that wealthy or high-income individuals have greater access to high-quality, compatible and advanced computers, smartphones and tablets than poor or low-income individuals, who use incompatible devices or even lack the digital tools to access technological opportunities in the digital age;
- 1,450 respondents (90.62%) justified this by saying that high-income or wealthy people have regular and reliable internet access (at work, at home and everywhere else) with subscriptions (private Wi-Fi, broadband, fibre optic, etc.). On the other hand, low income or poor individuals have rare access to the internet, often using public access points, which are expensive (daily rates), unreliable, have low bandwidth and very often no internet access.
- 1,587 respondents (99.18%), representing the vast majority of our survey participants, explained that individuals with high income or wealth have greater digital skills, training and education in digital technology than individuals with low income or poverty, who have fewer skills, training and digital education, and that this creates fertile ground for misinformation, harassment and all forms of online violence.
- 1,320 respondents (82.5%) mentioned that high-income or wealthy individuals have more opportunities and access to information than low-income or poor individuals, who have fewer opportunities, insecure access to information, and are vulnerable to disinformation and online threats.
- 1,498 respondents (93.62%) mention that individuals with high income or wealthy individuals use premium, licensed and secure applications, while individuals with low income and poor individuals make do with basic, free applications that are limited in functionality and insecure, such as voice calls and text messages.
- Finally, 1,533 respondents (95.81%) argue that wealthy, high-income individuals have stable access to electricity with generators that can be used as backups in the event of power cuts, whereas poor, low-income individuals suffer from untimely, unexpected power cuts and often a total lack of electricity.

Given the results in this table, we wonder about the fate of marginalized and vulnerable communities such as the Pygmy communities living in the dense equatorial forests of Central

Africa, people living in underserved rural areas, internally displaced persons, refugees who are victims of natural disasters, etc.

Table 25: Disparities between English-speaking and French-speaking countries

English-speaking countries	French-speaking countries	F	%
More than 80% of global investment	Less than 20% of investments	**1578**	**98.62**
More than 80% of skills training	Less than 20% of skills training	**1465**	**91.56**
Over 90% of qualifying training courses and teaching materials (texts, videos, audio, etc.) are in English	Less than 10% of qualifying training courses and teaching materials (texts, videos, audio, etc.) are in French, and the few that are translated are not faithful to the originals	**1534**	**95.87**
More technological and financial support from multinationals (GAFAM)	Abandoned to their sad fate, accused of being shithole countries, corrupt, and having poor governance.	**1378**	**86.12**
More opportunities, access to information, training, education, to fund	Fewer opportunities, access to technology, training, education, to fund, and other resources	**1589**	**99.31**
Total		**1600**	**100**

The data in this table tells us the following about the 1,600 subjects in our survey:

- 1,578 subjects (98.62%) mention the striking disparities in global investment in African countries, with more than 80% of global investment concentrated in English-speaking countries and less than 20% benefiting French- and Portuguese-speaking countries;
- 1,465 respondents (91.56%) cite inequalities in skills training, with more than 85% of skills training concentrated in English-speaking countries and less than 15% of such training benefiting the remaining French- and Portuguese-speaking countries;
- 1,534 subjects (95.87%) explain that more than 90% of skills training and teaching materials (texts, videos, audio files, etc.) are in English and only less than 10% of these skills training courses and teaching materials (texts, videos, audio files, etc.) are in French, and the few materials that are translated do not reflect the original aspects;
- 1,378 respondents (86.12%) mentioned that English-speaking countries receive more technological and financial support from multinational companies (GAFAM), international organisations, while French-speaking countries are left to their sad fate, with excuses invented to further exclude them, such as being shithole countries, countries of conflict, corruption, poor governance, political instability, etc.;
- Finally, 1,589 respondents (99.31%), representing the vast majority of those surveyed, justified this by saying that English-speaking countries benefit from more opportunities, access to information, training, education and funding than French-speaking countries, which have fewer opportunities, less access to technology, training, education, funding and other resources.

The results in this table raise many questions about technological inclusion in countries of Central Africa, which are predominantly French-speaking.

Disparities between marginalized and vulnerable communities

The disparities between different communities living in rural areas and marginalized and vulnerable communities such as the Pygmies (indigenous people) living in the dense forests of Central Africa are too significant, leaving us with the impression that these communities will never be able to benefit from the various opportunities offered by AI in the digital age, when Africa is seeking to seize its historic opportunity. In addition, the countries of our sub-region of Central Africa are victims of natural disasters and endless armed conflicts every year, amplifying the food crisis and poverty and causing massive displacement. As a result, these displaced people are also at risk of not benefiting from the opportunities offered by AI. Despite the various misguided policies put in place by decision-makers, no attempt to empower these communities has ever succeeded.



Question 7: *Do you think that these digital inequalities are a significant problem for the development of your country, town or village? (Yes/No/Don't know)*

Table 26: Digital inequality as a problem for development

Responses	Frequency	%
Yes	1008	63
No	390	24.37
Abstentions	202	12.62
Total	1,600	100

Looking at this table, we see that of the 1,600 respondents, 1,008 subjects (63%) representing the vast majority believe that digital inequalities are a real problem for the development of our countries, while 390 subjects (24.37%) think the opposite and 202 subjects (12.62%) abstained.

Table 27: Justifications given by the 1,008 respondents who answered positively

Reasons	Frequency	%
Exacerbation of existing social and cultural inequalities	987	97.91
Threat to political stability	750	74.40
Restricted access to education and knowledge	865	85.81
Barriers to financial and economic inclusion	543	53.86
Impact on public health and agriculture	876	86.90
Obstacle to governance and citizen participation	798	79.16

Reduced economic competitiveness	651	64.58
Exclusion from global markets	892	88.49
Disinformation, harassment, online threats	1,004	99.60
Total	1008	100

The data in this table show that of the 1,008 respondents who answered Yes to this question:

- 987 subjects (97.91%) justified their answers by citing the exacerbation of existing inequalities among marginalized and vulnerable populations (women, young people, disabled people, refugees, etc.) living in rural areas and deprived of access to information;
- 750 respondents (74.40%) cited online threats, the destabilization of elections, democracy and politics;
- 865 respondents (85.81%) cited the limited access to education and knowledge for millions of citizens, particularly those living in rural areas, who do not have access to online educational resources, skills training or even information that is crucial to their personal and professional development;
- 543 topics (53.86%) are justified by the hindrance to financial and economic inclusion, which prevents a large part of the population from accessing these essential services, thereby hampering their ability to save, invest, receive payments or obtain microcredit to start businesses;
- 876 subjects (86.90%) cite an impact on public health, which prevents poor, marginalized and vulnerable populations living in rural areas from accessing advanced health services, making it more difficult to prevent disease, manage health emergencies and access crucial medical advice;
- 798 subjects (79.16%) cited obstacles to governance and citizen participation that limit citizens' ability to access online government services, learn about public policies or make their voices heard, which weakens our young democracies and accountability;
- 651 respondents (64.58%) mention a reduction in the economic competitiveness of our African countries on the international stage;
- 892 subjects (88.49%) tackle the exclusion of African countries from global markets in the digital economy era; our countries and our continent, where a large part of the population is disconnected or under-connected, will struggle to be competitive on the world stage;
- Finally, 1,004 respondents (99.60%) cited the proliferation of misinformation, harassment, threats, intimidation and all forms of online violence, which today pose a fundamental challenge to maintaining stable and Thriving African societies.

Table 28: Justifications given by 390 respondents who answered 'no'

Justifications	Frequency	%
Compliance with inclusive policies and strict laws	250	64.10
Good governance, transparency and accountability	315	80.76
Awareness among decision-makers and the general public	348	89.23
Investing heavily in basic infrastructure	388	99.48
Fair collaborations and partnerships	298	76.41
Total	390	100

The data in this table shows that of these 390 subjects:

- 250 (64.10%) mention compliance with inclusive policies and strict laws;
- 315 subjects (80.76%) mention good governance, transparency and accountability of decision-makers and all stakeholders;
- 348 subjects (89.23%) argue for awareness among decision-makers and the general public;
- 388 topics (99.48%) refer to massive investment in basic infrastructure;
- Finally, 298 topics (76.41%) explain that equitable collaboration and partnership with advanced countries would be an essential option.

These digital inequalities are a critical determinant of the ability of our countries and the continent to achieve their sustainability goals, reduce poverty and build more inclusive and Thriving societies. Failure to address them means leaving a large part of our population behind and compromising future growth potential.

Reasons for abstentions

Here, the 202 respondents who abstained show pessimism and a kind of disinterest in the political management of their country, town and village. They explain that all evils stem from decision-makers, and that only their will could change everything.

Question 8: *Are you concerned that the development and adoption of AI in Africa will exacerbate existing digital inequalities? (Yes/No/Don't know). If so, why?*

Table 29: Fear that AI will exacerbate existing inequalities

Responses	Frequency	%
Yes	959	59.93
No	538	33.62
Don't know	103	6.43
Total	1,600	100

In light of this table, we see that 959 subjects (59.93%), representing the vast majority of respondents, answered this question positively, 538 subjects (33.62%) believe the opposite, and 103 subjects (6.43%) abstained. This means that a large majority of our respondents fear that existing inequalities will be exacerbated by the deployment and development of AI in their country, town and village.

Table 30: Justifications given by 959 respondents who answered positively

Reasons	F	%
Lack of infrastructure and energy	905	94.36
Increased technological dependency, cost of access	950	99.06
Lack of skills and digital literacy	867	90.4
Algorithmic biases reinforcing discrimination	899	93.74
Concentration of profits in urban/affluent areas	723	75.3
Exclusion of poorly educated or unconnected populations	892	93.01

Total	**959**	**100**

Looking at the data in this table, we see the following: of the 959 subjects who answered Yes to this question:

- 905 subjects (94.36%) justified their answer by providing a statement indicating that the acute lack of infrastructure and energy will exacerbate and aggravate existing inequalities because advanced AI models analyze massive amounts of data and require robust digital infrastructure (high-speed networks, data centers) and stable, affordable access to electricity;
- 950 respondents (99.06%) believe that increased technological dependency and the high cost of internet access will cause inequalities to worsen;
- 867 respondents (90.40%) cite a lack of digital skills and literacy, which allows for the proliferation of misinformation and all forms of online threats;
- 899 respondents (93.74%) believe that algorithmic biases reinforce discrimination, because the data used to train these AI models is mainly sourced from developed countries or specific populations, and these solutions are not relevant; they are biased against the realities of marginalized and vulnerable populations in our countries;
- 723 respondents (75.39%) say that the concentration of benefits in urban and affluent areas exacerbates inequalities because policies are not in place to ensure the widespread and equitable distribution of the advantages of AI, with economic benefits (increased productivity, new skilled jobs) are concentrated in the hands of a digital elite, exacerbating income inequalities and socio-economic disparities;
- Finally, 892 respondents (93.01%) mention the exclusion of poorly educated or unconnected populations as the main cause of exacerbating existing inequalities in our countries, towns and villages.

Table 31: Justifications given by 538 respondents who answered negatively

Reasons	F	%
Investing in universal access (digital and energy infrastructure)	**510**	**94.79**
Massively develop digital skills	**505**	**93.86**
Promote ethical and contextualised AI	**499**	**92.75**
Creating relevant and inclusive content and applications	**520**	**96.65**
Promote partnerships and collaboration	**365**	**67.84**
Total	**538**	**100**

The data in this table reveals that, of the 538 subjects who answered No to this question:

- 510 subjects (94.79%) justified their response by citing the need to strengthen digital and energy infrastructure, i.e. expanding connectivity to tackle (deploying "last mile" infrastructure, promoting competition, shared access models) and ensuring stable access to electricity (investing in renewable energies, incentives for rural electrification);
- 505 respondents (93.86%) mention the massive development of digital skills, such as integrating digital literacy into school curricula, training experts in advanced technologies, and professional retraining programmes;

- 499 topics (92.75%) mention the promotion of ethical and contextualized AI by developing clear regulatory and ethical frameworks, collecting and using diverse local data, and supporting local research and development;
- 520 topics (96.65%) are justified by the creation of relevant and inclusive content and applications, such as localizing content, digital services for the daily needs of populations and available in local languages, including dialects; designing intuitive interfaces, often based on voice or image, for people with low literacy or limited familiarity with technology; designing digital services with cost models adapted to people's incomes;
- And finally, 365 topics (67.84%) mention the idea of promoting partnership and collaboration between governments, telecom operators, technology companies, start-ups and CSOs to co-invest in infrastructure and the development of solutions, promoting collaboration between African countries to share best practices, harmonize regulations and create a larger, more integrated digital market, work with international partners, but ensure that technology and knowledge transfers strengthen local capacities and do not create dependency, actively involve local communities in the design, deployment and assessment of digital solutions to ensure that they meet their real needs and are accepted.

To prevent AI from exacerbating these inequalities, it is imperative that its development and adoption be accompanied by inclusive policies, massive investments in infrastructure and education, and a strong focus on "**AI for the common good**" solutions tailored to local contexts.

Reasons for abstentions

Here, the 103 subjects surveyed (6.43%) who abstained are subjects who did not submit their items and/or who refused to answer the questionnaires for reasons of comprehension or importance given to our research.

Question 9: *What do you consider to be the main risks? (Open question)*

Table 32: Justifications of 1,600 subjects on the main risks of AI

Reasons	F	P
Access and infrastructure divide	1090	68.12
Digital divide, skills, unequal access	1440	90
The high cost of AI deployment and development	873	54.56
Data bias and discrimination	989	61.81
Lack of transparency and accountability	861	53.81
Privacy concerns and increased surveillance	1,257	78.56
Job destruction, unbalanced investment	1026	64.12
Increased technological dependency	1502	93.87
Cyberattacks and vulnerabilities	1005	62.81
Malicious use	987	61.68
Regulatory challenges	1,350	84.37
Total	1,600	100

This table reveals the following: of the 1,600 subjects in our survey:

- 1,090 respondents (68.12%) cited the divide in access to technology and basic infrastructure as a reason for concern, given that AI development is concentrated in areas where infrastructure is already in place. This increases the risk of widening the gap between those who are connected and those who are not, leaving poor, marginalized and vulnerable populations on the sidelines of the benefits of AI. marginalized and vulnerable populations on the fringes of the benefits of AI.
- 1,440 respondents (90%) made the statement that the digital divide, skills gap, unequal access, etc. poses enormous risks because investment in education and training is not keeping pace with the adoption of AI, a small technological elite is monopolizing well-paid AI-related jobs, while the rest of the population, already facing educational challenges, finds itself further marginalized and abandoned;
- 873 respondents (54.56%) cite the high cost of AI deployment and development, which requires grant policies or inclusive economic models, meaning that only actors with significant capital (large companies, governments) will be able to take full advantage of it, creating economic imbalance in our poor countries plagued by poor governance, conflict and corruption;
- 989 respondents (61.81%) cite data bias and discrimination, arguing that the datasets used to train AI models do not represent the diversity of our populations (in terms of languages, cultures, genders, ethnic groups, socio-economic conditions). These algorithms reproduce and amplify existing biases, leading to unfair decisions in credit, employment, medical diagnosis or criminal justice, disproportionately affecting already marginalized and vulnerable groups.
- 861 subjects (53.81%) mention the lack of transparency and accountability because complex AI systems are often difficult to understand. When an algorithm makes an erroneous or discriminatory decision, it is difficult to identify the cause and assign responsibility, making it difficult to challenge or seek redress.
- 1,257 respondents (78.56%) tackled privacy concerns about facial recognition and data surveillance without robust regulatory frameworks, which leads to privacy violations and is often used for intrusive state or commercial surveillance, undermining civil liberties;
- 1,026 topics (64.12%) justify job destruction by the fact that AI automation renders certain repetitive tasks and lower-skilled jobs obsolete in sectors such as agriculture, manufacturing, transport and services;
- 1,502 respondents (93.87%) cite exclusive technological dependency, which hinders our ability to develop our own technological capabilities to adapt to local needs, creating a new form of digital colonial dependency;
- 1,005 subjects (62.81%) mention cyberattacks, data alteration or manipulation vulnerabilities that have serious consequences in critical sectors such as finance, health or infrastructure;

- 987 respondents (61.68%) cite malicious use such as the creation of deepfakes, the automation of cyberattacks or the refinement of surveillance that threatens the security of our nations and our social cohesion;
- Finally, 1,350 subjects (84.37%) mention the challenges of developing appropriate, ethical and inclusive regulatory frameworks that protect citizens while encouraging innovation, because the regulatory vacuum leaves the door open to abuse.

Given the promising path that AI offers for Africa's development, it is imperative that our decision-makers, researchers and all citizens be aware of these risks and work proactively to implement strategies that ensure the development of AI that is inclusive, ethical and equitable for all Africans.

Question 10: *Do you think AI could create new forms of inequality in your country, city or village? (Yes/No/Don't know) If so, what could these new forms of inequality be? (Open question)*

Table 33: Creation of new forms of inequality by AI

Responses	Frequency	%
Yes	1096	68.5
No	410	25.62
Abstention	94	5.87
Total	1,600	100

The data in this table clearly show that *AI could create new forms of inequality in Africa*. Of the 1,600 respondents, 1,096 (68.5%), who constitute the majority of our sample, answered this question positively, while 410 (25.62%) answered negatively. Finally, 94 subjects (5.87%) abstained.

Table 34: Justifications given by the 1,096 subjects who answered 'Yes' to this question

Reasons	F	P
Inequality of technological sovereignty	1054	96.16
Inequality in access to AI-enhanced essential services	1010	92.15
Increased territorial inequalities	876	79.92
Inequality in terms of votes and algorithmic representation, discrimination	1006	91.78
Inequality in access to data and its power	963	87.86
Inequality in skills and employment	991	90.41
Total	1096	100

Looking at this table, we see that all 1,096 respondents who answered positively to the question believe that AI could create new forms of inequality in Africa:

- 1,054 respondents (96.16%) justify this by saying that inequalities in technological sovereignty could lead to inequality in decision-making and control over the technologies that shape a society and its economy, where solutions would not be adapted to local contexts and African interests would not be fully represented;

- 1,010 respondents (92.15%) believe that inequalities in access to essential services enhanced by AI are limited to urban areas, affluent populations or those with good connectivity, which will create a divide in quality of life and opportunities;
- 1,006 respondents (91.78%) tackle the fact that inequalities in voice and algorithmic representation could lead to inequalities in the way individuals are "seen" and treated by automated systems, for example in the allocation of credit, access to justice or even facial recognition, disadvantaging certain populations (women, ethnic minorities, rural populations) and reinforcing discrimination;
- 963 subjects (87.86%) believe that inequalities in access to data and its power concentrated in a few hands (large international technology companies or a few local elites) will create data-based inequality of power and wealth, where some will be able to predict behavior, influence markets and make strategic decisions that others cannot;
- Finally, 991 respondents (90.41%) explain that inequalities in skills and employment could lead to technological unemployment for a large part of the African workforce if it is not trained in the new skills required, creating inequality in employability based on the ability to interact with and develop AI.

To prevent these new forms of inequality from materializing, it is crucial that stakeholders adopt a proactive and inclusive approach to AI development, focusing on strengthening local skills, investing in equitable infrastructure, promoting ethical AI, and creating policies that ensure the benefits of this technology are shared by all.

Table 35: Justifications given by 410 respondents who answered 'No' to this question

Reasons	F	P
Development of strict ethical and regulatory frameworks	409	99.75
Audit and mitigation of algorithmic biases	254	61.95
Human-centered design and inclusion	402	98.04
Universal digital education	347	84.63
Development of specialized AI skills	198	48.29
Anticipation and professional retraining	156	38.04
Inclusive infrastructure deployment	399	97.31
Universal access to energy	376	91.70
Affordability policies	350	85.36
Support for African start-ups and researchers	401	97.80
Development of relevant content and applications	408	99.51

Public-private partnerships - research - civil society	405	98.78
Regional, continental and international cooperation	328	80
Active community engagement	320	78.04
Total	410	100

Looking at this table, we see that of the 410 respondents who answered no to this question:

- 409 subjects (99.75%), representing the vast majority, believe that governments should collaborate with experts (lawyers, technologists, ethicists, sociologists, civil society actors) to create clear laws and guidelines on data protection, algorithm transparency, non-discrimination and AI system accountability;
- 254 subjects (61.95%) believe it is imperative to regularly audit the algorithms and datasets used to detect and correct biases;
- 402 respondents (98.04%) tackle the need to ensure that AI solutions are developed with the active participation of end users, particularly those from marginalized and vulnerable communities;
- 347 respondents (84.63%) explain that digital literacy and basic AI skills (understanding how AI works, its benefits and risks) should be integrated into all levels of education and that continuing education programmes should be developed for adults, particularly in rural areas and for women, using accessible methods and local languages;
- 198 respondents (48.29%) mention the need to invest significantly in higher education and vocational training to create a skilled local workforce in data science, machine learning, engineering and AI ethics;
- 156 respondents (38.04%) mention anticipating jobs that could be transformed or replaced by AI and implementing specific programmes for workers, helping them acquire the skills needed for new jobs generated by the AI economy;
- 399 topics (97.31%) justify the inclusive deployment of affordable and reliable connectivity infrastructure that reaches rural and underserved areas;
- 376 topics (91.70%) explain the development of renewable energy solutions (solar, wind) and microgrids to ensure stable and affordable access to electricity, which is essential for powering digital devices and infrastructure;
- 350 respondents (85.36%) tackle the issue of implementing policies to make grants or incentives available to reduce the cost of smartphones and data plans for low-income populations and to encourage subsidized public access points (cybercafés, digital libraries, etc.);
- 401 topics (97.80%) discuss supporting start-ups and researchers in developing AI solutions that address the continent's specific challenges and use local data;
- 408 topics (99.51%) tackle promoting the creation of AI applications that speak local languages, understand cultural nuances and address the concrete problems of local communities;

- 405 topics (98.78%) justify themselves by encouraging collaborations where governments, businesses (local and international), universities and CSOs work together to define priorities, share resources and develop inclusive AI solutions;
- 328 topics (80%) explain the need to strengthen regional, continental and international cooperation on AI to share best practices, harmonize regulations, pool computing and data infrastructure, and create collective strength;
- Finally, 320 topics (78.04%) argue for ensuring that local communities are not only consumers of AI, but also involved in its design and deployment, guaranteeing that their voices are heard and their needs taken into account.

Considering these results in a concerted manner can not only prevent new forms of AI-related inequality but also transform this technology into a powerful driver of inclusion, equitable development and shared prosperity for all its citizens.

Question 11: *To what extent do you have agreement with the following statement: "AI is likely to benefit mainly those populations in Africa that are already connected and educated." (Strongly disagree - Strongly agree)*

Table 36: Opinion on the benefits of AI for wealthy populations

Responses	Frequency	%
Strong agreement	**1150**	**71.87**
Strongly not in agreement	**450**	**28.12**
Total	**1600**	**100**

Considering this table, we can see that out of the 1,600 respondents, 1,150 (71.87%) strongly agree that AI is likely to benefit mainly those who are already connected and educated, while 450 (28.12%) believe the opposite.

Table 37: Justification given by 1,150 respondents who give their agreement to this thesis

Justifications	F	%
Technical prerequisites favour those who are already connected and Costs	**1007**	**87.56**
Skills and education requirements	**1120**	**97.39**
Educational bias, data and relevance of enhanced solutions	**985**	**85.65**
Geographical concentration, adoption dynamics	**904**	**78.69**
Total	**1150**	**100**

This table shows that of the 1,150 respondents who answered yes to this question:

- 1,007 subjects (87.56%) explained their response by stating that the technological prerequisites and deployment costs require reliable digital infrastructure (high-speed

internet, stable electricity) and suitable devices, which are largely concentrated in urban areas and accessible to populations with a certain level of purchasing power;

- 1,120 respondents (97.39%) cited the need for digital skills and education, and often advanced technical skills. People who already have access to quality education and specific training will be the first to take advantage of the opportunities offered by AI, whether in terms of employment, innovation or access to complex services.
- 985 respondents (85.65%) justify this by the fact that AI solutions are often developed based on data from populations and contexts that are already well studied and digitized, often in developed countries and urban areas;
- Finally, 904 respondents (78.69%) tackle the fact that the adoption of new technologies follows a pattern whereby early adopters are generally the wealthiest and most connected populations, and AI is no exception.

Although AI has the potential to transform Africa in a positive way, it is crucial to acknowledge the inherent risk that it will only serve to reinforce the advantages of populations that are already privileged in terms of digital access and education. A deliberate approach and target policies are essential to ensure a more equitable distribution of its benefits.

Table 38: Justification of the 450 respondents who do not entirely agree

Justifications	F	%
Grants and accessibility policies	243	54
Expansion of infrastructure in rural areas	437	97.11
Development of public access points	234	52
Reliable access to electricity	420	93.33
Basic digital literacy programmes	412	91.55
Adapted training content	396	88
Training local change agents	287	63.77
Teaching method, education through entertainment	431	95.77
Prioritise use cases with high social impact	356	79.11
Develop simple and intuitive user interfaces	321	71.33
Integrate local languages and dialects	423	94
Appropriate financial models	209	46.44
Collection and use of various data	397	88.22
Local ethical and regulatory frameworks	408	90.66
Accessible redress mechanisms	254	56.44
Involving local communities	433	96.22
Support local innovation	442	98.22
Public-private-civil society partnerships	439	97.55
Total	450	100

Looking at this table, we see the following: of the 450 subjects who answered no to this question:

· 243 subjects (54%) explained that grant programmes for digital devices and low-cost data plans should be put in place, specifically for low-income populations and marginalized and vulnerable communities;

· 437 respondents (97.11%) said that priority should be given to rolling out networks (4G, 5G, and even optimized 2G/3G) in remote rural areas and exploring alternative solutions such as locally managed community networks or low-cost satellite technologies in rural areas where terrestrial infrastructure is too expensive;

· 234 respondents (52%) tackle the need to establish and support community digital centers (cybercafés, equipped libraries, etc.) with free or very low-cost internet access and shared devices, forming hubs for access and training;

· 420 respondents (93.33%) justify this by the need for reliable access to electricity through investment in decentralized renewable energy solutions (solar, mini grids) to power communities, schools and health centers, ensuring that digital devices and infrastructure can function;

· 412 respondents (91.55%) mention providing target, practices training on the use of mobile phones and essential digital applications (mobile financial services, health applications, messaging) for less educated populations, using concrete demonstrations and local trainers;

· 396 respondents (88%) mention the need to develop educational materials in formats that are accessible to all, such as short videos, voice messages or text messages in local languages, avoiding overly technical jargon;

· 287 respondents (63.77%) justified this by identifying and training digital champions within communities (village chiefs, religious leaders, dynamic young people) who can then train and support their peers;

· 431 topics (95.77%) explain the use of popular media outlets such as radio, theatre or television series to raise awareness of the benefits of digital technology and AI in a fun and understandable way;

· 356 subjects (79.11%) mention the idea of developing AI solutions that directly address the urgent needs of underserved populations (health, agriculture, education, finance, etc.);

· 321 topics (71.33%) discuss developing lightweight applications that work well on basic devices and with low bandwidth, voice-based interfaces (voice chatbots, multilingual AI assistants), images and icons, reducing dependency on reading and writing;

· 423 topics (94%) explain investing heavily in natural language processing for local languages with fewer resources, so that AI can interact naturally with users in their native languages;

· 209 respondents (46.44%) admitted to designing AI services with economic models that reflect the reality of local incomes, such as micro-payments and grants for educational or health purposes.

· 397 respondents (88.22%) say they ensure that the datasets used to train AI include representative samples of all populations (gender, ethnic groups, income levels, rural/urban locations, etc.) to avoid algorithmic biases that could perpetuate or amplify existing discrimination;

· 408 respondents (90.66%) explain that clear regulations on data protection and AI ethics should be put in place to specifically protect marginalized and vulnerable populations and ensure transparency and accountability in AI decisions;

· 254 respondents (56.44%) mention establishing simple and accessible processes for citizens to challenge automated AI decisions that affect them;

· 433 respondents (96.22%) tackle the idea of involving end users from the design phase of AI solutions and conducting regular consultations to understand their needs, concerns and preferences in order to develop technologies that are truly useful to them;

· 442 topics (98.22%) admit to supporting local innovation by encouraging entrepreneurs and developers, who are better placed to understand local challenges and develop relevant AI solutions for their own communities;

Finally, 439 respondents (97.55%) explain that they are establishing strong collaborations between governments, businesses (local and international), universities and CSOs to pool resources and expertise in the service of inclusion.

By adopting these specific measures, we can ensure that AI does not widen the digital divide but rather becomes a powerful tool for the inclusion and empowerment of the least connected and least educated populations in Africa.

Question 12: *Do you think that biases in the data used to train AI could perpetuate or amplify existing discrimination in our country, city and village? (Yes/No/Don't know)*

Table 39: Amplification or non-amplification of discrimination through bias

Responses	Frequency	%
Yes	997	62.31
No	354	22.12
Abstention	249	15.56
Total	1,600	100

Looking at the data in this table, we see that of the 1,600 respondents, 997 (62.31%) answered the question positively, while 354 (22.12%) answered negatively and 249 (15.56%) abstained. We can therefore conclude that, for the majority of our respondents, the biases present in the data used to train AI could perpetuate or amplify existing discrimination in our countries, cities and villages.

Table 40: Justifications given by 997 respondents who answered Yes to the question

Reasons	F	%
Historically biased data	964	96.69
Lack of data representativeness	756	75.82
Amplification of biases	982	98.49
Lack of transparency and accountability	453	45.43
Algorithmic racism in Silicon Valley	865	86.76
African local languages sacrificed	907	90.97
Total	997	100

Of the 997 subjects who answered Yes to this question:

- 964 subjects (96.69%) explained that our countries have a complex history of structural inequalities and discrimination based on ethnicity, gender, social class, religion or geographical origin, and if AI systems reflect this past discrimination, they risk making decisions that once again penalize already disadvantaged groups;
- 756 respondents (75.82%) cited a lack of sufficiently diverse global or even local data to represent all the nuances of populations in terms of ethnic and linguistic diversity, gender, urban and rural areas, income level, etc.;
- 982 respondents (98.49%) tackle the issue of bias in data, which can turn into marked discrimination once the algorithm is put into production and makes millions of unfair decisions that can reinforce exclusion;
- 453 subjects (45.43%) discuss the lack of transparency and accountability in the African context, where recourse mechanisms and regulatory frameworks for ethical AI are still under development, meaning that those affected by biased decisions may have few means of challenging them;
- 865 subjects (86.76%) explain Silicon Valley's algorithmic racism by the fact that Western datasets dominate AI in Africa, with more than 90% of these models using North American and European data;
- Finally, 907 respondents (90.97%) mention the fact that local African languages are being sacrificed, with more than 98% of African chatbots initially developed in English or French and performing 10 times worse in Swahili, Wolof, Lingala, etc. than in English.

For AI to be a tool for equitable development in our African countries, it is essential to make concerted efforts to collect diverse and representative data, develop equitable algorithms, and establish robust ethical and regulatory frameworks to audit and correct biases. Without this, AI risks becoming a new vector for discrimination, consolidating inequalities rather than reducing them.

Table 41: Justifications given by 354 respondents who answered 'no' to this question

Reasons	Frequency	%
Creation of local and representative datasets	330	93.22
Strengthening ethical and regulatory frameworks	351	99.15
Capacity building and education	315	88.98
Mandatory audits and transparency	248	70.05
Total	354	100

Looking closely at the data in this table, we see the following: of the 354 subjects who answered this question in the negative:

- 330 subjects (93.22%) explained their response by referring to the creation of local and representative datasets on data diversity rather than relying on international datasets, which are often biased, the involvement of the membership of local communities in defining relevant data and labelling to ensure a better fit with reality, regional collaboration to pool resources and create pan-African datasets;
- 351 respondents (99.15%) explained the strengthening of robust laws and regulations governing the use of AI. the creation of national ethics committees composed of technology experts, academics, lawyers and representatives of civil society, with the African Union and regional organisations playing a key role in setting ethical standards and guidelines for AI in order to harmonize approaches across the continent;
- 315 respondents (88.98%) argue for educating developers to integrate AI ethics, detecting and reducing bias, raising awareness among the general public and policy makers about the challenges of AI and its biases, and supporting local research on AI ethics with relevant specifics;
- Finally, 248 respondents (70.05%) explain their response by referring to regular audits to assess the performance of AI systems on marginalized and vulnerable population subgroups, and the transparency of algorithms so that users and regulators can understand the decision-making mechanisms.

We encourage the work done by the AU on developing a pan-African regulatory framework for ethical AI. For AI to be a tool for equitable development in Africa, it is essential to make concerted efforts to collect diverse and representative data, develop fair algorithms, and establish robust ethical and regulatory frameworks to audit and correct biases.

Justification for abstentions

The behavior of our 249 respondents (15.56%) who abstained leaves us somewhat perplexed, and we hope to improve our approach to encourage them to contribute proactively.

Question 13: *Do you believe that AI has the potential to reduce digital inequalities and promote technological inclusion in our country, towns and villages? (Yes/No/Don't know). If so, in what concrete ways do you think? (Open question)*

Table 42: Reduction or non-reduction of inequalities through AI

Responses	Frequency	%
Yes	712	44.5
No	507	31.68
Abstention	381	23.81

Total	1,600	100

In light of this table, we can see that out of our 1,600 respondents, 712 subjects (44.5%) answered positively, compared to 507 subjects (31.68%) who answered negatively and 381 subjects (23.81%) who abstained. From this, we can deduce that Africans believe in the potential of AI to reduce digital inequalities and promote technological inclusion in Africa.

Table 43: Justification of 712 subjects who responded positively

Justifications	F	%
Reducing language barriers, literacy and technological decolonisation	710	99.71
Democratizing access to basic services in remote areas	694	97.47
Facilitating financial inclusion	679	95.36
Optimization of infrastructure and connectivity	701	98.45
Bridging the education gap and local opportunities	698	98.03
Total	712	100

The data in this table shows that of the 712 subjects who answered Yes to the question:

- 710 subjects (99.71%) said that AI will reduce language barriers and literacy through translation and natural language processing to enable illiterate populations or those who speak less common languages to access information and digital services without language barriers, thereby promoting inclusion. the design of voice and conversational interfaces for populations with low literacy levels or who are not comfortable with reading and writing; voice-based interfaces enabled by AI will democratize access to services via simple mobile phones, even without a constant internet connection;
- 694 respondents (97.47%) believe that improving access to essential services in remote areas will reduce the need for travel and bring health services within reach of isolated populations, and will offer individualized support, tailored exercises, and even offline courses via inexpensive devices, compensating for the lack of qualified teachers or textbooks;
- 679 respondents (95.36%) explain that facilitating financial inclusion will open up access to micro-credit, insurance and other financial services for millions of people who were previously excluded from the formal banking system and will guide users through complex financial transactions, answer their questions and offer personalized financial advice via their mobile phones, making banking services more accessible and understandable;
- 701 respondents (98.45%) mention that optimizing infrastructure and connectivity to analyze network usage patterns and topography to optimize the deployment of telecommunications infrastructure, identifying areas where demand is high but access is low, enabling more targeted and cost-effective expansion of connectivity, including in rural areas, and optimizing the management of solar microgrids and battery systems, ensuring a more stable and more effective power supply for digital infrastructure and devices;

- Finally, 698 respondents (98.03%) explained that the development of local skills and opportunities through AI-based learning platforms can make digital and AI skills education more accessible, even in areas without specialized teachers, thus training a new generation of developers and users. By training local talent in AI, our countries can develop AI solutions that are specifically designed for our unique contexts, using local data and addressing local problems, thus ensuring that the technology is relevant and inclusive.

Table 44: Justification of 507 respondents who answered No to this question

Justifications	F	%
Inequalities in technological sovereignty	354	69.82
Inequalities in access to essential services	487	96.05
Inequality in terms of voice and algorithmic representation	395	77.90
Inequalities in access to data	399	78.69
Inequalities in skills and employment	502	99.01
Challenges of appropriate, ethical and inclusive regulatory frameworks	493	97.23
Total	507	100

Looking at this table, we see that of the 507 respondents who answered no to this question, do not believe that AI has the potential to reduce digital inequalities and promote technological inclusion in Africa:

- 354 respondents (69.82%) believe that inequalities in technological sovereignty will create a new form of digital colonial dependency, widening the gap in access to technology and infrastructure;
- 487 respondents (96.05%) believe that inequalities in access to essential services have a direct and significant impact on access to healthcare, information and prevention, medical record management, education, public and administrative services;
- 395 respondents (77.90%) tackle the fact that inequalities in voice and algorithmic representation will reproduce and amplify existing biases, leading to unfair decisions in credit, employment, medical diagnosis or criminal justice, disproportionately affecting already marginalized and vulnerable groups;
- 399 subjects (78.69%) believe that inequalities in access to data could lead to privacy violations in facial recognition and intrusive state or commercial surveillance, undermining civil liberties, and could also concentrate power in the hands of a few, creating data-based inequality of power and wealth;
- 502 respondents (99.01%) explain that inequalities in skills and employment could pose enormous risks to low-income, marginalized and vulnerable populations;
- Finally, 493 respondents (97.23%) mention the fact that AI could amplify abuses due to the lack of appropriate, ethical and inclusive regulatory frameworks to protect citizens while encouraging innovation.

Reasons given by respondents who abstained

Here, 381 of our respondents (23.81%) were unable to give us their opinions on the potential of AI to reduce digital inequalities or promote technological inclusion in their country, town or village, and we do not know the reasons for their abstention.

Question 14: *In which specific areas could AI make the most contributions to technological inclusion in Africa? (Multiple choice: Improving access to information, facilitating access to distance learning, Improving access to health services, facilitating access to financial services, Creating new employment opportunities)*

Table 45: Area of contribution to inclusion

Justifications	Frequency	%
Improving access to information	1,250	78.12
Facilitate access to distance learning	1465	91.56
Improve access to health services	1480	92.5
Facilitate access to financial services	974	60.87
Create new employment opportunities	849	53.06
Total	1,600	100

The data in this table indicates that of the 1,600 respondents:

- 1,250 subjects (78.12%) say that AI systems could transform access to information by overcoming language and skill barriers through advances in natural language processing;
- 1,465 respondents (91.56%) believe that AI is a catalyst for inclusive education that will personalize learning by adapting content and pace to the individual needs of each student;
- 1,480 respondents (92.5%) mention that AI could revolutionize access to healthcare;
- 974 respondents (60.87%) mention that AI is essential for the financial inclusion of unbanked populations by analyzing alternative data (telephone usage history, bill payments) to assess the creditworthiness of individuals without a formal credit history;
- And finally, 849 respondents (53.06%) explain that the development and deployment of AI solutions require engineers, data scientists, and implementation specialists. Furthermore, increased effectiveness and productivity in sectors such as agriculture and services can stimulate economic growth and indirectly generate new jobs in related fields.

Artificial Intelligence has the potential to make significant contributions to technological inclusion in Africa in all areas. It acts as a multiplier, overcoming traditional obstacles (distance, lack of human resources, language barriers) and providing essential services to populations that were previously deprived of them, while creating new economic dynamics.

Question 15: *To what extent do you agree with the following statement: "AI could enable 'leapfrogging' and provide services to underserved populations in your country, city and village." (Strongly disagree - Strongly agree)*

Table 46: Leapfrogging

Responses	Frequencies	%
Yes	987	61.68
No	613	38.31
Total	1,600	100

Looking at this table, we can see that of the 1,600 respondents, 987 (61.68%) answered yes and 613 (38.31%) answered no to this question. The majority therefore answered yes to this question.

Table 47: Justifications given by the 987 subjects who answered Yes to the question

Reasons	Frequency	%
Lack of existing infrastructure	966	97.87
Mobile ubiquity leap	683	69.19
Solution to skilled labour shortages	490	49.64
Large-scale customization	453	45.89
Cost reduction and barrier reduction	586	59.37
Bypassing the stage of over-equipped hospitals	930	94.22
Bypass the shortage of qualified teachers	852	86.32
Total	987	100

Looking at this table, we see that of the 987 respondents who answered this question positively:

- 966 subjects (97.87%) made the statement that AI will be able to offer digital services that do not require heavy infrastructure, or that radically optimize it. For example, instead of building thousands of clinics, AI-based telemedicine will be able to provide remote diagnoses and advice;
- 683 respondents (69.19%) believe that AI can be integrated into simple mobile applications, or via voice and text interfaces, making sophisticated services accessible via a device that is already widely owned, and that it would not be necessary to wait for fibre optic installation in underserved rural areas to begin offering AI-based services;
- 490 respondents (49.64%) say that AI will be able to complement or augment the capabilities of existing staff (doctors, teachers, financial advisers) or even provide basic services where there is no one else available. For example, AI tools could help community health workers diagnose diseases or virtual tutors supplement teaching.

- 453 respondents (45.89%) explain that AI will make it possible to offer highly personalized services to millions of people simultaneously in education (adaptive learning), healthcare (data-driven preventive medicine) or financial services (products tailored to micro-entrepreneurs), where one-size-fits-all approaches are ineffective for diverse and underserved population.
- 586 respondents (59.37%) made the statement that AI has the potential to reduce the cost of providing certain services, making them more affordable for low-income populations and eliminating barriers such as distance, time or bureaucracy;
- 930 respondents (94.22%) argued that AI could solve problems related to skills, shortages of doctors, medical facilities, etc. especially in very remote rural areas, by creating secure, transparent electronic medical records that are accessible to authorized healthcare professionals, in our context where infrastructure is limited, in order to improve continuity of care and reduce medical errors. Example: In Malawi, the "AI Ultrasound" project enables prenatal diagnoses with a simple USB sensor and a smartphone for early detection of 85% of complications.
- Finally, 852 respondents (86.32%) explained that AI platforms could be used to generate and organize interactive educational content, virtual simulations and multimedia resources to make learning more engaging, and to analyze student performance data to identify trends, predict outcomes and help educators make informed decisions. An example is ChatClass in South Africa, which provides personalized tutoring via WhatsApp, reaching 500,000 students in townships and improving math's' results by 40% (UCT 2023 study).

The data in this table provides compelling evidence that AI has immense potential to complement and improve existing services, and even to create new ones. AI can be a catalyst for development if it is used thoughtfully and ethically, involving marginalized and vulnerable local communities in its design and deployment.

Table 48: Justifications given by 613 respondents who answered 'no' to this question

Reasons	Frequency	%
Insufficient infrastructure	532	86.78
Access to data and bias	496	80.91
Cost and accessibility	329	53.67
Technological dependency	550	89.72
Lack of trust and adoption	501	81.72

Total	613	100

In light of this table, we note that of our 613 respondents who answered this question in the negative:

- 532 subjects (86.78%) justified that AI, particularly the most powerful models, requires solid basic infrastructure, such as stable internet connectivity and electricity, services that are particularly lacking or unreliable in our poor African countries;
- 329 respondents (53.67%) said that AI models are trained on huge amounts of data, and this data is not representative in our poor African countries, so AI could produce biased and ineffective, or even dangerous, results;
- 550 respondents (89.72%) mention that AI technologies can be expensive to develop and maintain, and the equipment needed to access them (smartphones, computers, tablets) is not always affordable for all populations, even though it is becoming increasingly widespread.
- Finally, 501 respondents (81.72%) explain that even if AI solutions are available, their adoption by marginalized and vulnerable local communities is not guaranteed, and the lack of education, digital literacy and trust in these technologies can be a major obstacle.

AI is not a miracle solution that can solve all problems without investment in infrastructure, education and governance. The success of AI in our countries will depend on the ability to overcome these practical obstacles and integrate it in a sustainable and inclusive manner into national development strategies.

Question 16: *In your opinion, what are the most important factors to consider to ensure that the development and adoption of AI is inclusive and equitable? (Open-ended question)*

Factors to consider for AI inclusion and equity

Table 49: Justifications from 1,600 respondents

Justifications	F	%
Massive and equitable investment in digital and energy infrastructure	873	54.5
Development of AI skills and education	1465	91.56
Promotion of ethical, human-centered and locally relevant AI	1378	86.12
Policies and incentives for inclusion	1496	93.5
Public awareness and trust	1390	86.87
Total	1600	100

Looking closely at the data in this table, we see the following: of the 1,600 respondents to this question,

- 873 respondents (54.56%) agree that internet access should be expanded (4G, 5G, fibre optics where relevant, satellite solutions for very remote areas) at an affordable cost for all, including rural and peri-urban areas, and develop reliable and sustainable energy solutions (solar, micro-grids) to power digital devices and infrastructure, particularly where the national grid is absent or unstable.

- 1,465 respondents (91.56%) believe that there is a need for widespread training in basic digital literacy (use of smartphones, internet browsing, online safety) for people of all ages. invest in higher education and vocational training in data science, machine learning and AI engineering, and set up continuing education and retraining programmes for workers whose jobs may be affected by automation, so that they can adapt to new labor market demands.
- 1,378 respondents (86.12%) say that robust policies and legislation need to be developed to regulate the use of AI, ensure data protection, algorithm transparency, non-discrimination and accountability, ensure that the data sets used to train AI models are representative of diverse African populations to avoid bias and discrimination, and support African innovators and start-ups to develop AI solutions tailored to the continent's specific challenges and contexts, using local languages and cultures.
- 1,496 respondents (93.5%) explain that policies must be put in place to make devices (smartphones, tablets) and data plans more affordable for low-income populations, governments must be drivers of inclusion by digitizing their services and ensuring that they are accessible via user-friendly, multilingual interfaces designed for less connected populations, and encouraging collaboration between governments, private companies (telecom operators and technology companies), universities and CSOs to co-develop and deploy inclusive AI solutions.
- Finally, 1,390 respondents (86.87%) explain that the public must be informed about the benefits of AI, but also about the risks, in a transparent and understandable manner, and that local communities must be involved in the processes of designing and deploying AI solutions to ensure that they meet their real needs and are accepted.

By integrating these factors into the design and deployment of AI strategies, Africa will be able to maximize the potential of this technology for inclusive and equitable development, ensuring that no one is left behind in this revolution.

Question 17: *To what extent are the following aspects important for ensuring inclusive AI in our country, city or village? (Not at all important - Very important)*

- Investment in digital infrastructure (connectivity, electricity, training, etc.)
- Development of digital skills among the population
- Creation of AI content and applications adapted to local contexts and languages
- Establishment of regulations and ethical frameworks for AI
- Participation of local communities in AI development
- Support for innovation and entrepreneurship in the field of AI
- International collaboration and appropriate knowledge transfer

Table 50: AI safeguards for inclusion

Responses	Frequency	%
Very important	1600	100
Not very important	0	0
Total	1600	100

The data in this table show that of the 1,600 respondents, all subjects (i.e. 100%) have reached agreement that these aspects are very important for ensuring inclusive AI in Africa.

Table 51: Justifications given by 1,600 subjects who consider these aspects important

Justifications	F	%
Investment in digital infrastructure	1350	84.37
Digital skills development	1530	95.62
Creation of tailored AI content and applications	1405	87.81
Implementation of strict regulations and ethical frameworks	1547	96.68
Involvement of local communities in AI development	1150	71.87
Support for innovation and entrepreneurship in the field of AI	1298	81.12
International collaboration and tailored knowledge transfer	1183	73.93
Total	1600	100

This table shows that all 1,600 respondents have reached agreement that these aspects are very important for ensuring inclusive AI in Africa.

- 1,350 respondents (84.37%) say that reliable and affordable connectivity, stable access to electricity, and data infrastructure are the foundations on which any AI initiative must be based. Furthermore, training in this context refers to building human capacity to manage and maintain these infrastructures.
- 1,530 respondents (95.62%) explain that even with the best infrastructure, if people do not have basic digital skills (knowing how to use a smartphone, browse the internet) or more advanced skills (programming, data science for professionals), they will not be able to consume AI-based services in a manner that is effective or participate in its development. This is the key to transforming passive users into active participants and beneficiaries.
- 1,405 respondents (87.81%) argue that inclusive AI must speak to people in their own languages and understand their cultural and socio-economic realities. Applications developed without taking into account local specificities (languages, dialects, cultures, daily challenges) will not be adopted or could even perpetuate biases, which is why adapting AI to local contexts will make it relevant, useful and accessible to all populations.
- 1,547 respondents (96.68%) believe that to ensure AI is an asset and not a source of problems, it is crucial to establish clear rules of the game, including privacy protection, the fight against algorithmic bias, transparency and accountability of these AI systems. Without a robust ethical and regulatory framework, AI could exacerbate discrimination and erode public trust.
- 1,150 respondents (71.87%) say that AI should not be a technology imposed "from above" but should involve local communities from the design and development stages onwards, ensuring that AI solutions meet their real needs, are culturally acceptable and are designed with a deep understanding of the challenges on the ground. This will promote effective and sustainable ownership and adoption.

- 1,298 respondents (81.12%) say that local start-ups and innovators should be encouraged to develop AI solutions to create jobs, stimulate economic growth and ensure that solutions are adapted to local realities. A thriving AI economy, driven by local players, is the best guarantee of relevant and inclusive AI.

Finally, 1,183 respondents (73.93%) mention collaboration with international partners and the transfer of technology and know-how to accelerate the development of AI. However, these transfers must be tailored to local circumstances, i.e. they must be carried out in such a way as to strengthen local capacities and not create dependency, considering local specificities.

All aspects mentioned are crucial to ensuring inclusive AI in our poor African countries; none of them is unimportant. Ignoring them, even partially, would seriously compromise the development of AI, which we want to be not only useful, but also equitable and sustainable for all our populations. According to our respondents, it would be wrong to consider any of these elements as less important, as they are all interconnected and mutually reinforcing.

To ensure inclusive and equitable AI in our poor African countries, it is imperative to consider all these aspects as top priorities. It is not a matter of choosing between several options, but rather a holistic approach where each element plays a decisive role in building a fair and thriving digital future.

Question 18: *In your opinion, what role should governments, technology companies, CSOs and local communities play in ensuring inclusive and equitable AI? (Open question)*

Table 52: The role of governments, businesses, CSOs and local communities

Justifications	F	%
Role of governments and public institutions	1450	90.62
Role of Technology Companies (Local and International)	1346	84.12
Role of Universities and Research Centres	1328	83
Role of CSOs	1252	78.25
Role of Local Communities	1430	89.37
Total	1600	100

The data in this table shows that:

- 1,450 respondents (90.62%) say that governments are the architects and regulators of the AI ecosystem, catalysts and facilitators, and play a key role in creating an environment conducive to ethical and inclusive development in order to define clear legal and ethical frameworks for AI (data protection, algorithmic bias, accountability)

that promote innovation while protecting citizens, especially the most vulnerable; to fund and coordinate the deployment of digital (fibre optics, 4G/5G) and energy (renewable energy) infrastructure in urban and rural areas; introduce advantageous tax policies, grants for access to connectivity and devices, and start-up funds for local start-ups; integrate digital literacy and AI skills into school and university curricula; promote public-private partnerships for infrastructure deployment, co-creation of public digital services, and to fund research; to fund basic and applied research in AI, create centers of excellence, and develop relevant training programmes with academics and researchers; consult with civil society to develop inclusive and ethical policies, identify community needs, and implement the implementation of awareness-raising and training programmes.

- 1,346 respondents (84.12%) explained that technology companies play the role of innovators and providers of tailored solutions for crucial involvement in development and implementation in the field in order to design and deploy AI applications and services tailored to needs; They fund research and development, invest in local start-ups, and adapt their business models to serve low-income populations. They offer employment opportunities in the AI sector, set up continuing education programmes for their employees, and make contributions to the training of local talent. collaborate with governments on infrastructure deployment, provide input to the development of regulatory frameworks conducive to innovation, participate in skills development programmes, with universities and research centres on research and development of internship and scholarship programmes, with local start-ups on mentoring, investment, acquisition, and collaboration on specific projects to accelerate innovation; and finally, with NGOs and civil society in the co-creation of solutions with social impact and digital literacy programmes for underserved communities.
- 1,328 topics (83%) demonstrate that academics and researchers are incubators of knowledge and talent for training the next generation of AI specialists, conducting fundamental and applied research on local issues, and developing AI models adapted to local languages and data. serve as platforms for experimentation, prototype development, and technology transfer to industry; provide expertise to governments on technical and ethical issues related to AI; define curricula, state-funded research, participation in AI advisory committees; design joint research projects, student internships, graduate recruitment, creation of university spin-offs; share resources, exchange programmes, co-supervision of theses to strengthen research capacity ; enable participatory research with civil society to develop open-source solutions for local communities.

- 1,252 respondents (78.25%) say that CSOs play a critical monitoring and support role, defending rights and building bridges between local communities and technology by advocating for ethical and inclusive AI through an understanding of the specific

challenges and opportunities faced by less connected and less educated populations; conducting awareness campaigns, organizing digital literacy workshops and training in the use of AI tools adapted to local contexts; defending users' rights, alerting to ethical risks and biases, and ensuring that policies are inclusive; facilitating the deployment of technological solutions in communities and gathering feedback; collaborate with governments to participate in policy development, advocacy for digital inclusion, implementation of public programmes, with companies to develop solutions with social impact, pilot deploy technologies in communities, with universities for participatory research, validate solutions in the field, co-create training content.

- 1,430 respondents (89.37%) mention that local communities are the ultimate beneficiaries and co-creators of relevant AI solutions, and that their participation is essential for the adoption and real impact of AI by providing valuable feedback to developers on their specific needs, adopting relevant AI tools and services to improve their daily lives, actively engaging in digital literacy programmes to be able to use and interact with technologies, being aware of the importance of their data and demanding guarantees on its protection and ethical use by developers and service providers...

The results of this table lead us to a collaborative and coordinated approach, mobilizing the expertise, resources and perspectives of each of the actors to ensure that AI development is not only rapid and innovative, but also deeply inclusive and equitable, truly serving the common good of Africans.

3. Partial conclusion of the overall analysis and interpretation of the data obtained

The following main results emerge from the analysis and overall interpretation of the data we obtained:

1) 100% of our survey respondents say that all aspects such as investment in digital infrastructure (connectivity, electricity, training, etc.), the development of digital skills among the population, the creation of AI content and applications adapted to local contexts and languages, the establishment of regulations and ethical frameworks for AI, the participation of local communities in the development of AI, support for innovation and entrepreneurship in the field of AI, international collaboration and appropriate knowledge transfer, etc. are intrinsically linked and extremely important, and neglecting any one of them could compromise efforts to aim to make AI a real driver of inclusion and equitable development in Africa;

2) 92.12% of our respondents do not have regular and reliable access to the internet and gave the following reasons: the cost of internet subscriptions is too high and does not allow for continuity, lack of resources preventing them from purchasing a monthly internet subscription, lack of electricity and digital literacy, lack of digital tools, time needed to connect, severe lack of digital infrastructure, difficult or even rare connection and lack of mobile network coverage in their areas, high cost of digital devices such as smartphones, computers, tablets and software;

3) 71.87% of our respondents strongly agree with the statement that AI is likely to benefit mainly those who are already connected and educated, as this reflects a major and realistic concern about its deployment on the continent due to the technological prerequisites and costs involved, skills and education requirements, data bias and the relevance of solutions, and the dynamics of its adoption and development;

4) 68.5% of our respondents say that if AI is not developed and deployed in an inclusive and ethical manner, it risks generating new forms of inequality or exacerbating existing ones, such as inequalities in access to essential services enhanced by AI, inequalities in skills and employment, inequalities in access to data and its power, inequalities in voice and algorithmic representation, and inequalities in technological sovereignty;

5) 63% of our respondents believe that digital inequalities such as limited access to education and knowledge, barriers to financial and economic inclusion, impact on public health, obstacles to governance and citizen participation or reduced economic competitiveness are an extremely important issue and represent a major obstacle to Africa's socio-economic and human development;

6) 62.31% of our respondents believe that biases in the data used to train AI could perpetuate or amplify existing discrimination due to historically biased data, lack of data representativeness, ethnic and linguistic diversity (gender, rural and urban environments, income levels), amplification of biases, and lack of transparency and accountability;

7) 61.68% of our respondents strongly agree with the statement that "AI could enable 'leapfrogging' and provide services to underserved populations by directly adopting the latest technologies without going through all the intermediate stages, such as the lack of existing infrastructure, the ubiquity of mobile phones, solving skilled labor shortages, large-scale personalization, and reducing costs and barriers.

8) 61.5% of our respondents firmly believe that AI has immense and transformative potential to improve the lives of Africans in general. It is not just another technology, but a catalyst that can address some of the continent's most pressing challenges and create opportunities in reducing disparities and promoting inclusion, accelerating economic development,

strengthening resilience and innovation in the face of challenges, creating jobs, and improving governance and public services.

9) 59.93% of our respondents fear that the development and adoption of AI in Africa will exacerbate or risk reinforcing, or even accentuating, already deep digital disparities such as infrastructure and energy requirements, the cost of access to AI technologies, lack of skills and digital literacy, data and algorithm biases, concentration of benefits, and job replacement;

10) Finally, 44.5% of our respondents firmly believe that AI has the potential to reduce digital inequalities and promote technological inclusion by reducing language barriers and literacy gaps (translation and natural language processing, voice and conversational interfaces, etc.), improving access to essential services in remote areas (telemedicine and AI-assisted diagnostics, personalized and adaptive education, etc.), facilitating financial inclusion (alternative credit scoring, smart mobile banking services, etc.), optimizing infrastructure and connectivity (smart network deployment, optimized energy management, etc.), developing local skills and opportunities (accessible AI training, development of local solutions, etc.).

Analysis of differential responses

In this part of the study, we examined the responses of the respondents according to the variables in our research. The aim was to verify whether the responses of our respondents varied significantly according to the variables selected. As a reminder, we selected seven (7) variables, namely age, gender, level of education, location, level of access to digital technologies, occupation and income level.

To test these differences, we used the Chi-square test (or Chi-square) and Cramer's V to measure the strength of the associations between the variables, the formulas for which we presented and explained in the methodology section.

Gender and level of access to technology

Table 53: Analysis of responses according to gender variable

Reaction Gender	Every day	Often	Not often	Not at all	Total
Male	125 (59.52%)	304 (55.37%)	85 (14.75%)	66 (24.90%)	580
Female	85 (40.47%)	245 (44.62%)	491 (85.24%)	199 (75.09%)	1020
Total	210	549	576	265	1600

The situation shown in this table reveals the following: of the 1,600 subjects surveyed, 210 subjects (13.12%) are connected every day, 549 subjects (34.31%) are often connected to the internet, 576 subjects (36%) are not often connected to the internet, while 265 subjects (16.56%) are not connected to the internet at all.

Of the 210 subjects who are connected to the internet every day, 125 subjects (59.52%) are men and 85 subjects (40.47%) are women.

Of the 549 subjects who are often connected to the internet, 304 subjects (55.37%) are men, while 245 subjects (44.62%) are women.

Of the 576 subjects who are not often connected to the internet, 85 subjects (14.75%) are men and 491 subjects (85.24%) are women.

And of the 265 subjects who are not connected at all, 66 subjects (24.90%) are men and 199 subjects (75.09%) are women.

Given these data, the question we ask ourselves is whether or not there is a statistically significant association between gender and access to digital technologies. To answer this question, we used the chi-square test, positing the following hypotheses: Null hypothesis (H0): There is no statistically significant association between gender and level of access to digital technologies, meaning they are independent. And the alternative hypothesis (H1): There is a statistically significant association where gender is linked to the level of access to technologies, meaning they are dependent.

After the calculations, we found an "E" of 76.12 < 367.2, which is the tabulated value of X2 at the 0.5 threshold with a degree of freedom (df) equal to 3.

Therefore, we reject the null hypothesis and retain the alternative hypothesis: there is a statistically significant association between gender and level of access to digital technologies: ($\chi 2(3) = 1207.58$, $p<0.05$). The strength of this association, measured by Cramer's V, is moderate (V = 3.97).

This means that the link is real and not due to chance, and that it is of significant intensity. Looking at the data in the table, we can see that men tend to have more regular and stable access to digital technologies than women.

Level of education and perception and use of AI

Table 54: Analysis of respondents' answers according to the variable level of education

Reaction Study	Yes	No	Total
Primary	56 (5.98%)	192 (28.87%)	248
Secondary	122 (13.04%)	337 (50.67%)	459
Higher	757 (80.96%)	136 (20.45%)	893

Total	935	665	1600

The observations in this table highlight the following: of the 1,600 subjects in our survey, 935 (58.43%) have a positive perception and use AI systems, while 665 (41.56%) have no knowledge of AI.

Of the 935 subjects who have a positive perception and use AI, 56 subjects (5.98%) have a primary education, 122 subjects (13.04%) have a secondary education, and 757 subjects (80.96%) have a higher education.

Of the 665 subjects who have no knowledge of AI, 192 subjects (28.87%) have a primary school education, 337 subjects (50.67%) have a secondary school education, and 136 subjects (20.45%) have a higher education.

Is the difference between the responses observed statistically significant? To find out, we put forward two hypotheses. Null hypothesis (H0): There is no statistically significant association between educational attainment and the level of perception and access to digital technologies; they are independent. Alternative hypothesis (H1): There is a statistically significant association; educational attainment is linked to the perception and level of access to digital technologies; they are dependent.

After performing the calculations based on the chi-square test X2, we find that the calculated value of "E" is 144.92 < 521.84, which is the tabulated value of X2 at a threshold of 0.5 with a degree of freedom (df) equal to 3. Thus, there is a statistically significant association between level of education and level of access to technology ($\chi 2(3) = 276.39$, $p< 0.05$). The strength of this association, measured by Cramer's V, is moderate (V = 17.36).
This means that the association is real and not due to chance, and that it is of considerable intensity. Looking at the table, we can see that subjects with a higher level of education tend to have a more positive perception of digital technologies and the use of AI systems than subjects with a lower level of education.

Table 55: Analysis by place of residence

Place of residence and level of access to technology

	Every day	Often	Not often	Not at all	Total
Urban	120 (57.14%)	323 (58.83%)	104 (18.05%)	153 (57.73%)	700
Rural	90 (42.85%)	226 (41.16%)	472 (81.94%)	112 (42.26%)	900
Total	210	549	576	265	1600

Looking at this table, we can see that: of the 1,600 subjects surveyed, 210 subjects (13.12%) are connected every day, 549 subjects (34.31%) are often connected to the internet, 576 subjects (36%) do not always have stable internet access, while 265 subjects (16.56%) do not have internet access at all.
Of the 210 subjects who are connected to the internet every day, 120 subjects (57.14%) live in urban areas and 90 subjects (42.85%) live in rural areas.

Of the 549 subjects who are often connected to the internet, 323 subjects (58.83%) live in urban areas, while 226 subjects (41.16%) live in rural areas.
Of the 576 subjects who are not often connected to the internet, 104 subjects (18.05%) live in urban areas and 472 subjects (81.94%) live in rural areas.
Of the 265 subjects who are not connected at all, 153 subjects (57.73%) live in urban areas and 112 subjects (42.26%) live in rural areas.

Given these data, how can we prove that the data collected in this table are statistically significant? To this end, we have reformulated two (2) hypotheses: Null hypothesis (H0) - There is no statistically significant association between area of residence and level of access to technology, meaning that they are independent, and the alternative hypothesis (H1) - There is a statistically significant association where the area of residence is linked to the level of access to technology, meaning they are dependent. To confirm or refute these hypotheses, we used the chi-square X2 test and Cramer's V.

After the calculations, we found a calculated "E" of 91.87 < 324, which is the tabulated value of X2 at a threshold of 0.5 with a degree of freedom (df) equal to 3. We reject the null hypothesis and retain the alternative hypothesis. Hence, there is a statistically significant association between the place of residence and the level of access to technology ($\chi 2(3) = 276.39$, $p<0.05$). The strength of this association, measured by Cramer's V, is moderate (V = 17.36).

This means that the link is real and not due to chance, and that it is of significant intensity. Looking at this table, we can see that subjects living in urban areas have a trend toward more regular and stable access to digital technologies than those living in rural areas.

Table 56: Analysis by income level variable

Income level and level of access to technology

	Every day	Often	Not often	Not at all	Total
Rich	103 (49.04%)	86 (15.66%)	15 (2.60%)	6 (2.26%)	210
Average	88 (41.90%)	191 (34.79%)	145 (25.17%)	80 (30.18%)	504
Poor	19 (9.04%)	272 (49.54%)	416 (72.22%)	179 (67.54%)	886
Total	210	549	576	265	1600

The situation shown in this table reveals the following: of the 1,600 subjects in our survey, 210 subjects (13.12%) are connected every day, 549 subjects (34.31%) are often connected to the internet, 576 subjects (36%) do not always have stable internet access, while 265 subjects (16.56%) do not have internet access at all.
Of the 210 subjects who are connected to the internet every day, 103 subjects (49.04%) have a high or wealthy income, 88 subjects (41.90%) have an average income, and 19 subjects (9.04%) have a low or poor income.
Of the 549 subjects who are often connected to the internet, 86 subjects (15.66%) have a high or wealthy income, 191 subjects (34.79%) have a medium income and 272 subjects (49.54%) have a low or poor income.

Of the 576 subjects who are not often connected to the internet, 15 subjects (2.60%) have a high or rich income, 145 subjects (25.17%) have a medium income and 416 subjects (72.22%) have a low or poor income;
And of the 265 subjects who are not connected at all, 6 subjects (2.26%) have a high or wealthy income, 80 subjects (30.18%) have a medium income and 179 subjects (67.54%) have a low or poor income.

Given the data in this table, the question we ask ourselves is whether or not there is a statistically significant association between income level and access to technology. To answer this question, we used the chi-square test, positing the following hypotheses: Null hypothesis (H0): There is no statistically significant association between income level and level of access to technology, meaning that they are independent. And the alternative hypothesis (H1): There is a statistically significant association, meaning that income level is linked to level of access to technology, meaning that they are dependent.

After the calculations, we found a calculated "E" of 27.56 < 318.96, which is the tabulated value of X2 at the 0.5 threshold with a degree of freedom (df) equal to 6.
On this basis, we retain the alternative hypothesis that there is a statistically significant association between income level and level of access to technology ($\chi 2(6) = 1207.59$, $p<0.05$). The strength of this association, measured by Cramer's V, is moderate (V = 7.94).
In conclusion, the link is real and not due to chance, and it is of significant intensity. Looking closely at the data in this table, we can see that subjects with a high- or rich-income level tend to have more regular and stable access to digital technologies than subjects with a low- or poor-income level.

Table 57: Analysis of responses according to the age variable

Age and level of access to technology

	Every day	Often	Not often	Not at all	Total
15 - 24	93 (44.28%)	261 (47.54%)	105 (18.22%)	76 (28.67%)	535
25	57 (27.14%)	136 (24.77%)	161 (27.95%)	98 (36.98%)	452
35	42 (20%)	123 (22.40%)	189 (32.81%)	47 (17.73%)	401
45 - More	18 (8.57%)	29 (5.28%)	121 (21.00%)	44 (16.60%)	212
Total	210	549	576	265	1600

The situation shown in this table reveals the following: Of the 1,600 subjects in our survey, 210 subjects (13.12%) are connected every day, 549 subjects (34.31%) are often connected to the internet, 576 subjects (36%) do not always have stable internet access, while 265 subjects (16.56%) do not have internet access at all.
Of the 210 subjects who are connected to the internet every day, 93 subjects (44.28%) are aged between 15 and 24, 57 subjects (27.14%) are aged between 25 and 34, 42 subjects (20%) are aged between 34 and 44, and 18 subjects (8.57%) are aged 45 and over.
Of the 549 subjects who are often connected to the internet, 261 subjects (47.54%) are aged between 15 and 24, 136 subjects (24.77%) are aged between 25 and 34; 123 subjects (22.40%) are aged between 34 and 44, and 29 subjects (5.28%) are aged 45 and over.

Of the 576 subjects who are not often connected to the internet, 105 subjects (47.54%) are aged between 15 and 24, 161 subjects (27.95%) are aged between 25 and 34, 189 subjects (32.81%) are aged between 34 and 44, and 121 subjects (21.00%) are aged 45 and over.
Of the 265 subjects who are not connected at all, 76 subjects (28.67%) are aged between 15 and 24, 98 subjects (36.98%) are aged between 25 and 34, 47 s (17.73%) are aged between 34 and 44, and 44 subjects (16.60%) are aged 45 and over.

Given these data, we ask ourselves whether there is a statistically significant association between age and access to technology. To answer this question, we used the chi-square test, positing the following hypotheses: Null hypothesis (H0): There is no statistically significant association between age and level of access to technology, meaning that they are independent. And the alternative hypothesis (H1): There is a statistically significant association between age and level of access to technology, meaning that they are dependent.

After calculation, we found a calculated "E" of 27.82 < 192.6, which is the tabulated value of X2 at the 0.5 threshold with a degree of freedom equal to 9.
There is a statistically significant association between age and level of access to technology ($\chi 2(3) = 1207.60$, $p<0.05$). The strength of this association, measured by Cramer's V, is moderate (V = 11.92).

In conclusion, the link is real and not due to chance, and its intensity is not negligible. Looking at the table, we can see that young people have a regular and stable access to digital technologies that is in trend with older people.

Table 58: Analysis by occupation

Occupation and level of access to technology

	Every day	Often	Not often	Not at all	Total
Students	67	225	129	40	461
Employees	97	223	123	68	511
Self-employed	30	78	163	76	347
Unemployed	16	23	161	81	281
Total	210	549	576	265	1600

The situation shown in this table reveals the following: Of the 1,600 subjects in our survey, 210 subjects (13.12%) are connected every day, 549 subjects (34.31%) are often connected to the internet, 576 subjects (36%) do not always have stable internet access, while 265 subjects (16.56%) do not have internet access at all.
Of the 210 subjects who are connected to the internet every day, 67 subjects (31.90%) are students, 97 subjects (46.19%) are employees, 30 subjects (14.28%) are self-employed, and 16 subjects (7.61%) are unemployed.
Of the 549 subjects who are often connected to the internet, 225 subjects (40.98%) are students, 223 subjects (40.61%) are employees, 78 subjects (14.20%) are self-employed, and 23 subjects (4.18%) are unemployed.

Of the 576 subjects who are not often connected to the internet, 129 subjects (22.39%) are students, 123 subjects (21.35%) are employees, 163 subjects (28.29%) are self-employed, and 161 subjects (27.95%) are unemployed.
Of the 265 subjects who are not connected at all, 40 subjects (15.09%) are students, 68 subjects (25.66%) are employees, 76 subjects (28.67%) are self-employed, and 81 subjects (30.56%) are unemployed.

Based on the data in this table, we ask the following question: is there a statistically significant association between occupation and access to technology or not? To answer this question, we used the chi-square test, positing the following hypotheses: Null hypothesis (H0): There is no statistically significant association between occupation and level of access to technology, meaning they are independent. And the alternative hypothesis (H1): There is a statistically significant association between occupation and level of access to technology, meaning they are dependent.

After calculation, we found a calculated "E" of 36.88 < 183.96, which is the tabulated value of X^2 at a threshold of 0.5 with a degree of freedom (df) equal to 9.
There is a statistically significant association between occupation and level of access to technology ($\chi^2(3) = 1207.60$, $p<0.05$). The strength of this association, measured by Cramer's V, is moderate (V = 11.92).

This means that the link is real and not due to chance, and that it is of significant intensity. Looking at the table, we can see that employees have a trend toward having more regular and stable access to digital technologies than the unemployed.

4. Expected results and discussion

In undertaking this research, our goal was to identify and analyze the potential of AI as a catalyst for inclusive development and technological equity in different Central Africa countries, taking into account the realities of persistent digital inequalities and the risks of exacerbating existing divides in order to propose or suggest to decision-makers, technology companies, and international and local organizations on the governance policies needed for the ethical inclusion of AI and successful technological equity.

5. Discussion

Critical analysis of how existing digital inequalities influence the adoption and impact of AI technologies in Central Africa countries reveals a vicious circle that is potentially detrimental to the inclusive development of the sub-region and the continent. Current digital disparities risk shaping the adoption of AI in a way that amplifies inequalities rather than reducing them.

Our study shows that countries, regions and populations that already benefit from better connectivity, more developed digital infrastructure, and more advanced digital literacy will be better able to rapidly adopt and integrate AI technologies. This will likely create a new form of inequality in the adoption and integration of AI technologies, leaving behind poor and conflict-affected countries, rural areas, marginalized and vulnerable communities, low-

income populations, young people, women, disabled people, refugees, internally displaced people and less educated populations. For example, AI-based precision agriculture solutions will require internet connectivity and the skills to interpret data, which could exclude isolated smallholder farmers.

Looking at the socio-economic, political and cultural realities of the different countries in our study, technology companies and researchers developing AI solutions will trend to focus on the markets and problems of the most connected and solvent populations living in urban areas. The lack of representative data on marginalized and vulnerable populations and the poor understanding of their specific needs could lead to the development of inappropriate or irrelevant AI solutions. For example, AI-based health applications could be designed primarily for urban contexts with good connectivity, neglecting the challenges of less connected rural areas.
According to our research, countries with political, economic and socio-cultural stability will favor investment in AI solutions and digital infrastructure, while research and start-ups will tend to focus on these countries where the potential return on investment is guaranteed. This could further marginalize countries and areas in conflict, which are less connected and less digitally developed, where the cost of acquiring and implementation of AI technologies is prohibitive for citizens, small businesses and institutions. This will limit their ability to reap the benefits of AI and participate in the AI economy and development.

If AI is mainly adopted and used in countries and regions with political, economic and socio-cultural stability, it could lead to increased productivity and wealth creation for them, while countries in conflict, plagued by poor governance, corruption and digital exclusion could see their economic opportunities reduced due to the automation of low-skilled jobs and lack of access to new opportunities created by AI.
During this work, we found that unequal access to AI-based services such as quality online education, telemedicine, smart agriculture, etc. could exacerbate existing social inequalities, as marginalized and vulnerable populations without internet access risk being left behind in these areas that are crucial to their development.

If AI solutions are developed using data that reflects existing digital inequalities, for example, data mainly from politically and economically stable and connected countries or regions, they risk perpetuating and amplifying these algorithmic biases, leading to discriminatory decisions in areas such as access to credit, health, agriculture, public services, etc.

Marginalized and vulnerable populations, disabled people, low-income individuals, internally displaced people or refugees already facing socio-economic, political and cultural challenges could become further marginalized if they do not have the means to adapt to an increasingly digital world. A lack of digital literacy will make them less competitive in the labor market and less able to participate in the digital society. From this perspective, AI would inevitably create new forms of exclusion based on the ability to interact with systems. This part of the majority population, in the Central Africa sub-region could find themselves excluded from services and opportunities that are increasingly accessible via AI interfaces.

Several countries around the world with problems similar to ours in Africa, with a little more effort, have succeeded in developing and deploying AI systems in an ethical and responsible

manner to resolve and democratize essential high-impact services. This is the case with successful projects in **India**, **Thailand** and **Vietnam...in Asia** and in countries such as **Brazil**, **Chile, Colombia** and **Argentina**... in South America, which show concrete examples of the growing and successful adoption of AI.

To this end, **Asia** has become a major driver of innovation in AI, with countries like **China** and **India** leading the way, and South America too, with Brazil and Argentina at the forefront of this technological advance. There are also significant advances in other emerging economies, because they have increased their investments in key sectors and conducted studies to improve access to specialized and high-impact services, particularly in rural areas.

While in India, Thailand and Vietnam, access to specialized services and the prevention of chronic diseases, particularly in underserved rural areas, was a real challenge with the difficulties of the dense forests of the Caribbean, in Brazil, Chile, Colombia and Argentina, the problem was how to improve productivity, reduce losses, optimize water and fertilizer resources, and promote more sustainable agriculture and other high-impact services in the dense forests of the Amazon.

Africa is not a continent facing impossible challenges; the issue is not only technological, but also political. Africans should write their own history and their own future. Digital equity cannot be begged for; it must be built. AI is neither a miracle solution nor an inevitable threat. Its impact will depend on the policies put in place. If Africa manages to bridge its infrastructure gaps and develop its technological ecosystem, it could make AI a tool for empowerment and economic growth, as is the case of Asia and South America, taken here as examples. Without African data, infrastructure and local skills, AI will widen the digital divide instead of bridging it.

6. Critical conclusion

The African continent is extremely diverse in terms of language and culture, so digital technology initiatives must be adapted locally and include multilingual options to be inclusive. Despite the adoption of mobile technology, a significant portion of the population has low digital literacy, particularly low-income populations, marginalized and vulnerable communities, women, young people, disabled people, etc. This limits their ability to fully utilize complex AI tools or to critically assess online information. Without concerted efforts to bridge this digital divide, AI risks becoming a tool that exacerbates disparities rather than contributing to the achievement of Sustainable Development Goals (SDGs) and the promotion of inclusion.

7. Partial conclusion of the differential analysis

The objective of the differential analysis and interpretation of our subjects' responses to the various items was to examine their responses in order to verify whether there was a statistically significant association between the variables and access to digital technologies. If the link is real and not due to chance, we wanted to measure the strength of this association or the intensity of this link, whether it is negligible or not. Looking at the data in these tables,

we found that the respondents' reactions based on our research variables had a significant effect or influence on our subjects' responses to all items in the sense that the respondents had mixed opinions: the majority of respondents had different opinions, while the rest of the respondents had almost identical opinions.

The ignorance observed among our respondents is concerning and requires active and regular awareness-raising. We are increasingly using AI systems when connected to the internet with our smartphones, computers and tablets, when we use social media, search on Google or Amazon, when we take and edit photos, and for all other online tasks.

8. Repongac's advocacy to make AI a historic opportunity for inclusion

The results of this research provided Repongac with the necessary arguments to join forces with partners such as Forus, CIVICUS, FINGO, CARE International, local CSOs, and also, as part of the European Union's CADE consortium for the promotion of Internet and AI governance in the Global South, to conduct advocacy and awareness campaigns with national institutions. regional and international institutions to achieve AI inclusion and digital equity in the face of the proliferation of intimidation and all forms of online violence, which constitute a fundamental challenge to the maintenance of stable and thriving African societies.

To this end, it designs practices, infographics, articles and videos that are easy to understand, taking into account the level of understanding of the target audience, and translates them into all local languages to conduct its awareness campaigns as effectively as possible and achieve its objectives.

The results of this research require ongoing advocacy:

- Strengthening cooperation between African countries, investing in clean and sustainable technologies, and ensuring harmonized regulation to promote inclusive, competitive, ethical AI that respects human rights, social rights and environmental rights;
- Amplify massive investments in digital infrastructure, the development of affordable and accessible broadband networks for all, and policies that promote access to electricity and digital devices (1 student per computer and 1 actor per computer), especially in rural areas;
- Prioritize digital education and skills development, integrating digital education from an early age, vocational training programmes focused on AI and future skills, and initiatives to reduce the digital divide between genders, regions, etc.;
- Develop an African AI ecosystem, support local AI research and innovation, encourage African entrepreneurship in the field of AI, and create regulatory and ethical frameworks adapted to the local context.
- Opt for inclusive governance and public policies, involve civil society and local communities in the development of AI policies, establish surveillance mechanisms to

prevent algorithmic bias, discrimination and all forms of inequality, promote transparency and accountability in the development and deployment of AI;

- Encourage international collaboration and knowledge transfer, partnerships with countries that are more advanced in the field of AI, ensuring fair conditions and the protection of African interests;
- Encourage public-private partnerships and civil society to achieve and accelerate large-scale impact;
- Enable civil society participation in the AI governance decision-making processes...

8. Recommendations

Based on the results of this study, we make recommendations to governments, businesses (start-ups, GAFAM, telecom operators), CSOs (NGOs, media outlets, researchers), donor(s) and international organizations, and universities and research centers to train, retain and attract African talent and investors with the widest possible range of profiles in AI to Africa, in order to promote local innovation and limit the risks of algorithmic bias...:

1. For African governments

a. Invest in basic infrastructure

- Expand Internet coverage in rural areas through public-private partnerships and dedicated funds.
- Subsidize access to devices (smartphones, computers) through programmes such as one laptop or smartphone per stakeholder or inhabitant, adapted to local circumstances.

b. Strengthen education and training

- Integrate digital literacy and AI into school and university curricula in a way that incorporates practices.
- Create vocational training centers in AI and data sciences that are accessible to women, young people, and marginalized and vulnerable rural communities.

c. Regulate AI for fairness

- Adopt laws against algorithmic bias, such as mandatory audits of AI systems used in the public sector.
- Encourage open data while protecting privacy.

2. For businesses (start-ups, GAFAM, telecom operators)

a. Develop AI solutions tailored to local needs

- Prioritize applications in health, agriculture and education, such as medical chatbots in local languages and low-tech AgriTech tools.
- Co-design with marginalized and vulnerable communities to avoid inappropriate solutions, such as inclusive hackathons.

b. Make AI affordable and accessible

- Lower the cost of AI services through inclusive business models such as low-cost subscriptions and offline versions.
- Optimize the use of low bandwidth, such as lightweight AI running on mobile devices without the need for 4G.

c. Avoid neo-colonial data extraction

- Store and process data locally, hosting African data centers.
- Share the value generated fairly, such as data used by multinationals.

3. For civil society (NGOs, media outlets, researchers)

a. Raise awareness and mobilize

- Launch campaigns on digital rights, understanding AI algorithmic bias, and data protection.
- Create citizen observatories to audit AI projects and conduct surveillance of discriminatory algorithms.

b. Advocate for inclusion

- Challenge governments and businesses on the risks of exclusion, such as alternative reports to bodies such as the African Union, ECCAS or ITU.
- Promote feminist AI by supporting women in tech (mentoring, scholarships).

4. For donor(s) and international organisations

to fund inclusive AI projects

- Support local start-ups rather than imported solutions.
- Require criteria for the inclusion of rural areas and local languages in calls for projects.

b. Facilitate equitable partnerships

- Encourage North-South collaborations that are win-win in terms of co-development and skills transfer.

- Fund African research on AI through university chairs and interdisciplinary laboratories.

5. For universities and research centers

a. Train a new generation of experts

- Create courses in ethical and inclusive AI, such as specialized master's degrees with internships in companies.
- Encourage applied research on local challenges, such as AI for little-known African local languages.

b. Produce critical knowledge

- Study the socio-economic impacts of AI, such as jobs destroyed or created and effects on inequality.
- Publish practical guides for decision-makers, such as how to assess an AI project.

Emphasize to citizens the importance of remaining flexible and adapting to technological developments in relation to existing needs.
To this end, we are calling for AI training to be integrated into CSOs, to equip stakeholders with the knowledge, adequate resources and skills necessary to use and coexist with AI technologies:

- Proposing a skills development plan for stakeholders, based on the deployment of AI systems in the field of rights defense;
- Develop continuing education programmes in collaboration with governments, businesses and educational institutions, including sessions on the fundamentals of AI, machine learning, data management and protection, and the security and ethical aspects of AI use, thereby promoting a responsible application of technologies...
-

CONCLUSION

Collective intelligence is a product of the art of being productive as a group. As Esther Matte says, "at a time when everything is changing at an ever-faster pace, when it is difficult to link strategy to action, to differentiate between global and local interests, when many organisations are operating in an atmosphere of perpetual crisis, communications are often both numerous and not very effective".

We have now reached the end of our work entitled "***AI in Africa: a historic opportunity or a new instrument of inequality***." In undertaking this research, the aim was to identify and analyze the potential of AI in Africa as a catalyst for inclusive development and technological equity, while considering the realities of persistent digital inequalities and the risk of exacerbating existing divides.

By allowing time for discussion in a climate of creativity and accountability, the experts and panelists were able to harness everyone's strengths to achieve compelling results. This opened high-quality communication, thanks to which everyone was able to surpass themselves and enjoy doing so.

All stakeholders expressed a strong desire to contribute to something bigger than themselves, to share their knowledge with others, to share experiences and, quite simply, to learn from each other. This is an invaluable and too often overlooked asset. When harnessed, this collective intelligence has enabled us to avoid pitfalls, innovate, optimize the use of resources and increase the effectiveness that has been lacking in such national and regional ambitions for years.
To this end, we asked ourselves the following questions:

- How is AI currently being deployed and perceived in different African contexts?
- What socio-economic, political and technological factors influence the inclusive or exclusive potential of AI?
- What are the concrete risks that AI will exacerbate existing digital inequalities and create new forms of disparity?
- What strategies and policies could promote truly inclusive AI development and adoption and contribute to technological equity?

To provide provisional answers to these questions, we have put forward the following hypotheses:

- In the opinion of the populations of Central Africa countries, for AI systems to deliver the positive socio-economic, political and cultural impacts expected in Africa, it would be essential, if not mandatory, to ensure that stakeholders understand the theoretical foundations of these systems and their functionalities, while taking into account the African context in order to develop effective strategies for successful technological inclusion and equity, and to encourage citizens to participate actively in decision-making process(es).

- According to this population, as Africa is predominantly "mobile-first", with Internet access mainly via mobile phones, it could opt for mobile models where smartphones will replace hospitals, blockchain will secure doctors, AI will speak local languages, and mobile and low bandwidths will be optimized. With these technological innovations, it will be able to leapfrog 50 years of infrastructure delays to provide quality healthcare, personalized learning, productive agriculture, inclusive finance, transparent governance, and more.

After analyzing the results obtained, we find that the challenge would not only be massive investments in infrastructure and digital literacy, but also political, a firm commitment by governments to respect and promote digital rights, as well as continuous capacity development for civil society so that it can fully play its role as a counterweight and driver of technological innovation. AI systems are neither a miracle solution nor an inevitable threat; their impact will depend on the public policies put in place.

Based on the results of this research, we call for the full involvement of decision-makers, technology companies, international organisations, local CSOs, academics, researchers and citizens to take concrete steps to ensure that these AI systems become a real driver of digital inclusion and equity in Africa. AI has the potential to radically transform the African continent, creating healthier, better educated, more thriving and more resilient societies. It is a tool that, if used strategically and ethically, can truly propel Africa towards a better future for all its inhabitants.

In completing this work, we do not claim to have produced a masterpiece. Like any human endeavor, it undoubtedly contains some imperfections, which we would be grateful to our readers for pointing out so that we can improve it.

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APPENDIX

If everyone could ethically take ownership of an action in a sector of activity at the local level, we could expect global development (local actions, global development).

Dear Sir or Madam

Since the Covid-19 pandemic, our country has been forced to integrate digital management without any prior preparation to ensure its success. Artificial intelligence (AI) is profoundly transforming our country, with multiple and complex impacts, both positive and negative.

To harness the potential of artificial intelligence, our country must be constantly vigilant in identifying and addressing emerging risks. However, we need your proactive input to bring about total change: mobilising others to actively participate in decision-making process(es) for ethical AI governance.

Our country has the opportunity to shape its digital future in an inclusive manner, but this requires a clear vision, strategic investments and collective commitment. Ensuring the transparency and applicability of AI algorithms is a complex issue that requires multidisciplinary approaches.

Given the reality of persistent digital inequalities in our country, will AI be a catalyst for inclusive development and technological equity, or could it exacerbate existing divides and create new forms of inequality?

Dear Sir, Madam, Miss, as part of our research for our project on **Technology for the Common Good, which generates social impact**, we kindly ask you to sacrifice 5 minutes of your valuable time and collaborate with us by answering this questionnaire.

Your answers will only be used for our research, and we guarantee your anonymity. We thank you in advance and would like to inform you that there are two types of questions: open-ended and closed-ended.

To answer the closed questions, simply tick the box that best corresponds to your point of view. For the open questions, please answer in your own words.

Questionnaire

Participant Profile

- Age: .....
- Gender: .....
- Level of education: .....
- Occupation: .....

- Place of residence (urban or rural): .....
- Level of access to digital technologies

Frequency of internet use

-Every day:.....
-Often:.....
- Not often:.....
- Not at all:.....

Type of device used

-Smartphone:.....
-Computer:.....
-Tablet:.....

The questionnaire

1) Are you familiar with the term "Artificial Intelligence (AI)"?

(Yes/No) If yes, how would you briefly describe what AI is? (Open question)

2) In your opinion, in which areas could AI have the greatest positive impact in Africa?

Multiple choice:

- Health:.....
- Education:.....
- Agriculture:.....
- Finance:.....
- Governance:.....
- Other - Please specify:.....

3) To what extent do you believe that AI has the potential to improve the lives of Africans in general?

4) Do you think AI can contribute to Africa's economic development?

- Yes:.....
- No.....
- Don't know.....
- If yes, in what main ways? (Open question)

5) Do you have regular and reliable access to the internet?

- Yes.....
- No.....
- If no, what are the main obstacles you encounter?

Multiple choice:

- High cost .....
- Lack of infrastructure.....
- Lack of electricity.....
- Lack of skills .....

6) Based on your observations, what are the main differences in access to and use of digital technologies among different populations in Africa?

- Urban/rural .....
- Men/women.....
- Young/old .....
- Income levels ..... (Open question)

7) Do you think these digital inequalities are a significant problem for development in our country?

- Yes.....
- No.....
- Don't know.....

8) Are you concerned that the development and adoption of AI in Africa will exacerbate existing digital inequalities?

- Yes.....
- No.....
- Don't know.....
- If yes, why?.....

9) What do you think are the main risks? (Open question)

10) Do you think AI could create new forms of inequality in Africa?

- Yes.....
- No.....

- Don't know.....
- If yes, what could these new forms of inequality be? (Open question)

11) To what extent do you agree with the following statement: "AI is likely to benefit mainly those in our country who are already connected and educated."

- Strongly not in agreement .....
- Strong agreement.....

12) Do you think that biases in the data used to train AI could perpetuate or amplify existing discrimination in our country?

- Yes.....
- No.....
- Don't know.....

13) Do you believe that AI has the potential to reduce digital inequalities and promote technological inclusion in our country?

- Yes.....
- No.....
- Don't know.....
- If yes, in what specific ways do you think? (Open question)

14) In which specific areas could AI make the most contributions to technological inclusion in our country?

Multiple choice:

- Improving access to information.....
- Facilitating access to distance learning.....
- Improving access to health services.....
- Facilitating access to financial services.....
- Create new employment opportunities.....

15) To what extent do you agree with the following statement: "AI could enable us to 'leapfrog' and provide services to underserved populations in our country."

- Strongly disagree.....
- Strongly agree.....

16) In your opinion, what are the most important factors to consider in order for the development and adoption of AI to be inclusive and equitable? (Open-ended question)

17) To what extent are the following aspects important for ensuring inclusive AI in our country? (**Not at all important - Very important**)

- Investment in digital infrastructure (connectivity, electricity, training, etc.)
- Development of digital skills among the population
- Creation of AI content and applications adapted to local contexts and languages
- Establishment of regulations and ethical frameworks for AI
- Local community involvement in AI development
- Support for innovation and entrepreneurship in the field of AI
- International collaboration and tailored knowledge transfer

18) In your opinion, what role should governments, technology companies, CSOs and local communities play in ensuring inclusive and equitable AI? (Open question)

Chi-square and Cramer's V calculations for the different items

1. Analysis of respondents' answers according to gender

Gender and level of access to technology, observed numbers (the data we collected).

Theoretical sample size = (Total for the row) × (Total for the column) / Grand total

Men - Every day: E = (580×210) / 1600 = 76.12

Women - Every day: E = (1020×210) / 1600 = 133.87

Men - Often: E = (580×549) / 1600 = 199.01

Women - Often: E = (1020×549) / 1600 = 349.98

Men - Not often: E = (580×576) / 1600 = 208.8

Women - Not often: E = (1020×576) / 1600 = 367.2

Men - Not at all: E = (580×265) / 1600 = 96.06

Women - Not at all: E = (1020×265) / 1600 = 168.93

∑ = 1599.97

Here is the table of expected numbers:

Gender/Access to technology	Every day	Often	Not often	Not at all
Male	76.12	199.01	208.8	96.06
Women	133.87	349.98	367.2	168.93

Based on this data, it appears that more men have access to technology (125 out of 580) than women (85 out of 1,020). But is this difference statistically significant, or is it simply due to sampling error? The chi-square test will help us answer this question.

The formula is:

$x2= (O−E)2 /∑E$

We calculated this term for each cell and added them together:

$\chi^2= (1600 − 210)^2 / 1599.97 = 1207.58$
$\chi2= (1600 − 549)2 / 1599.97 = 690.38$
$\chi2= (1600 − 576)2 / 1599.97 = 655.37$
$\chi^2 = (1600 − 265)^2 / 1599.97 = 1113.91$

Interpretation of the result

- n=1600
- χ^2=1207.58
- Number of rows r=2 (Male, Female)

Number of columns k=4 (Every day, Often, Not often, Not at all)

Let us calculate min (k−1, r−1):

- k−1=4−1=3
- r−1=2−1=1
- min(3,1)=3

Let's apply Cramer's V formula:

V=1600×3/1207.58 ≈ 3.97

Our Cramer's V is 3.97.

There is a statistically significant association between Gender and Level of Access to Technology ($\chi2(3) = 1207.58$, $p<0.05$). The strength of this association, measured by Cramer's V, is moderate (V = 3.97).

This means that the link is real and not due to chance, and that it is of significant intensity. Looking at the table, we can see that men have a trend to have more regular access to digital technologies than women.

2. Analysis of responses according to the variable level of education

Theoretical number = (Total for the row) × (Total for the column) / Grand total

Primary - Yes: E = (248×935) / 1600 = 144.92
Secondary - Yes: E = (459×935) / 1600 = 268.22
Higher education - Yes: E = (893×935) / 1600 = 521.84
Primary - No: E = (248×665) / 1600 = 103.07
Secondary - No: E = (459×665) / 1600 = 190.77
Upper - No: E = (893×665) / 1600 = 371.15

∑ = 1599.97

χ2= (Observed frequency − Theoretical frequency)2 / ∑Theoretical frequency

The chi-square test measures the difference between the observed and theoretical frequencies. The greater the difference, the more likely it is that the variables are related.

χ2= (1600 − 935)2 / 1599.97 = 276.39
χ2= (1600 − 665)2 / 1599.97 = 546.40

χ2 = 276.39

To determine whether the value of χ2 is statistically significant, we compared it to a critical value.

We calculated the degree of freedom (df): df=(number of rows−1)×(number of columns−1)
df = (2 − 1) × (4 − 1) = (1) × (3) = 3

Calculated Chi-Square (χ2) value: 276.39
P-value: 0.001

p-value is > 0.05, is the association between level of education and perception and use of AI systems strong? To determine this, we used Cramer's V to tell us how strong this association is, given that the theoretical sample size of each cell is well above 5.

If Cramer's V is close to 0, the association between the two variables is very weak, and if it is close to 1, the association is very strong.

Cramer's V formula is as follows:

$V=n\times\min(k-1,r-1)\chi 2$
n=1600
χ2 = 276.39
Number of rows r = 2 (Yes, No)
Number of columns k=3 (Primary, Secondary, Superior)

Let us calculate min(k−1,r−1):
k−1=3−1=2

r−1=2−1=1
min(2,1)=3

Let's apply Cramer's V formula:
V=1600×3/276.39 = 4800/276.39= 17.36
Our Cramer's V is 17.36.

$\chi^2(3)=276.39$, $p<0.0$, the strength of this association, measured by Cramer's V, is moderate (V = 17.36).

Conclusion: the link is real and not due to chance, and its intensity is significant. Looking at the table, we can see that subjects with a higher level of education tend to have a more positive perception of AI than those with secondary and primary education.

3. Analysis according to place of residence

Place of residence and level of access to technology

Theoretical sample size = (Total for the row) × (Total for the column) / Grand total

Urban - Every day: E = (700×210) / 1600 = 91.87

Rural - Every day: E = (900×210) / 1600 = 118.12

Urban - Often: E = (700×549) / 1600 = 240.18

Rural - Often: E = (900×549) / 1600 = 308.81

Urban - Not often: E = (700×576) / 1600 = 252

Rural - Not often: E = (900×576) / 1600 = 324

Urban - Not at all: E = (700×265) / 1600 = 115.93

Rural - Not at all: E = (900×265) / 1600 = 149.06

∑ = 1599.97

χ2= (Observed number − Theoretical number)2 / ∑Theoretical number

χ2= (1600 − 935)2 / 1599.97 = 276.39
χ2= (1600 − 665)2 / 1599.97 = 546.40

χ2 = 276.39

Degrees of freedom (df): df = (number of rows − 1) × (number of columns − 1)

df = (2−1) × (4−1) = (1) x (3) = 3

Calculated Chi-Square (χ^2) value: 276.39

P-value: 0.001

p-value > 0.05, is there a strong association between place of residence and access to digital technologies?

V = n × min (k−1, r−1) χ2

N = 1600

χ^2 = 276.39

Number of rows r = 2 (Urban, Rural)

Number of columns k=3 (Every day, Often, Not often, Not at all)

min (k−1, r−1):

k−1=3−1=2

r−1=2−1=1

min(2,1)=3

V=1600×3/276.39 = 4800/276.39 = 17.36

Our Cramer's V is 17.36.

$\chi^2(3)$ = 276.39, p<0.05, the strength of this association, measured by Cramer's V, is moderate (V = 17.36).

Conclusion: the link is real and not due to chance, and its intensity is not negligible. Looking at the table, we can see that subjects living in urban areas have a trend toward more regular and stable access to digital technologies than those living in rural areas.

4. Analysis by income level variable

Theoretical workforce = (Total for the row) × (Total for the column) / Grand total

Rich - Every day: E = (210 × 210) / 1,600 = 27.56

Middle class - Every day: E = (504×210) / 1600 = 66.15

Poor - Every day: E = (886 × 210) / 1600 = 116.28

Rich - Often: E = (210×549) / 1600 = 72.05

Average - Often: E = (504×549) / 1600 = 172.93

Poor - Often: E = (886×549) / 1600 = 304.00

Rich - Not often: E = (210×576) / 1600 = 75.6

Average - Not often: E = (504×576) / 1600 = 181.44

Poor - Not often: E = (886×576) / 1600 = 318.96

Rich - Not at all: E = (210×265) / 1600 = 34.78

Average - Not at all: E = (504×265) / 1600 = 83.47

Poor - Not at all: E = (886×265) / 1600 = 146.74

∑ = 1599.96

χ2= (Observed frequency − Theoretical frequency)2 / ∑Theoretical frequency

The chi-square test measures the difference between the observed and theoretical frequencies. The greater the difference, the more likely it is that the variables are related.

χ2= (1600 − 210)2 / 1599.96 = 1207.59

χ2= (1600 − 549)2 / 1599.96 = 690.39

χ2= (1600 − 576)2 / 1599.96 = 655.37

χ^2 = (1600 − 265)² / 1599.96 = 1113.91

χ2 = 1207.59

degree of freedom (df): df=(number of rows−1)×(number of columns−1)

df = (3−1)×(4−1) = (2) x (3) = 6

Interpretation of the p-value:

Calculated Chi-Square (χ^2) value: 1207.59

P-value: 0.001

p-value is > 0.05, the theoretical frequency of each cell is well above 5.

$V=n\times\min(k-1, r-1)\chi 2$

n=1600

$\chi^2 = 1207.59$

Number of rows r = 3 (Rich, Middle class, Poor)

Number of columns k=4 (Every day, Often, Not often, Not at all)

min(k−1,r−1):

k−1=4−1=3

r−1=3−1=2

min(2,1)= 6

V=1600 × 6 /1207.59 = 9600 /1207.59 = 7.94

Our Cramer's V is 7.94.

χ2(6)=1207.59, p<0.05, the strength is moderate (V = 7.94).

The link is real and not due to chance, and it is of significant intensity.

5. Analysis of responses according to age variable

Theoretical sample size = (Total for the row) × (Total for the column) / Grand total

15-24 years old - Every day: E = (535×210) / 1600 = 70.21

25-34 years old - Every day: E = (452×210) / 1600 = 59.32

35–44 years old – Every day: E = (401 × 210) / 1600 = 52.63

45 and over - Every day: E = (212×210) / 1600 = 27.82

15–24 years old – Often: E = (535×549) / 1600 = 183.57

25–34 years old – Often: E = (452×549) / 1600 = 155.09

35–44 years old – Often: E = (401×549) / 1600 = 137.59

45 and over - Often: E = (212×549) / 1600 = 72.74

15–24 years old – Not often: E = (535×576) / 1600 = 192.6

25–34 years old – Not often: E = (452×576) / 1600 = 162.72

35-44 years old - Not often: E = (401×576) / 1600 = 144.36

45 and over - Not often: E = (212×576) / 1600 = 76.32

15–24 years old – Not at all: E = (535×265) / 1600 = 88.60

25–34 years old – Not at all: E = (452×265) / 1600 = 74.86

35-44 years old - Not at all: E = (401×265) / 1600 = 66.41

45 and over - Not at all: E = (212×265) / 1600 = 35.11

∑ = 1599.95

χ2= (Observed number − Theoretical number)2 / ∑Theoretical number

χ2= (1600 − 210)2 / 1599.95 = 1207.60

χ2= (1600 − 549)2 / 1599.95 = 690.39

χ2= (1600 − 576)2 / 1599.95 = 655.38

χ2= (1600 − 265)2 / 1599.95 = 1113.92

χ2 = 1207.60

Degrees of freedom (df): df = (number of rows−1) × (number of columns−1)

df = (4−1) × (4−1) = (3) x (3) = 9

Calculated Chi-Square (χ^2) value: 1207.60

P-value: 0.001

p-value is > 0.05, is there a strong link between age and level of access to digital technologies and use of AI systems? Given that the theoretical sample size for each cell is well above 5.

$V = n \times \min(k-1, r-1) \chi 2$

$n = 1600$

$\chi 2 = 1207.60$

Number of rows r =4 (15-24, 25-34, 35-44, 45-Plus)

Number of columns k=4 (Every day, Often, Not often, Not at all)

$\min(k-1, r-1)$:

$k-1=4-1=3$

$r-1=4-1=3$

$\min(3,3)=9$

$V=1600 \times 9 / 1207.60 = 14400 / 1207.60 = 11.92$

Our Cramer's V is 11.92.

Hence $\chi 2(9) = 1207.60$, $p<0.05$, the strength of this association, measured by Cramer's V, is moderate (V = 11.92) and the link is real and not due to chance.

6. Analysis according to occupation variable

Theoretical number = (Total for the row) × (Total for the column) / Grand total

Students - Every day: E = (461×210) / 1600 = 60.50

Employees - Every day: E = (511×210) / 1600 = 67.06

Self-employed - Every day: S = (347×210) / 1600 = 45.54

Unemployed - Every day: E = (281×210) / 1600 = 36.88

Students - Often: E = (461×549) / 1600 = 158.18

Employees - Often: E = (511×549) / 1600 = 175.33

Self-employed - Often: E = (347×549) / 1600 = 119.06

Unemployed - Often: E = (281×549) / 1600 = 96.41

Students - Not often: E = (461×576) / 1600 = 165.96

Employees - Not often: E = (511×576) / 1600 = 183.96

Self-employed - Not often: E = (347×576) / 1600 = 124.92

Unemployed - Not often: E = (281×576) / 1600 = 101.16

Students - Not at all: E = (461×265) / 1600 = 76.35

Employees - Not at all: E = (511×265) / 1600 = 84.63

Self-employed - Not at all: E = (347×265) / 1600 = 57.47

Unemployed - Not at all: E = (281×265) / 1600 = 46.54

∑ = 1599.95

χ2= (Observed number – Theoretical number)2 / ∑Theoretical number

The chi-square test measures the difference between the observed and theoretical numbers.

χ2= (1600 − 210)2 / 1599.95 = 1207.60

χ2= (1600 − 549)2 / 1599.95 = 690.39

χ2= (1600 − 576)2 / 1599.95 = 655.38

χ2= (1600 − 265)2 / 1599.95 = 1113.92

Degrees of freedom (df): df=(number of rows−1)×(number of columns−1)

df = (4 − 1) × (4 − 1) = (3) × (3) = 9

Calculated Chi-Square (χ^2) value: 1207.60

P-value: 0.001

V=n×min(k−1,r−1)χ2

n=1600

χ2 = 1207.60

Number of rows r = 4 (Students, Employees, Self-employed, Unemployed)

Number of columns k= 4 (Every day, Often, Not often, Not at all)

min(k−1,r−1):

k−1=4−1=3

r−1=4−1=3

min(2,1) = 9

V=1600 × 9 /1207.60 = 14400 /1207.60 = 11.92

Our Cramer's V is 11.92.

There is a statistically significant association between occupation and level of access to digital technologies ($\chi 2(9) = 1207.60$, $p<0.05$) and the strength of this association, measured by Cramer's V, is moderate (V = 11.92). In conclusion, the link is real and not due to chance.