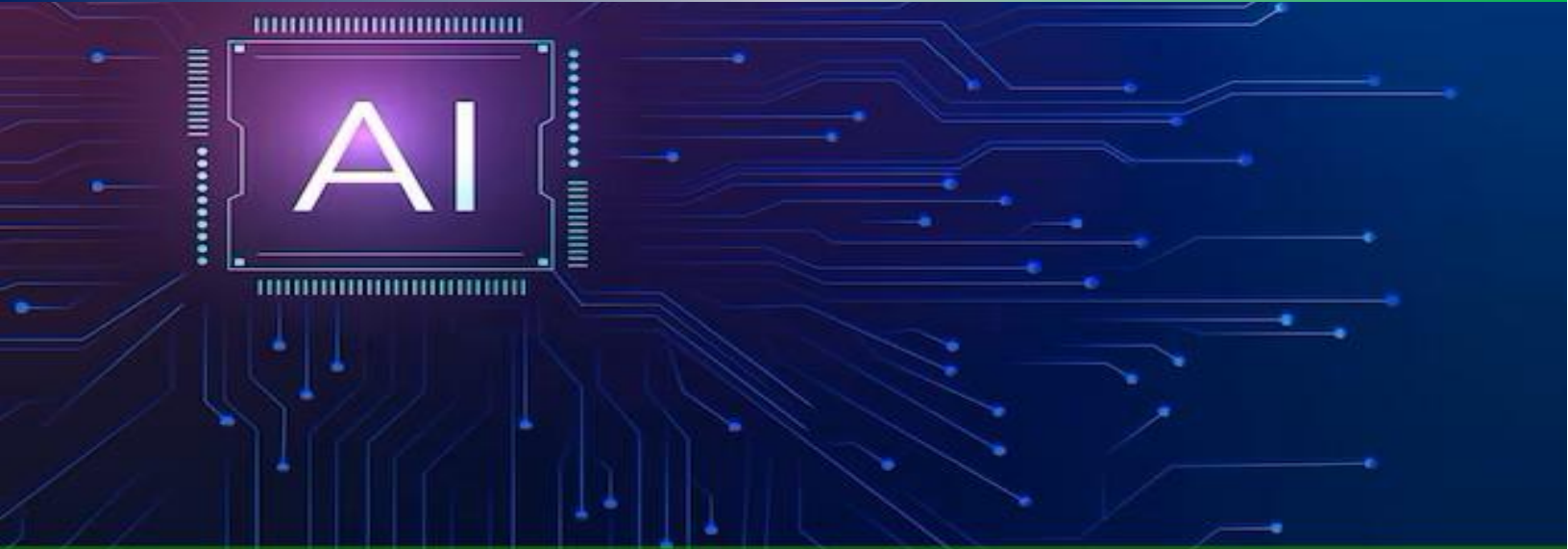# Research Insights & Recommendations

BRIDGING THE DIGITAL DIVIDE:
EMPOWERING WOMEN & GIRLS IN AFRICA THROUGH DIGITAL LITERACY AND AI EDUCATION

ImpactHER
Empowering the New African Female Entrepreneur

African Union International Center for Girls & Women's Education in Africa

JULY 2024

Preface

ImpactHER, committed to elevating African women by addressing the finance, business, and digital gender gaps, understands the crucial role of diminishing the digital divide in propelling Africa's growth. With targeted training programs, ImpactHER has trained and directly supported **139,046** African women and specifically trained **53,544** in essential digital and AI skills, fostering their economic empowerment and success in entrepreneurship. This endeavor resonates with a broader ambition: to secure a place for African women at the forefront of the digital age, not as bystanders but as leaders and innovators.

Building on this foundation, **ImpactHER** has collaborated with the **African Union International Center for Girls and Women's Education in Africa (African Union CIEFFA)** aimed at closing the gender digital divide. This collaboration underscores a shared commitment to leveraging both organizations' strengths and resources to enhance digital literacy and AI education among women and girls across Africa.

One of the core mandates of the African Union International Center for Girls and Women's Education in Africa (African Union CIEFFA) is to ensure that girls and women take interest and have access to Science, Technology, Engineering, Arts, and Mathematics (STEAM) education. This work is entrenched in Agenda 2063; goal 2 of Aspiration 1, which speaks to "Well-educated citizens and skills revolutions underpinned by science, technology, and innovation for developing Africa's human and social capital (through education and skills revolution emphasizing science and technology)." The 3rd axis of the African Union CIEFFA's Strategic Plan (2021-2025) focuses on STEAM and skills development for girls and women. STEAM is an unparalleled medium for communicating and disseminating information in its various components, such as audiovisual arts, textbooks, and handicrafts. If delivered as educational programs, it can strengthen past and present intergenerational dialogue and strengthen positive beliefs, memory, and identity to build Africa for tomorrow.

Moreover, it is no news that Artificial Intelligence (AI) is already replacing humans in the tasks that used to require academic knowledge. Human traits like imagination, creativity, entrepreneurship, and empathy will soon become key skills. The African Union CIEFFA recognizes the need to get more girls to engage in STEAM fields to better leverage their potential and adequately prepare to become useful in an age governed by AI.

In the same line of thought, the African Union CIEFFA-led advocacy campaign, #AfricaEducatesHer, underpins the need for all stakeholders to pay attention to all girls and women, especially the most vulnerable, in its 2nd thematic area. This report is therefore timely as it exposes the loopholes and divide between girls and women in rural areas and those in urban areas. The campaign advocates for, amongst other things, prompt action from governments to close the learning gap for all girls, especially in the most remote areas.

It is recommended that governments, development partners, international organizations, NGOs, CSOs, and grassroots leaders implement the recommendations contained in this report to achieve equity and equality in the digital sector for all girls and women.

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Executive Summary

This paper presents a study conducted by ImpactHER, aimed at dissecting the digital and AI literacy landscape for women and girls across Africa. Drawing from a comprehensive survey of over 4,000 participants from 52 African countries, this report uncovers significant disparities in digital access, device ownership, digital skills training, and AI proficiency. This executive summary not only highlights the study's primary findings and methodology but also delineates strategic recommendations for bridging these critical gaps.

Respondents Geographical Distribution

- Algeria
- Angola
- Benin
- Botswana
- Burkina Faso
- Burundi
- Cameroon
- Comoros
- Cape Verde
- Côte d'Ivoire
- Democratic Republic of Congo
- Djibouti
- Egypt
- Equatorial Guinea
- Eritrea
- Ethiopia
- Gabon
- Gambia
- Ghana

- Guinea-Bissau
- Guinea-Conakry
- Kenya
- Lesotho
- Liberia
- Libya
- Madagascar
- Malawi
- Mali
- Mauritania
- Mauritius
- Morocco
- Mozambique
- Namibia
- Niger
- Nigeria
- Republic of Congo
- Rwanda
- Sao Tome and Principe
- Senegal
- Seychelles
- Sierra Leone

- Somalia
- South Africa
- South Sudan
- Swaziland
- Tanzania
- Tchad
- Togo
- Tunisia
- Uganda
- Zambia
- Zimbabwe

■ Countries with respondents

■ Countries with no respondents

Source: ImpactHER Survey Analysis Report on Digital and AI Skills. Over 4,000 Women and Girls Responded from 52 African Countries.

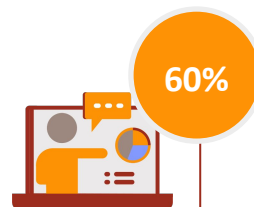African Union International Center for Girls & Women's Education in Africa

Employing a mixed-methods approach, this study integrates quantitative surveys with qualitative interviews, capturing a broad spectrum of experiences and challenges faced by women and girls in Africa's digital domain. The survey specifically targeted a diverse demographic to ensure representation from both urban and rural areas, facilitating a nuanced understanding of the digital divide. Subsequent data analysis pinpointed key barriers to digital and AI literacy, forming the basis for our targeted intervention strategies.

The key findings are:

Digital Access Disparity

A pronounced divide in internet access exists between urban and rural areas, with rural communities significantly underserved.

34.7%

No Digital Device

34.7% of respondents reported that they do not own a flash phone, smartphone, or any form of digital device, with 15.7% of urban respondents versus 84.3% of rural respondents reporting no digital device ownership, highlighting a substantial urban-rural ownership gap.
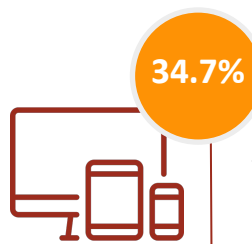
60%

No Digital Skills Training

A stark 60% of the women and girls respondents have not received any form of digital skills training, indicating a profound digital skills deficit.
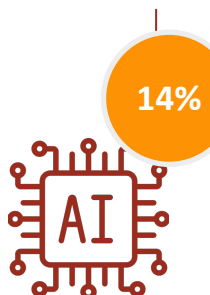
14%

Have AI Skills

Only 14% of women and girls reported that they had some level of AI skills with only 5% ranking their skills as excellent or very good. 86% reported that they do not have AI skills. Only 39.8% had even heard about AI tools.

Barriers to Education

Economic challenges, informational gaps, and cultural norms emerge as barriers to digital and AI education access.

In conclusion, this paper proposes a phased strategy encompassing immediate, intermediate, and long-term initiatives, engaging governmental agencies, NGOs, educational institutions, and the private sector. The recommendations aim to improve digital infrastructure, enhance device accessibility, broaden digital and AI education programs, and cultivate an inclusive educational environment. This strategy challenges existing societal norms and gender stereotypes to ensure equitable participation in the digital realm.

This paper underscores the urgent need for a collaborative approach to equip women and girls in Africa with the necessary tools and skills to navigate and thrive in the digital age. Fostering partnerships and implementing targeted actions lay the foundation for a digitally inclusive future, empowering African women and girls to fully engage in and benefit from the digital economy.

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Abbreviations and Acronyms

AI   Artificial Intelligence

NGOs   Non-Governmental Organizations

STEM   Science, Technology, Engineering and Mathematics

STEAM   Science, Technology, Engineering, Arts and Mathematics

CSOs   Civil Society Organizations

AU/CIEFFA African Union International Center for Girls' and Women's Education in Africa

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Research Insights & Recommendations: Background

Africa is experiencing a digital revolution, fueled by rapid advancements in the digital economy, widespread Internet penetration, and the emergence of cutting-edge technologies, including Artificial Intelligence (AI). The mobile industry, in particular, has played a critical role in this shift, granting millions across the continent access to online services, digital finance and platforms for knowledge exchange. Yet, despite these promising developments, the fruits of the digital age are not evenly distributed, revealing a stark gender gap that underscores a critical challenge.

In Africa, a significant digital divide persists, disproportionately affecting women and girls. The gender digital divide in Africa is a complex, multifaceted phenomenon. For example, data from the International Telecommunication Union reveals that women in Africa are significantly less likely than men to own a mobile phone and to use the internet, with a digital access gender gap of 37% exacerbating these disparities. This divide is further deepened in AI-based education, where women, especially those in rural areas, find themselves at a disadvantage due to socio-cultural norms, economic barriers and limited access to necessary digital infrastructure. As a result, their participation in the digital economy is markedly restricted, curtailing the potential for growth and innovation. This divide is not just about connectivity; it's about access, skills, and the ability to leverage technology for personal and economic growth.

Recognizing the need for a deeper understanding of these challenges, ImpactHER conducted a comprehensive survey, gathering insights from over 4,000 women business owners and girls across 52 African countries.

Notably, the survey had significant participation from both urban and rural areas residents, with 56% of respondents residing in Africa's rural regions and 44% in urban settings.

Women and girls that completed the survey reside in: Algeria, Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Comoros, Cape Verde, Côte d'Ivoire, Democratic Republic of Congo, Djibouti, Egypt, Equatorial Guinea, Eritrea, Ethiopia, Gabon, Gambia, Ghana, Guinea-Bissau, Guinea-Conakry, Kenya, Lesotho, Liberia, Libya, Madagascar, Malawi, Mali, Mauritania, Mauritius, Morocco, Mozambique, Namibia, Niger, Nigeria, Republic of Congo, Rwanda, Sao Tome and Principe, Senegal, Seychelles, Sierra Leone, Somalia, South Africa, South Sudan, Swaziland, Tanzania, Tchad, Togo, Tunisia, Uganda, Zambia, Zimbabwe.

Percentage of Survey Respondents in Rural vs urban Areas
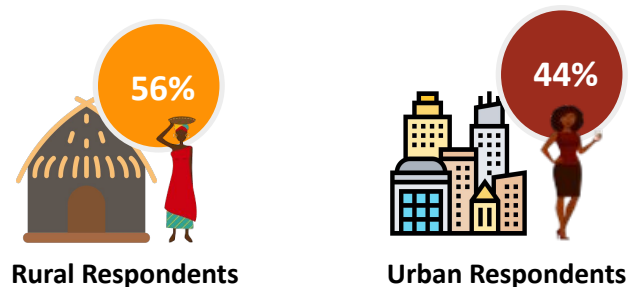
56%

44%

Rural Respondents   **Urban Respondents**

Source: ImpactHER Survey Analysis Report on Digital and AI Skills. Over 4,000 Women and Girls Responded from 52 African Countries.

This diverse participation is crucial, as it sheds light on the unique barriers faced by women in rural areas, who are often the most marginalized in terms of digital access and literacy. The substantial rural response underscores the importance of addressing digital inclusivity not just in densely populated cities but across all landscapes of Africa.

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It highlights the urgent need for targeted solutions that cater to the distinct challenges encountered in rural settings, ensuring that the drive towards digital empowerment is inclusive and comprehensive, leaving no one behind.

The implications of bridging this digital divide are profound. Enhanced digital literacy and access to AI education can empower African women like never before, opening doors to information, services, and opportunities previously out of reach. Beyond individual empowerment, this leap forward holds the promise of stimulating entrepreneurship, expanding employment prospects, and driving economic growth, while contributing to the broader goals of gender equality and social progress.

Recognizing the critical need for interventions that specifically target the challenges and barriers identified, this paper proposes a structured, timeline-based action plan.

This plan calls for the collaboration of governmental bodies, non-governmental organizations, educational institutions, the private sector, and community leaders to implement strategic recommendations aimed at creating an inclusive, equitable digital landscape. It is through this collective effort that the full potential of the digital revolution can be harnessed for the empowerment of women and girls across Africa, ensuring they are not only participants but also leaders in the digital age.

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Part I

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**Unveiling the Digital Divide: Access,
Devices and Skills**

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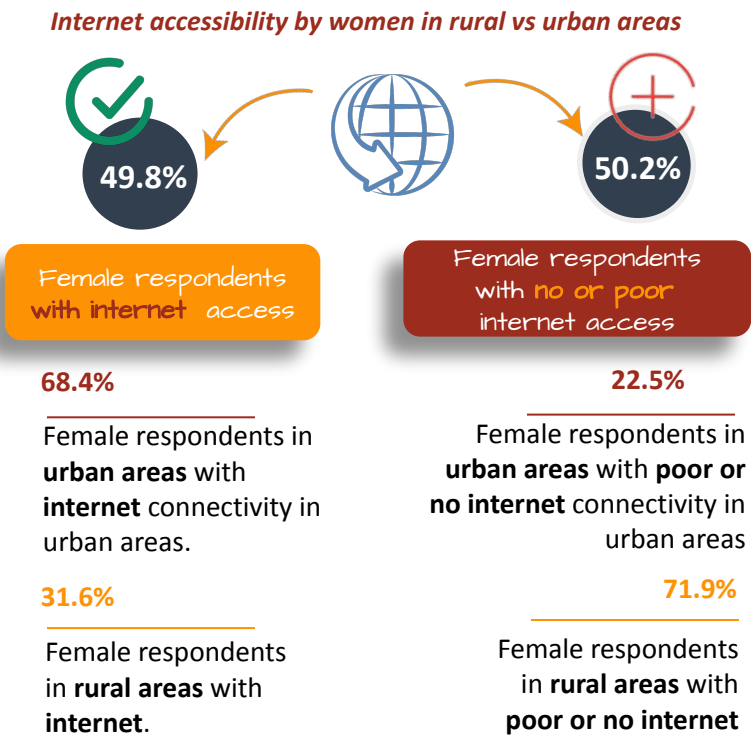# A. Disparities in Connectivity: Rural vs. Urban Divide

The ImpactHER survey, **engaging over 4,000 female respondents across 52 African countries**, unveils the intricate landscape of digital access. **49.8%** of the over 4,000 respondents have some form of internet access, ranging from limited to full access. However, a deeper analysis reveals a pronounced divide; among the **49.8%** women with some form of internet access, **68.4%** reside in urban areas, enjoying relatively higher levels of connectivity, compared to only **31.6%** in rural regions. This disparity not only highlights differences in personal internet access but also significantly affects the operations of businesses. In urban settings, **71.5%** of formal businesses boast of internet connectivity, a luxury unavailable to **28.5%** of their rural counterparts. The chasm is even more pronounced among informal business owners in rural settings, where only a quarter have access to the internet.

The survey reveals that the top three reasons for internet inaccessibility among those who do not have access include high costs of internet **(47.3%),** lack of internet use skills **(18.7%),** and inadequate internet infrastructure **(15.7%)**. These barriers are not isolated but are intertwined with a general lack of awareness about the internet's potential benefits and insufficient access to digital devices, intensifying the urgency for targeted interventions.

Such disparities and underlying reasons for limited digital access illuminate a pressing challenge in narrowing the gender digital divide across the continent. The necessity for targeted interventions to enhance digital inclusivity in rural areas is underscored by the prohibitive costs that bar a significant portion of the population from accessing the internet.

This economic barrier, coupled with a lack of skills and inadequate infrastructure, reflects broader socio-economic implications, indicating that without strategic efforts to address these multifaceted challenges, women and girls in rural areas remain significantly deprived of opportunities for learning, entrepreneurship, and economic growth promised by the digital age.

The digital divide not only represents a gap in access but also acts as a barrier to the economic gains and social inclusion dividends of internet connectivity. In urban areas, where connectivity is relatively high, opportunities for education, entrepreneurship, and growth abound. Conversely, in rural regions, limited access stifles potentials, reinforcing cycles of poverty and limiting participation in the digital economy.

Internet accessibility by women in rural vs urban areas

49.8% — Female respondents with internet access

50.2% — Female respondents with no or poor internet access

68.4%
Female respondents in **urban areas** with **internet** connectivity in urban areas.

22.5%
Female respondents in **urban areas** with **poor or no internet** connectivity in urban areas

31.6%
Female respondents in **rural areas** with **internet**.

71.9%
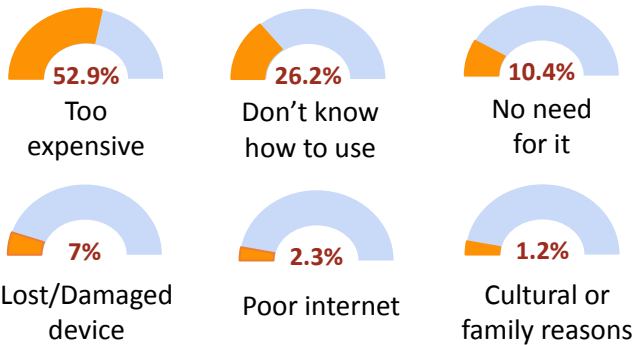Female respondents in **rural areas** with **poor or no internet**

Source: ImpactHER Survey Analysis Report on Digital and AI Skills. Over 4,000 Women and Girls Responded from 52 African Countries.

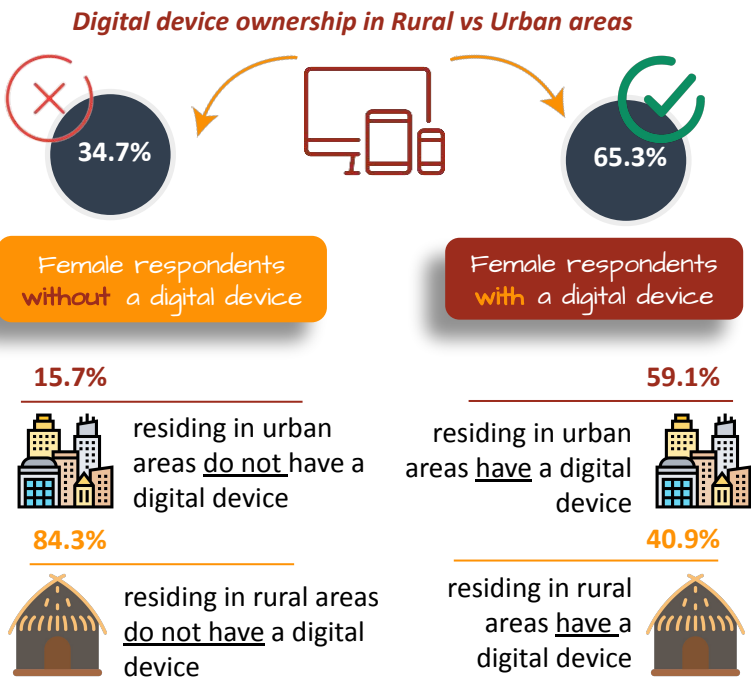# B. Device Ownership Divide: Urban Prosperity vs. Rural Scarcity

Ownership of a digital device is critical for internet access and a prerequisite for developing digital skills, essential for thriving in the interconnected tapestry of today's digital epoch. Among the over 4,000 women and girls surveyed, only **65.3%** reported ownership of any form of digital device, which encompasses not just smartphones but also basic flash phones. Nestled within this overarching narrative, a pronounced disparity exists between urban and rural respondents. Of those who do possess a device, an overwhelming **59.1%** live in urban centers, presenting a stark contrast to a mere **40.9%** in rural areas. This chasm widens further when considering that, in urban locales, only a scant **15.7%** lack a digital device, as opposed to a significant **84.3%** in rural communities confronting this reality. This statistic starkly underscores the divide in digital access, delineating a landscape where a significant portion of the population remains on the periphery of the digital revolution.

Of the **34.7%** of respondents who do not own any form of digital device, **52.9%** identified the prohibitive cost of acquiring such technology as the leading obstacle, highlighting the economic challenges associated with digital engagement.

Additionally, **26.2%** of respondents admit to a deficiency in the skills necessary for device utilization, emphasizing a significant gap in digital literacy and education. Other factors contributing to the divide, with a cumulative percentage of **20.9%** attribute their lack of technology device to a constellation of lesser, yet impactful, factors: a perceived lack of necessity, cultural or family reasons, and the prioritization of other essentials.

Reasons for Non-Possession of Digital Devices

52.9% Too expensive	**26.2%** Don't know how to use	**10.4%** No need for it
7% Lost/Damaged device	**2.3%** Poor internet	**1.2%** Cultural or family reasons

Source: ImpactHER Survey Analysis Report on Digital and AI Skills. Over 4,000 Women and Girls Responded from 52 African Countries.

Digital device ownership in Rural vs Urban areas

34.7% — Female respondents **without** a digital device

65.3% — Female respondents **with** a digital device

15.7% residing in urban areas <u>do not</u> have a digital device

84.3% residing in rural areas <u>do not have</u> a digital device

59.1% residing in urban areas <u>have</u> a digital device

40.9% residing in rural areas <u>have</u> a digital device

Source: ImpactHER Survey Analysis Report on Digital and AI Skills. Over 4,000 Women and Girls Responded from 52 African Countries.

> "We need to empower women in *accessing resources* that provide knowledge about digital literacy and AI education."
> **U.M. from Rwanda**
> **A survey respondent**

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This accumulation of these reasons paint a vivid picture of the digital divide, woven from a fabric of not only economic and educational strands but also nuanced by personal, infrastructural, and perceptual challenges, emphasizing the intricate and multifaceted barriers that underscore the need for a comprehensive approach to fostering digital inclusivity.

This scenario underscores the importance of a comprehensive approach to foster digital inclusivity, ensuring equitable access and participation for all, thereby bridging the gaps that exacerbate the digital divide.

The critical function of technology in accessing essential online resources, educational materials, and broader economic opportunities transforms it from a mere tool into a catalyst for empowerment and active engagement in the global digital narrative. Ownership of digital devices is more than a matter of convenience; it is a gateway to the digital world. Urban dwellers enjoy comparatively higher ownership rates, facilitating access to information, markets, and services.

In rural areas, the scarcity of devices hampers not only individual progress but also community development, perpetuating a divide that hinders the collective potential of these communities.

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C. Digital Skills Gap and Barriers to Education

Digital skills further delineate the contours of digital exclusion, accentuating the barriers previously discussed. Remarkably, only **40%** of the over 4000 women respondents reported having attended any form of digital skills training, thus **60%** indicated they had never attended such training, highlighting a significant gap in digital education outreach and availability. Additionally, **57%** of female respondents, encapsulating over 2,000 individuals, rated their digital skills as poor or very poor.
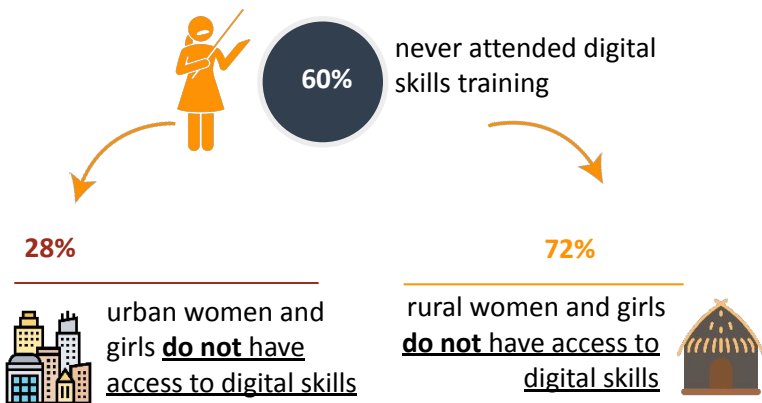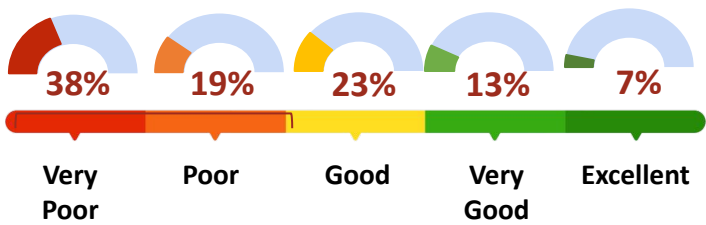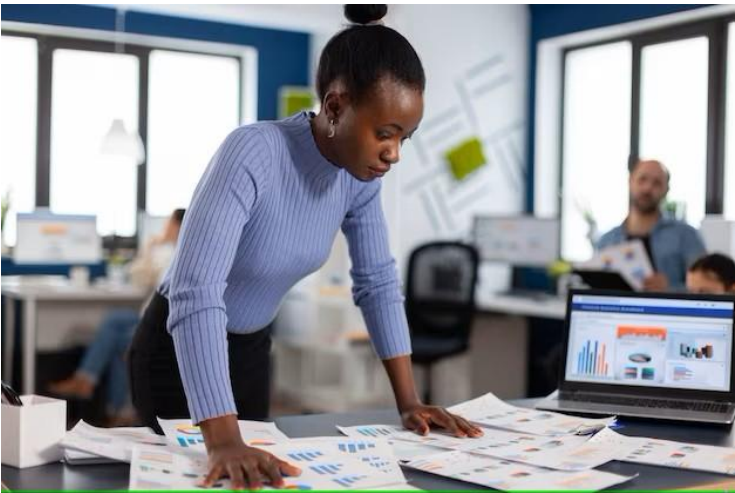
Furthermore, the dichotomy in digital skills access underscores a pronounced urban-rural disparity. An alarming **72%** of women and girls' respondents living in rural areas indicated they had never had access to digital skills training, in stark contrast to **28%** in urban settings. This discrepancy not only demands targeted interventions but also calls for a nuanced approach to democratize digital education across diverse geographies.

Respondents identified a range of barriers impeding access to digital training, with **27%** citing financial constraints as a significant hurdle, and **25.5%** pointing to the scarcity of training opportunities. Time constraints deterred **24.4%** of potential learners, **8.8%** of respondents reported incomplete education or illiteracy as an obstacle, a notable **8%** expressed a general disinterest in digital training, **6.3%** faced cultural or familial reservations or still, consider digital training is predominantly suitable for boys.

Access to Digital Skills Training

60% never attended digital skills training

28% urban women and girls **do not** have access to digital skills

72% rural women and girls **do not** have access to digital skills

Digital Skills Proficiency Assessment

38%	19%	23%	13%	7%
Very Poor	Poor	Good	Very Good	Excellent

Source: ImpactHER Survey Analysis Report on Digital and AI Skills. Over 4,000 Women and Girls Responded from 52 African Countries.

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Reasons for Lack of Access to Digital Skills

27%
Too expensive

25.5%
Lack of access to training opportunities

24.4%
Lack of time, work commitment, family

8.8%
Education & age related barriers

8%
Lack of interest

6.3%
Cultural/ family reason & more suitable for boys

Source: ImpactHER Survey Analysis Report on Digital and AI Skills. Over 4,000 Women and Girls Responded from 52 African Countries.

These hurdles collectively create a complex tableau of impediments to digital literacy, underscoring the urgent need for a holistic and inclusive approach to dismantle these barriers and foster an environment conducive to digital empowerment.

The survey also unveiled that information asymmetry profoundly impacts women and girls' access to digital skills. 35% of respondents reported not understanding the tangible benefits that digital skills could off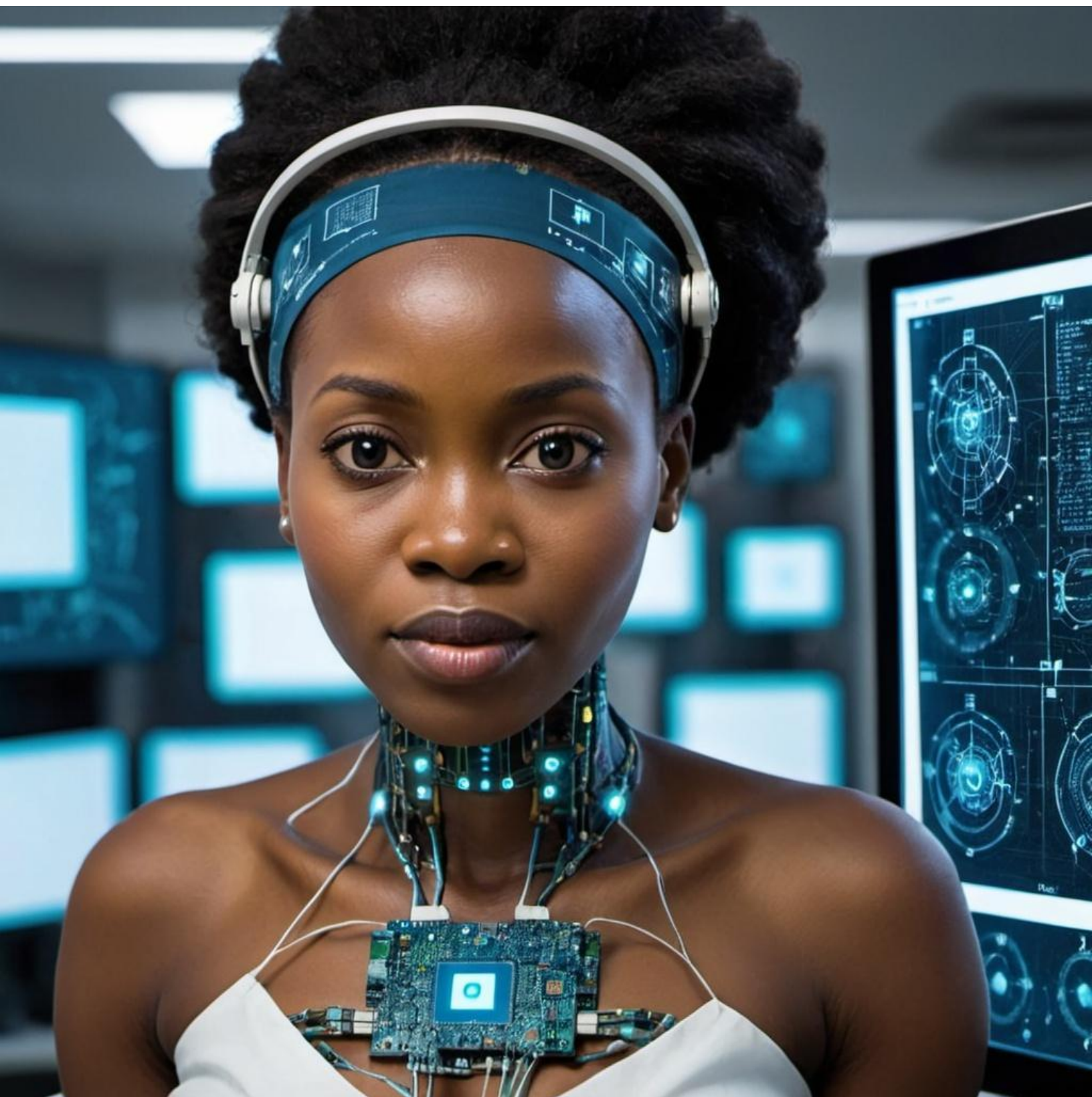er, a revelation that highlights the urgent need for enhanced clarity and communication around the practical advantages of digital empowerment.

This knowledge gap represents a critical impediment, as awareness of the potential impact of digital literacy is fundamental to motivating engagement and investment in learning.

Against this backdrop, it is evident that bridging the digital skills gap in Africa requires more than merely providing access to training; it necessitates a strategic, holistic approach that addresses economic, educational, and infrastructural challenges. Moreover, fostering an environment where the value and application of digital skills are clearly communicated and understood is crucial.

Through concerted efforts to address both the tangible and perceptual barriers to digital skills acquisition, a pathway to digital inclusivity can be forged, empowering women and girls across Africa to fully engage and thrive in the digital landscape.

The absence of digital skills among a significant portion of women and girls represents a missed opportunity for personal development and societal advancement. Training programs focused on these skills can transform lives, offering pathways to better education, improved business outcomes, and greater societal participation. However, the prevailing lack of access to such training, especially in rural areas, and the myriad barriers faced by learners, from financial constraints to cultural biases, not only diminish individual potential but also weaken the socio-economic fabric of communities and the continent at large.

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Part II

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Artificial Intelligence Empowerment Divide: Unlocking Potential Across Africa

A. AI Familiarity: A Rare Commodity for Women and Girls

Artificial intelligence (AI) holds promise to revolutionize various sectors across the world, offering unprecedented opportunities for innovation, efficiency, and economic growth. Yet, in Africa, this potential flickers dimly for a considerable population of women and girls. The survey results which details their engagement with AI reveal a profound disconnect, marking a significant impediment to their active participation in the burgeoning digital economy and the wider technological vanguard. This section delves into the complex web of obstacles hindering AI literacy and skill development among African women and girls, spanning economic, educational, cultural, and infrastructural challenges.

"Empower women in accessing resources that provide knowledge about digital literacy and AI education."

U.M from Rwanda
A survey respondent

The survey results unveil a concerning landscape; a mere **39.8%** of the respondents have heard about AI tools, leaving a significant **60.2%** in the dark about AI. This awareness gap, coupled with the finding that **86%** of those aware possess poor or very poor AI proficiency, underscores the urgent need for foundational AI education. The disparity between AI's potential and the current level of skills among women and girls in Africa is notable, with only **14%** of all respondents claiming a competency level of at least good, highlighting an urgent call for accelerating AI education for women and girls in Africa.

Respondents' Awareness of Artificial Intelligence

39.8%
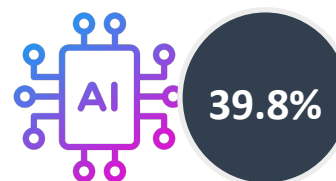
Heard about artificial intelligence

Respondents' Skillset on AI Usage
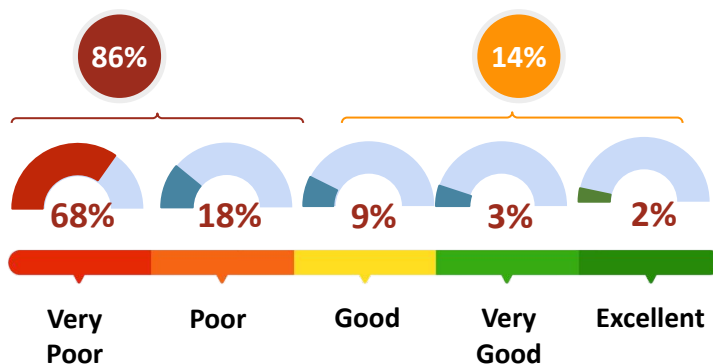
86%   14%

68%   18%   9%   3%   2%

Very Poor / Poor / Good / Very Good / Excellent

Source: ImpactHER Survey Analysis Report on Digital and AI Skills. Over 4,000 Women and Girls Responded from 52 African Countries.

The implications of this data are profound. Without concerted efforts to bridge this gap, Africa risks widening the digital divide, not just within its own borders, but also on a global scale compared to Western countries where AI literacy and proficiency are increasingly becoming part of mainstream education and workforce development.

This discrepancy threatens to leave Africa behind in the rapidly evolving digital economy, potentially exacerbating existing inequalities and hampering the continent's economic growth and social progress. Moreover, the lag in AI education for women and girls particularly undermines gender equality in the digital age, limiting their opportunities for empowerment, entrepreneurship and employment in high-growth sectors of the future.

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> *"If the government sends people here [rural area] to talk to us and teach us these things, I know we will understand and more women, especially the young ones wouldn't end up like us."*
>
> **L.E from Uganda**
> **A survey respondent**

In contrast, Western countries are making significant strides in integrating AI into educational curricula and creating inclusive pathways for women in tech. However, addressing this gap is not just about catching up; it is about seizing the transformative potential of AI to drive innovation, promote efficiency, and inclusive economic growth across Africa.

B. Desire vs. Access: AI Skills Development

"Provide quality training for women, break down certain stereotypes, provide access to IT tools for good practice."

S.H from Benin Republic

A survey respondent

Despite the significant challenges that obstruct access to AI training and education in Africa, there is a silver lining: a substantial **79%** of respondents express an interest in acquiring AI skills. This enthusiasm highlights the recognition of AI's potential benefits and a willingness to overcome the barriers to accessing AI education and training. Yet, an overwhelming majority in both urban **(92%)** and rural **(97%)** settings lack any AI education. This gap underscores a critical need for initiatives aimed at democratizing AI learning and ensuring equitable access for all.

The consequences of this divide extend beyond individual opportunities for education and employment; they bear significant implications for Africa's ability to participate fully in the global economy. As AI and related technologies drive innovation and growth in various sectors, the lack of AI literacy and skills among a significant portion of the population could hinder the continent's competitiveness and its capacity to address local challenges through technology. Without concerted efforts to bridge this skills gap, women and girls in Africa may find themselves increasingly side-lined in the digital age, unable to leverage AI for entrepreneurship, social advancement, and personal development.

The stakes are high; failing to act decisively could see Africa fall further behind in the global digital race, exacerbating socio-economic disparities. Conversely, harnessing the continent's full potential by enabling widespread access to AI education can catalyze transformative growth, innovation, and empowerment, securing a brighter, more inclusive future for Africa on the world stage.

Respondents' Access to AI Training in Rural vs Urban Areas
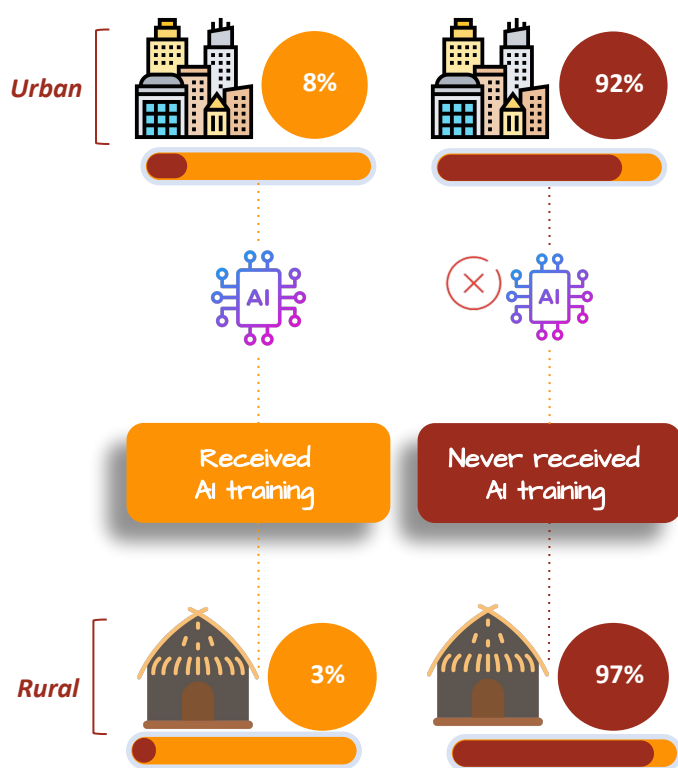
Urban — 8% / 92%

Received AI training | Never received AI training

Rural — 3% / 97%

Source: ImpactHER Survey Analysis Report on Digital and AI Skills. Over 4,000 Women and Girls Responded from 52 African Countries.

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C.   Financial Hurdles: Widening the AI Skills Gender Gap

The prohibitive cost of AI training stands out as the primary barrier, with **46%** of respondents identifying financial limitations as a major obstacle, particularly affecting those from lower-income backgrounds. This financial impediment does more than just restrict individual access; it threatens to widen the socioeconomic divide, potentially side-lining Africa in the rapidly advancing AI landscape. As the world moves towards a more AI-integrated economy, the lack of affordable AI education in Africa could hinder the continent's ability to harness these technologies for development, innovation, and competitive advantage on the global stage.

Addressing this economic barrier is not just about creating equitable access to AI education; it is about ensuring Africa's vibrant potential is not left untapped, allowing the continent to fully engage in and benefit from the AI revolution. Without intervention, the gap between Africa and countries where AI education is more accessible could expand, exacerbating disparities and diminishing the continent's voice and agency in shaping the future of technology.

"Giving several opportunities to women, whether through training, financial assistance, and the inclusion of women in almost all areas of activity."

S.I from Benin Republic
A survey respondent

D.   Navigating the Fog: AI Training Information Abyss

21% of the respondents encounter a different kind of barrier: an information gap. This lack of critical information on how to access AI training programs points to an urgent need for enhanced awareness and outreach efforts. The absence of awareness and accessibility to AI training resources exacerbates the gender divide in technology and restricts the continent's potential for innovation and economic diversification. It hampers the development of a skilled workforce capable of driving technological advancement and addressing local and global challenges through AI.

As such, closing this information gap is not merely an educational imperative but a strategic necessity for Africa's sustainable development and competitive positioning in the technology-led future.

Time constraints further complicate the pursuit of AI literacy for **12%** of respondents, reflecting the broader societal pressures of workload, household responsibilities, and priorities that disproportionately affect women, hinting at deeper structural inequities.

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E. Educational and Cultural Barriers: Beyond Technology

''*Personally, I knew Artificial Intelligence was only for men, but since women can also take part, then the mentality put in women that Artificial Intelligence is only for men should be dealt with.*''
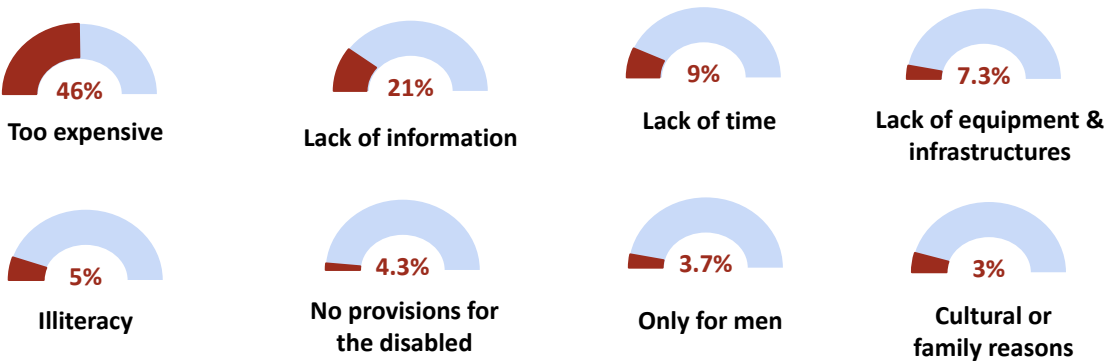
M.A from Kenya
A survey respondent

9% percent of respondents pinpoint the illiteracy challenge as a critical barrier that extends beyond the digital divide, emphasizing foundational educational gaps that must be bridged to unlock AI training opportunities.

Also, cultural and family barriers surface, spotlighting societal norms and expectations that potentially deter women and girls from pursuing technology education.

Some respondents noted that AI is predominantly for men. The respondents' perception also stresses the need for initiatives that promote inclusivity and challenge these outdated views.

Moreover, addressing the lack of necessary equipment and infrastructure alongside ensuring the inclusivity of AI training for individuals with disabilities remains paramount. Investments must extend into both physical and digital realms to make AI education universally accessible and designed to meet diverse needs. This approach is critical in effectively narrowing the AI literacy gap and ensuring that Africa's journey toward technological empowerment includes everyone.

Barriers/Challenges Accessing AI Training by Female Respondents

46% Too expensive	21% Lack of information	9% Lack of time	7.3% Lack of equipment & infrastructures
5% Illiteracy	4.3% No provisions for the disabled	3.7% Only for men	3% Cultural or family reasons

Source: ImpactHER Survey Analysis Report on Digital and AI Skills.
Over 4,000 Women and Girls Responded from 52 African Countries.

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Part III

Gender-Based Discrimination is an Impediment

Gender-Based Discrimination is an Impediment

A critical barrier to achieving gender equality in digital literacy and AI education in Africa is gender-based discrimination. According to the survey conducted by ImpactHER, a significant **30%** of respondents reported experiencing some form of gender-based discrimination when attempting to access digital skills and AI training programs.

1 in 3 women experience discrimination

Source: ImpactHER Survey Analysis Report on Digital and AI Skills. Over 4,000 Women and Girls Responded from 52 African Countries.

The discrimination reported by women and girls spans a range of experiences, from overt exclusion from training opportunities to subtler forms of bias, such as being underestimated, overlooked, or not taken seriously by peers and instructors.

Such experiences not only hinder their ability to participate in these training programs but also impact their confidence and motivation to pursue careers in technology fields.

This issue is further compounded in environments where stereotypes about women's roles and abilities in STEM (Science, Technology, Engineering, and Mathematics) persist, creating additional psychological barriers to entry and success.

However, gender-based discrimination poses a significant threat to the goal of creating an inclusive digital economy. It undermines efforts to close the gender digital divide and limits the potential for harnessing the full range of talents and perspectives needed to drive innovation and growth in the digital and AI sectors. Furthermore, it perpetuates a cycle of exclusion, where the underrepresentation of women in these fields is both a cause and effect of discriminatory practices.

"My husband does not permit me to get digital skills trainings."
A.E. from Nigeria
A survey respondent

"Women are not given access to technological and digital training."
D.R. Guinea-Conakry
A survey respondent

"We are judged due to our gender, we shouldn't. Everyone is equal."
A. A from Benin Republic
A survey respondent

"In my community, women are not allowed to participate in digital skills training"
S.M. from Kenya
A survey respondent

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Part IV

Recommendations on Enhancing Digital Literacy and AI Education for Women and Girls

A. Respondents' Recommendations

In response to the pressing need for improved digital literacy and AI education among women and girls in Africa, respondents provided valuable insights into potential solutions. Their suggestions underscore the importance of targeted interventions and support systems to bridge the digital and AI literacy gap. The women and girls who responded to the survey opined:

1. Scholarships for Women (31.5%):

31.5% of respondents highlighted the need for scholarships specifically designed for women. These scholarships would provide financial assistance, enabling more women and girls to access digital literacy and AI education programs without the burden of cost. Such scholarships could cover a range of educational opportunities, from online courses to degree programs in digital/AI skills-related fields.

2. Direct Literacy Programs for Women (28.9%)

Nearly a third of the respondents advocated for the implementation of direct literacy programs tailored for women. These programs would focus on basic and advanced digital skills, ensuring that women from all backgrounds have the foundational knowledge needed to navigate and thrive in the digital world. Emphasizing user-friendly and accessible teaching methods can make technology more approachable and less intimidating.

3. Education on Digital Transformation (16.9%):

16.9% of respondents also emphasized the importance of educating women and girls on digital transformation and its implications for society and the economy. Understanding the broader context of digital technology's role can inspire and motivate more women to engage in digital literacy and AI education, highlighting potential career paths and entrepreneurial opportunities.

4. Practice-Based Trainings (13.2%)

13.2% of respondents suggested that practice-based training programs could help women and girls apply theoretical knowledge in real-world scenarios, enhancing their skills more effectively. Such training could involve coding workshops, AI project work, or internships with tech companies.

5. Women-Focused Coding Bootcamps (8.1%)

Respondents also recommended coding bootcamps specifically designed for women and girls. These intensive, short-term training programs can quickly equip participants with the skills needed for careers in software development, data science, and other tech-related fields.

By focusing on women, such bootcamps can provide a supportive and inclusive learning environment that encourages participation and reduces intimidation.

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Respondents' Recommendations

6. Educate Men to Empower Women (1.5%)

A small, yet significant suggestion, was to educate men on the importance of empowering women in the digital sector. Changing societal attitudes and encouraging male allies can play a crucial role in creating a more inclusive digital landscape. Programs and campaigns that engage men in the conversation about gender equality in tech can help break down barriers and foster a supportive environment for women's advancement.

B. Other Strategic Recommendations to Mend the Gap

Building upon the critical insights offered by over 4,000 women and girls, who highlighted the need for scholarships, targeted literacy programs, digital transformation education, practice-based training, women-focused coding bootcamps, and the importance of educating men to support women's empowerment in digital domains, this section proposes an expanded set of strategic initiatives aimed at enhancing digital literacy and AI education for women and girls across Africa.

This expanded strategy encompasses a broad spectrum of initiatives, carefully designed to bridge the gap between current challenges and the vast potential of African women and girls in the digital age.

The recommendations focus on leveraging governmental, non-governmental, educational, and private sector partnerships to foster an environment where digital and AI literacy is accessible, inclusive, and empowering.

By aligning these initiatives with the specific needs and barriers identified through the survey, this paper outlines a cohesive, actionable roadmap that not only builds on the respondents' suggestions but also introduces innovative solutions to ensure sustainable progress towards closing the gender digital divide.

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Strategic Recommendations

1. **Expand Free Internet Access Points:**

   Create more public access points with free Wi-Fi in both urban and rural areas to improve internet accessibility.

2. **Community Tech Hubs:**

   Establish community tech hubs or centers that offer access to digital devices, internet, and training resources, specifically targeting underserved regions.

3. **Online Platforms for Digital Skills Sharing:**

   Create online platforms or forums where women can share digital skills, experiences, and resources with each other.

4. **Incentivize Private Sector Involvement:**

   Offer tax incentives or other benefits to private sector companies that actively participate in digital literacy initiatives for women and girls.

5. **Tailored AI Curriculum Development:**

   Develop AI curricula that address the specific needs and interests of women and girls, incorporating real-world applications that demonstrate the impact of AI in various fields.

6. **Advocacy and Policy Reform:**

   Advocate for policy reforms that support digital inclusion and education for women, such as laws that facilitate internet access and protection against online harassment.

7. **Gender-sensitive Teacher and Trainer Training Programs:**

   Implement training programs for teachers and trainers to enhance their capacity to deliver effective digital literacy and AI education, with a focus on gender-sensitive teaching methodologies.

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Action Plan Timeline for Bridging the Gender Digital Divide: Roles and Responsibilities

This section outlines actionable steps, drawn from respondent insights and analytical expansion, outlines specific interventions and designates responsible parties for execution. Key stakeholders—governmental bodies, NGOs, educational entities, private sector allies, and community organizations—collaboration would be required for inclusivity and equity. The recommendations span immediate to long-term measures, charting a course for transformative digital engagement across the continent

Timeline	Key Actions and Responsible Parties
Immediate Actions (0-1 Year)	**1. Public Awareness Campaign** **Implementing Bodies:** NGOs, Governmental Organizations **Action:** Launch campaigns to raise awareness about the importance of digital literacy and AI education for women and girls, highlighting resources, scholarships, and training programs.
	2. Digital Literacy Workshops **Implementing Bodies:** Educational Institutions, Community Groups **Action:** Conduct workshops on basic digital skills and internet use, aiming at communities with low digital literacy rates.
	3. Scholarship Programs for Digital Education **Implementing Bodies:** Private Sector Partners, NGOs **Action:** Establish scholarship funds to financially support women and girls pursuing digital literacy and AI education programs.
Intermediate Plans (1-3 Years)	**1. Establish More Women-Focused Coding Bootcamps** **Implementing Bodies:** Educational Institutions, NGOs, and Tech Companies **Action:** Develop and launch digital/AI bootcamps and practice-based training programs designed for women and girls, focusing on practical skills.

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	2. Infrastructure Development for Digital Access **Implementing Bodies:** Governmental Organizations, International Partners **Action:** Invest in the development and enhancement of digital infrastructure, particularly in rural areas, to improve internet access and availability of digital tools.
	3. Integration of Digital Education in Schools **Implementing Bodies:** Educational Institutions, Ministries of Education **Action:** Integrate digital literacy and AI education into school curriculums, ensuring that girls are encouraged and supported to pursue technology-related subjects from an early age.
Long-term Development (3+ Years)	**1. Policy Development for Gender Equality in Tech** **Implementing Bodies:** Governmental Organizations, Policy Think Tanks **Action:** Develop and implement policies that promote gender equality in the tech sector, including incentives for companies to hire and train women in digital and AI-related roles.
	2. National Strategies for Digital Transformation **Implementing Bodies:** Governmental Organizations and International Development Agencies **Action:** Formulate and execute national strategies for digital transformation that prioritize inclusivity and gender equality, ensuring women and girls are central to the digital future.
	3. Research and Development in AI Accessibility **Implementing Bodies:** Research Institutions, Tech Companies **Action:** Invest in research and development to create AI technologies and educational programs that are accessible to people with disabilities, ensuring inclusivity in AI education and application.

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By systematically addressing the challenges through these targeted short-term, medium-term, and long-term recommendations, stakeholders can significantly advance the cause of digital literacy and AI education for women and girls in Africa. Collaboration across sectors and disciplines will be key to the successful implementation of these strategies, with a shared commitment to creating a digitally inclusive society that recognizes and harnesses the potential of every individual, regardless of gender.

The recommendations proposed, categorized into immediate, medium, and long-term actions, serve as a blueprint for stakeholders across the governmental, non-governmental, private, and educational sectors to undertake concerted actions. By focusing on enhancing digital infrastructure, providing financial support through scholarships, developing gender-sensitive training programs, and advocating for policy reforms that promote gender equality in technology, we can begin to pave the way for a more equitable digital landscape.

Conclusion

The journey towards bridging the gender digital and AI divide in Africa, as outlined in this paper, presents a vision of an inclusive digital future where women and girls are empowered through digital literacy and AI education.

The comprehensive analysis of the current landscape, informed by the insights from over 4,000 respondents across 52 African countries, has highlighted the significant barriers that women and girls face in accessing digital technologies and AI learning opportunities. These barriers, ranging from socio-economic challenges to infrastructural inadequacies and cultural stereotypes, underscore the urgent need for targeted interventions and collaborative efforts to dismantle the obstacles impeding women's full participation in the digital economy.

In conclusion, the path to empowering women and girls in Africa with digital literacy and AI education is complex and multifaceted, requiring persistence, innovation, and collaboration. However, the potential rewards of this endeavor are immense, promising to unlock new opportunities for economic growth, social progress, and individual empowerment. By committing to the strategic recommendations and monitoring frameworks, stakeholders can contribute to a future where women and girls are not only beneficiaries of the digital revolution but are also leading contributors to the digital economy. Together, we can create a digitally inclusive society that harnesses the full potential of every individual, irrespective of gender, and sets the stage for a brighter, more equitable future for Africa.

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About the Author

Efe Ukala is the founder of ImpactHER, an impact driven organization that focuses on bridging the financing gap for women-led small and medium-sized enterprises (SMEs) in Africa through investor-readiness training, mentorship, market access, and other support. Awarded as the best women's support organization in Africa at the 2022 African Union Summit in Egypt and distinguished as one of the two finalists in the 2023 UN-SDG Awards in Rome, Italy, ImpactHER has supported over 139,046 African female entrepreneurs in 54 African countries, on a *pro bono* basis, on how to run successful businesses and become investor-ready.

Efe helped develop gender-smart policies that were adopted by some African Presidents during the Covid-19 pandemic. Also, in 2021, she was invited by the Organisation for Economic Co-operation and Development (OECD), Africa Development Bank, and United Nations Economic Commission for Africa to suggest and provide advice on policies that would improve African women's economic status.

Efe also designed and created the Africa curriculum for Google's Women Will initiative (entrepreneurship and workplace training modules) which is currently being used to train over **10,000** women across Sub-saharan Africa.Launched in Sub-saharan Africa in 2019, Women Will is a Google initiative to create economic opportunity for women everywhere, so that they can grow and succeed.

Also, as an investment/private equity lawyer, Efe has extensive experience in private and public investments arising out of frontier markets, inclusive of Kenya, Nigeria, Ethiopia, Zimbabwe and Rwanda. She has advised on investment worth over $15 billion in the United States market and over $1.3 billion directed into Sub-Saharan Africa (in both Funds of Funds and direct investment strategies). Previously, she served as lead counsel and Chief Compliance Officer at a private equity firm focused on investing into Sub-Saharan Africa.

Currently, she serves as Vice President and Assistant General Counsel at JP Morgan where she advises institutional investors. In 2019, Efe was appointed to serve as a committee member on the African Union's African Diaspora Health Initiative Steering Committee. Additionally, Efe served as the 41st Vice President of the Association of Black Women Attorneys NYC.

Efe received her A.B. from the University of Chicago where she was a Jeff Metcalf Fellow and her J.D. from Washington and Lee University School of Law. Efe is a member of the New York State and New Jersey State Bars. She was an elected member of Board of the University of Chicago Black Alumni Association.

Efe is an advocate for financial inclusion for African women and the prosperity of Africa, having been featured in Forbes, BBC News, and BBC Africa. She has also spoken at Harvard Business School, the United Nations, African Union, an African Development Bank (AfDB) conference, Columbia Business School, Duke Business School, on issues relating to financial inclusion in Africa. She delivered a lecture at Cornell University Business School on financial inclusion in Africa and the impact of Covid-19 on Africa's economic prosperity.

In 2021, the University of Chicago awarded her the Early Career Achievement Award, and she was recognized as a finalist in the Inclusive Leader category at the 2021 Accenture 9th Gender Mainstreaming Awards. In 2022, she was honored as one of Africa's "Forty Under 40." During the same year, at the United Nations General Assembly (UNGA), Efe was named as one of the Most Influential People of African Descent in the Activism and Humanitarian category. Furthermore, in 2022, Yahoo! Finance recognized her on their "Heroes Women Role Models", a list that recognizes women from around the world for their positive impact on society. In 2023, Efe was listed among Brummell's Inspirational Women and also named as an Executive Role Model by Involve and YouTube.

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@ hello@impacther.org

www.impacther.org