

# TAKING STOCK:

---

DATA AND EVIDENCE ON **GENDER EQUALITY** IN DIGITAL ACCESS, SKILLS, AND LEADERSHIP

---



UNITED NATIONS  
UNIVERSITY

EQUALS



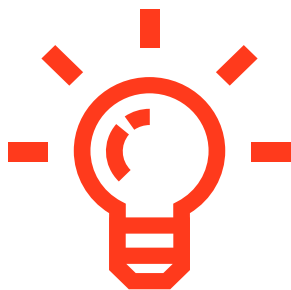
A key concept in the United Nations (UN) 2030 Agenda for Sustainable Development is 'leave no one behind', a commitment particularly relevant to women and girls in the era of rapid technological transformations. In this interconnected world, the goal of gender equality cannot be achieved if women and girls are not meaningfully participating in the digital sphere.

This report by the EQUALS Research Group paints an overarching global outlook on the state of gender equality in information and communication technology (ICT) fields and its data landscape. The report offers comprehensive insights on the degree of gender equality across multiple areas of the digital age, highlighting the implications of persistent digital gaps and uneven experiences of women and girls compared to men and boys.

## KEY FINDINGS - PART 1

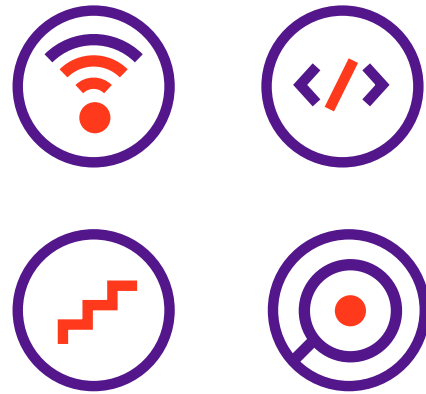
### ACCESS

- The gender digital divide persists irrespective of a country's overall ICT access levels, economic performance, income level or geographic location.
- The potential of mobile phones is under-realised. Despite its lower cost as compared to using a computer, the number of women using mobile internet remains substantially low relative to men. GSMA estimates that in low- and middle-income countries, women are 26% less likely to use mobile internet than men.
- The gender digital divide widens as technologies become more sophisticated, expensive, and enable more transformational use and impacts.
- Basic digital access and literacy are necessary but not sufficient conditions for women to meaningfully use ICTs.
- Use is not the same as ownership. The disparity between ICT use and ICT ownership indicators appears to be key to understanding women's disadvantages in basic access to ICTs.



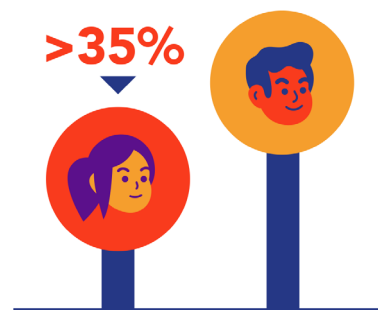
### SKILLS

- According to the available data, women are less likely than men to have advanced digital skills in the majority of reporting countries.
- While science, technology, engineering and mathematics (STEM) education can provide the foundation for advanced digital skills and a career in the tech industry, girls perceive their own skill levels to be lower than boys and have less interest in the subjects.
- Only 35% of women pursue higher education in STEM subjects. When they do, they study natural sciences more than applied sciences related to ICT.
- Alternative pathways, such as coding schools, bootcamps, and makerspaces, have the potential to equip girls and women with advanced digital skills, but their effectiveness in enhancing gender equality in ICT skills has yet to be assessed.



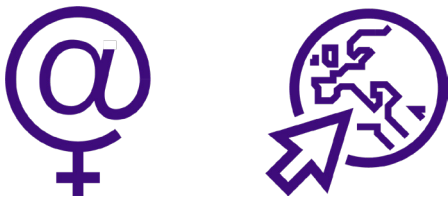
### LEADERSHIP

- Although gains have been made, women's representation remains low across different dimensions of ICT employment, entrepreneurship, and policymaking. On average, women constitute less than 35% of ICT and related professions.



- There is wide variation in women's representation by country and by ICT sub-sector, ranging from as low as 2% to as high as 60%.
- Women in ICT tend to be in junior and support rather than managerial roles.

- Evidence from North America and Europe indicates that women leave science and engineering jobs at higher rates than men.
- Women are less likely than men to start enterprises in the ICT sector.
- Women have a very low rate of leadership in ICT policymaking. Worldwide, only 28 countries have a woman ICT minister, and only 25 have a woman heading the telecom regulator.

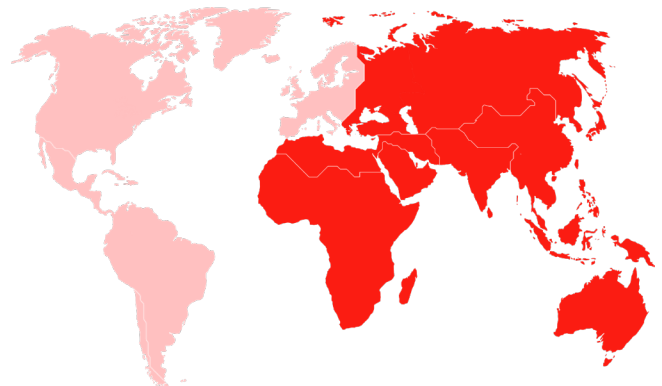


## THE DARK SIDE OF ICT ACCESS, SKILLS, AND LEADERSHIP

- Greater female inclusion in ICT access, skills, and leadership could become associated with increased exposure to undesirable experiences, unless that inclusion is accompanied by corresponding changes in the social and institutional cultures that enable or tolerate negative behaviour.
- Most countries have legislation against workplace-related sexual harassment. However, as of 2018, 65% of reporting countries have no sexual harassment legislation for schools and 83% have no legislation covering public spaces.
- A masculine-oriented work model pits work-devotion against family-devotion, and the associated tension can lead to overload among women in ICT professions.

## THE STATE OF SEX-DISAGGREGATED DATA

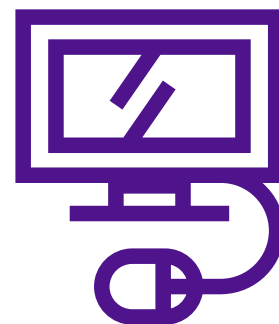
- There is a severe lack of official sex-disaggregated data on most ICT-related topics.
- Most indicators are conceptually unclear, lack an agreed methodology, and are not regularly collected by most countries in any region or development category (less than 50% of countries, for most indicators).
- Africa, Asia and Oceania have the lowest availability of sex-disaggregated ICT data.



- Barriers to collection of sex-disaggregated data include:
  - *low data collection and analysis capacity of national statistics offices*
  - *diversity of potential issues and indicators*
  - *lack of conceptual and definitional clarity*

## BARRIERS TO GENDER EQUALITY AND RECOMMENDATIONS

- **Barriers to gender digital equality** are generally related to one or more of the following: 1) availability of infrastructure; 2) financial constraints; 3) ICT ability and aptitude; 4) interest and perceived relevance of ICTs; 5) safety and security; and 6) socio-cultural and institutional contexts.
- Strategies to **increase gender equality in ICT access** generally focus on: addressing accessibility and affordability barriers; providing relevant content; improving safety and security online and offline; mainstreaming gender perspectives into policies and budgets; sharing good practices; investing in women's education.
- The main proposals for **closing gender gaps in advanced digital skills** and STEM education range from making training more accessible for women and underrepresented groups, to addressing gender stereotyping of STEM education and building girls' self-efficacy and confidence in STEM.
- Proposed **remedies for gender inequality in ICT leadership** include: combating gender stereotypes and biases at individual, institutional, and societal levels; establishing supportive structures to encourage women to pursue ICT occupations; legislating diversity obligations; and diverting resources to institutions that are more gender-diverse.



## DIFFERENT FACETS OF GENDER DIGITAL EQUALITY: CASE STUDIES - PART 2

The second part of the report deals thematically with three key elements in achieving goals of the EQUALS partnership: People, Skills, and Pathways. It features a compilation of case studies written by 27 leading experts and researchers from around the world.

Most approaches to women and ICT do not consider the contexts of different types of **People**:

- Stakeholders tend to understand gender as a binary category: male/female; and therefore, do not capture the relationship of gender and sexual minorities to ICTs. They also tend to overlook the experiences of populations with intersectional identities, such as women with disabilities in the Global South.
- The experience of young people sets the stage for gender inequality in later life. In Brazil, both boys and girls aged 11–17 believe that parents are more restrictive and controlling of girls' use of the internet.
- Country context matters. For example, the gender gap in mobile money use varies widely. Over 70% of Kenyans use mobile money, with only a 4% gap between men and women. In Paraguay over half of both men and women use mobile money. In Pakistan, only 13% of men and 12% of women use mobile money.
- The benefits of ICTs are not automatic. For example, ICTs can play an important role for women in the critical areas defined by FAO for food security: livelihood support, reducing women's workloads, ensuring protection from gender-based violence, and equitable access to resources and services. Currently, however, information is not reaching women farmers adequately.

Existing avenues for **Digital Skills** development do not necessarily create effective pathways for women's leadership in the technology industry:

- The lack of a diverse academic and research STEM workforce in educational institutions, particularly in management roles, leads to perceptions of STEM as a male-oriented domain.
- In G20 countries, men generally obtain higher returns than women for the same high-demand skills in digitally intensive sectors, but not in less digitally intensive industries.
- In South Africa, skills developed in call centres are not transferable to other work. Few leadership positions are available, and there is a lack of personal growth.

Emerging **Pathways** to gender digital equality, such as artificial intelligence (AI) risk replicating existing gender biases:

- Historically, when women have worked in technology fields, those fields are defined as low-skilled and low-prestige. Similarly, today, women contribution to digital technology production is undervalued and the fields they work in become less attractive.
- Far from being neutral, AI-based applications are gendered from their creation — by the inherent bias of their creators, or through bias in the data they rely on.
- Security technology incorporates gendered assumptions relating to sources of threat, potential "trusted" allies, and resource availability.
- Although virtually all indicators related to gender balance in the global patent system show some degree of progress toward gender parity, based on current rates, gender balance will not occur until 2070.

Read the full report on [www.equals.org/research](http://www.equals.org/research)



UNITED NATIONS  
UNIVERSITY

E EQUALS