

tinue to face barriers to participating fully in the digital economy as creators and consumers of technology. With so much potential for the tech sector to grow and expand, there is also potential for the existing inequities between men and women in tech to widen and exacerbate society-wide gender disparities in earnings, wealth, and leadership if current trends continue.

WOMEN IN AFRICAN DIGITAL ECONOMIES TODAY

For the past thirty years, participation of women in the labor force in Africa has consistently been estimated to be at around 60% according to the World Bank. But, this statistic only tells part of the story.⁷ The majority of women in the labor force in Africa remain in low-income, labor intensive jobs such as agricultural work, which lack value-addition and growth opportunities and contribute to keeping many women in poverty.⁸ Nevertheless, African women continue to lead the world as entrepreneurs and business owners. Across the region it is estimated that roughly 30% of businesses are owned by women, but this belies intra-regional variation. Ghana, for example, boasts one of the highest rates of women's business ownership, with 46.4% of businesses being owned by women.⁹

Unfortunately, in the digital economy—one of the fastest growing and most promising sectors in many countries—women are underrepresented and marginalized as tech entrepreneurs. This is not unique to the African continent. The global participation of women in tech sectors remains low globally, and gendered discrimination has been a focus of leading tech hubs, like Silicon

Valley.¹⁰ Still, compared to record rates of women's entrepreneurship, women's participation in the tech industry is woefully behind. Only 9% of African tech start-ups were led by women, according to a 2016 report by Venture Capital for Africa.¹¹ McKinsey estimated in 2016 that women occupied just one-third of leadership positions in telecoms, media, and technology.¹²

Women are also excluded as consumers of technology in Africa compared to men. It is estimated that about 30% of the African population has access to the internet.¹³ There continue to be large disparities between men and women's access to the internet, especially mobile internet where there is a 37% gap between men's access to mobile internet compared to women's.¹⁴

KENYA:

Kenya has cultivated a reputation as the "Silicon Savannah" thanks in large part to its tech-savvy ecosystem, which was supercharged by the success of M-Pesa, a mobile payment technology by Safaricom.¹⁵ Women in Kenya have the strongest female representation among start-up co-founders at 25%, compared to companies in Nigeria, Ghana, and South Africa that participated in the survey.¹⁶ But, this represents a gender gap of 50 percentage points, as there are three men for every woman co-founder. Kenya also faces a stark gap between funding going to local Kenyans and the much larger share going to predominantly white, foreign expatriates launching start-ups in African cities.¹⁷

NIGERIA:

Nigeria's strong entrepreneurial spirit has earned it the top spot as the premier destination for tech start-up funding, attracting more than a third of all venture capital tech start-up funding on the continent at \$747 million in capital investment according to a 2019 report by Partech.¹⁸ The relative affordability of the internet¹⁹ may also play an important role in fostering a supportive environment for tech start-ups in Nigeria, along with the government's efforts to create a digital identity system.²⁰ Nigeria is known for having the highest rate of female entrepreneurship in the world, with some reports citing the achievement of gender parity in women-owned businesses in Nigeria.²¹ Yet, only 15% of tech start-up co-founders in Nigeria are women among companies surveyed.²² So, while the digital ecosystem is dynamic and exciting, gender inclusivity remains a long way off.

BARRIERS TO WOMEN CREATING AND CONSUMING TECHNOLOGY

The low participation rate of African women as creators and consumers of tech has been the status quo for too long. Low levels of participation reinforce existing inequalities creating a vicious cycle in which women are presumed to be less qualified and not given opportunities in the sector. In fact, the current environment does not support women and girls to be tech entrepreneurs or leaders and often actively excludes them by denying equal access to funding, social and professional networks, and training opportunities.

In Africa, the biggest barrier to mobile internet access is owning a smartphone. Women consistently have less access to internet and mobile phones than men for two key reasons: women receive lower levels of education and, partly as a result, earn less on average. According to GSMA's 2020 Mobile Gender Gap report and the survey they conducted, the top reasons African women do not have access to mobile internet remains affordability and literacy.²³ While this is also true of men of similar socioeconomic status, the disparity can be particularly pronounced for women. For instance 36% of women surveyed in Senegal cited reading and writing as a barrier to mobile access compared to 12% of men who cited this problem.²⁴

Women and girls are not only excluded from access to training and education in science, technology, engineering, and mathematics (STEM) but also from education that promotes general digital literacy. UNESCO estimates that only 30% of women in Sub-Saharan Africa receive STEM training and participate in the tech sector.²⁵ Fewer girls than boys possess the critical digital skills needed to compete in the modern labor force.²⁶ An estimated 230 million jobs in Sub-Saharan African will require digital skills by 2030.²⁷ Not having equal access to digital education systematically prevents girls from being part of the fastest-growing sectors of the economy, which could dampen job growth and entrepreneurship opportunities overall.

Patterns of gendered exclusion are intersectional, meaning that structures of power and inequality affect women from different backgrounds in compounding and overlapping ways. Women in rural areas and from poor families experience these barriers to the digital economy at an even higher rate.

Children, especially girls in rural areas, continue to experience higher levels of poverty and lower levels of education.²⁸ Rural Africa lags behind cities when it comes to accessing the internet and phone networks. It is estimated that 100 million people living in rural and remote areas currently have no access to traditional cellular networks.²⁹ In Kenya, access to and use of the internet in urban areas is three times higher than in rural areas.³⁰

Access to digital banking and identification remains a barrier for women in many countries and presents a particular challenge for women entrepreneurs that want to break into the digital economy. In developing economies, women remain 9 percentage points less likely than men to have a bank account.³¹ Across Africa, it is estimated that 60% of the 400 million people that do not have access to digital financial services are women.³² Women who own small- and medium-sized enterprises (SMEs) but do not have access to mobile phones or digital banking are not able to take advantage of digital payment applications that could significantly scale their businesses to reach new markets. Additionally, digital banking platforms can provide a range of value-added services such as risk estimation, which enables further investment.³³

Women are also excluded from digital jobs, networks, and business associations that connect job seekers to the tech industry. Exclusion from job networking opportunities means that women-led tech start-ups have a more difficult time finding and successfully pitching funders, impeding the ability to start and scale digital businesses.³⁴ And without many women in tech jobs, there are fewer role models for young girls to look up to and to seek out for mentorship.

OPPORTUNITIES FOR GENDER INCLUSIVE PARTICIPATION

Improving gender inclusivity in Africa's growing (and in some places booming) tech sector is essential for harnessing innovation and leadership potential across the continent. Eliminating gender discrimination and exclusionary patterns in entrepreneur access to start-up and growth capital will make markets more dynamic and competitive.

Women's full participation in the digital and tech economy will result in more diverse product creation, higher financial returns, and access to new markets and sectors. For investors, women-led firms experience a 34% higher return on investment than those led solely by men. This is particularly true in innovative fields like technology.³⁵ Women-led tech start-ups can help reach the women and girls that have historically been left without access to digital markets. This is especially important for business as African women have increasing spending and consumer power.³⁶

There is a major opportunity for women-led digital ventures to have a social impact. African women and social entrepreneurs have made significant progress innovating to address development challenges that disproportionately affect women and girls.³⁷ Examples of women-led solutions to the tech gender gap include Judith Owigar's³⁸ organization, AkiraChix, in Kenya, which aims to foster the development of more women in the tech sector.³⁹ Also growing is the "Femtech" branch of health technology, which has received interest from venture capitalists and donor investors looking

to fund innovative solutions to promote women's health.⁴⁰ Beyond digital tools and technology targeting women consumers, women leaders in technology are more likely to consider the needs of women as consumers and end-users of any product. This may offer different perspectives on users of all genders, potentially reducing gender, class, and other biases in the rapidly growing tech sector.⁴¹

When women lead tech companies, they tend to positively impact the way businesses are run, including who gets hired and promoted. When women are represented in leadership, companies are more likely to hire women at all levels, creating a pipeline of female talent in the industry and creating more gender-diverse teams.⁴²

CALLS TO ACTION

Given current trends, a gender inclusive tech sector will require specific policies that allow more women to have the chance to pursue careers in tech from the time they are young girls to when they are professionals. All actors have an important role to play to ensure that women are granted the same access as men to careers in tech in Africa. There is also a critical role for collaboration between stakeholders to address resource and policy gaps.

The following policy recommendations highlight the roles of African development institutions and governments, private sector actors, and community members to achieve a gender-inclusive tech sector by 2030. If these actions are taken and more women can participate in tech as creators and consumers, there is immense potential for accelerated economic growth and social improvement.

African Development Institutions and National Governments

- Prioritize equitable access to STEM education and digital education for all girls, including those in underserved communities and rural or remote areas. This means integrating more STEM requirements into national curriculum and providing more digital learning opportunities in the classroom, in addition to guaranteeing basic numeracy and literacy skills, the foundation for digital inclusivity.
- Build equitable infrastructure for internet access in communities and in schools. So much of the continent remains without access to the internet and traditional cellular networks. Efforts to make the internet an affordable, public good will allow for greater access by women and girls.
- Promote regional collaboration across digital technologies. The Africa Continental Free Trade Area has the potential to open up new opportunities for digital trade between countries. The digital regulatory environment and architecture should have a focus on gender inclusion.⁴³
- Co-invest in public-private partnerships that are mutually beneficial to achieving gender inclusion in tech. Private sector technology and telecommunications companies have a shared interest in improving internet access and digital learning that promote a more gender-inclusive workforce.
- Work with the private sector to collect better data on women in tech. There is a need for better, more consistent, and more transparent data on African women in tech in order to properly measure the current underrepresentation and account for progress moving forward.



Private Sector

- Hire, retain, and promote women in tech. Existing leaders should make concerted efforts to cultivate a future generation of women in tech leadership by hiring and promoting women and taking steps to introduce workplace policies that create a supportive environment for women.
- Invest in women-owned tech start-ups and women entrepreneurs. Investment firms should take steps to ensure an equitable distribution of funding, which includes implementing unbiased funding processes as well as hiring more women to work in capital investment and venture capital.

Community Members

- Teachers and caregivers should encourage girls' learning in STEM fields. This entails efforts to reduce bias in classroom settings that favor boys' achievements over that of girls in STEM and digital learning. It could also mean celebrating women entrepreneurs and tech leaders as role models.
- Establish women's networks and mentoring programs to support women in tech. Women and girls need strong networks that help them navigate the tech sector and inspire others to careers in tech.

In some cases, these recommendations will demand a reprioritization of resources. However, the cost of not taking these steps and leaving millions of African women behind, as tech changes the way all businesses work, is simply not an option. In fact, the opportunity for a gender-inclusive digital economy will far outweigh any costs since it is proven that a more gender diverse workforce is more innovative and more financially successful, and that connectivity enhances access to information. The tech boom in Africa is still young and the time to course-correct is now.

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The background of the top section is a photograph of a Harvard University building with a red banner that says "HARVARD LIBRARY 100 YEARS". A white outline of a woman's head is superimposed on the right side of the image. The text "WOMEN and the Changing Face of ENTREPRENEURSHIP IN AFRICA" is overlaid on the image.

WOMEN

and the Changing Face of

ENTREPRENEURSHIP

IN AFRICA

SPECIAL THANKS

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