

The gender digital divide: some elements to consider

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1. Introduction

The G20 New Delhi Leaders' Declaration of September 2023, in point 65 under the heading "Bridging the gender digital divide", states a commitment to halve the gender digital divide by 2030 (G20, 2023, 25). The digital divide traditionally refers to the division of the population between connected and unconnected people, while the gender digital divide refers to the fact that gender is not evenly distributed between these two groups, with women being overrepresented among the unconnected group. However, Doreen Bogdan-Martin (2022; iii), Director of the Telecommunication Development Bureau of the International Telecommunication Union (ITU), explains that: "As platform and services become ever-more sophisticated, the digital divide is increasingly being defined as people's ability to make meaningful use of connectivity – defined as the possibility for everyone to enjoy a safe, satisfying, enriching, productive and affordable online experience". In other words, the definition changes as technology evolves from simple access to meaningful use.

Today there are gender differences in the use of digital technology, for example in the private sphere, to search for information, or in the work sphere, to carry out financial transactions; this is the conception of the digital divide included in the definition above. These gender differences are large in low and low-middle-income countries, where access to information and communication technologies (ICTs) is far from universal – universal access is accepted if at least 95% of people have access to ICTs - which is target 9.c of the UN Sustainable Development Goals for 2030. Apart from the evolution of the definition, some additional nuances should be introduced, as there are other gender differences related to digital technologies that deserve to be mentioned.

When surfing the web, women may face or perceive gender-focused risks. Fear of harassment or bad experiences when using the internet has been described among women. According to the Economist Intelligence Unit (EIU) study (2021, online document), up to 85% of women reported witnessing online violence against other women online and 43% felt unsafe at some point. Feelings of

insecurity can act as a barrier to entry and should be prevented. Once again, territorial differences are large.

There are huge gender differences in the people who develop this technology. There are fewer women than men working as software engineers or developers and there are few women running companies in the ICT sector. This is, at least partly, due to the lack of girls and young women studying STEM (Science, Technology, Engineering and Mathematics), which is very dramatic in the specific case of ICT.

The last two gender differences should also be included when talking about the gender digital divide. Fear of harassment may result in less use of technologies by women and thus amplify the traditional gender gap. In the case of women working in ICTs, there are at least two reasons to include them in the concept of the gender digital divide. Firstly, the lack of women may generate gender biases in the development of these technologies and as a result some developments or extensions of applications that would be more useful and attractive to women may remain undeveloped and thus contribute to perpetuating the gender digital divide. Secondly, as in any other sector, the inclusion of a female workforce will increase labour capacity in a sector that is in growing demand and is expected to be undersupplied in the future. Moreover, it will also increase creative capacity.

The next section highlights the importance of bridging the gender digital divide. We will then put into data the elements of the digital divide described above. The fourth section is devoted to the causes of the gender digital divide. The last section is left for concluding remarks.

2. Why is bridging the digital divide and the gender digital divide considered important?

Digital inclusion or e-inclusion refers to the possibility of using digital technology. It is expected to have benefits both at an individual level and for society as a whole. At an individual level, digital inclusion offers social and economic opportunities to citizens and firms. For the collective, it is associated with economic growth and equity in general; it can also contribute to progress towards gender equality.

Having access to the internet increases economic opportunities. The internet is used to search for and find jobs and to buy and sell products and services. The internet can reduce barriers to market entry, reduce transaction costs and improve labour matching. In addition, digital communication facilitates access to digital financial services. For instance, using mobile/smart phones and the internet to manage a bank account when it is not possible or costly to go to the bank. Therefore, digital exclusion leads to fewer economic opportunities and higher costs and will be more detrimental to those who have less access to traditional markets and financial services. Women are disadvantaged in some markets and access to digital networks can help to bridge this gap. There is a gender gap in the labour market: women's participation rate is lower (Women: 49.4%, Men: 72.3%; ILO, 2023, 30), women's working hours are shorter (Women weekly hours worked per employee: 38.1h Men: 44.6h; ILO, 2024a, 24), women's responsibility is limited and women's pay is lower, women in high-income countries face a significant unadjusted gender pay gap, earning less than three-quarters of what men earn; the disparity is even more stark in low-income countries, where women earn less than half, ILO, 2024b, 7). In the past, part of these differences were due to the educational gap. Today digital access and digital skills can help to reduce the gender gap in the labour market, but lack of internet access or lack of digital skills can perpetuate or increase the gap. Gender differences in financial inclusion have also been reported. Demirgüç-Kunt et al. (2018, 23-24) report that in 2017, 72% of men had a bank account, while only 65% of women had one. Sahay et al. financial inclusion indices (2020, 27-28) show that digital financial services contribute to reducing gender gaps.

The consequences of digital exclusion for the development and well-being of citizens are also important as it restricts access to information and knowledge. Having access to digital networks is important for education, as it enables people to participate in online courses and seminars, overcoming geographical barriers. The internet is also an essential resource for searching for information. Moral norms in some parts of the world limit women's social contact, and as a result, their participation in formal education is restricted. Access to digital resources is an open door to knowledge for women and will contribute to gender equality. By 2023, 129 million girls and young women are estimated to be out of school and will end up developing few skills. In 2022, 32.1% of young women compared to 15.4% of young men were not in education or other training and were not employed (UNWomen, 2023, 11).

The internet is not only used to provide educational services but it is also becoming a platform to support health services and to disseminate health-related information. In sub-Saharan Africa, having a mobile phone is associated with being better informed about sexual and reproductive health (Raluca and Phillips, 2023, 2073)¹. Once again, if access to this information through traditional communication channels is not gender-balanced, digital communication can correct this previous imbalance. Conversely, if access to digital communication is not balanced between men and women, the gender imbalance in access to information and services will persist and perhaps worsen.

Digital inclusion has societal benefits and exclusion is costly. Evidence suggests that increasing digital financial inclusion, which encompasses access for women, is positively associated with economic growth (Khera et al., 2021, 4). In a recent report sponsored by the Internet Society Foundation and led by the Alliance for Affordable Internet (A4AI), the cumulative lost Gross Domestic Product (GDP) between 2010 and 2020 due to women's digital exclusion in low- and lower-middle-income countries is estimated at United States dollars (USD) 1 trillion, USD 126,000,000,000,000 in 2020. Missing GDP implies taxes that are not collected, in 2020 with current taxation it is estimated that these governments are missing out on USD 24.7 billion in taxes (Rodriguez and Woodhouse, 2021, 4, 9). The consultancy Accenture estimated in 2018 that for the G20 the 10-year cost of the digital talent gap, which is arguably the main cause of the talent shortage, was going to be a loss of USD 1.5 trillion in GDP growth (Consultancy.uk, 2018, online).

The economic cost is only part of the social cost of digital exclusion, since, as we have seen, it also has costs in education and health. In other words, digital inclusion contributes to making the world a better place. As mentioned above, 1) it facilitates access to financial services while, by increasing access to financial services, it reduces inequality within countries for both men and women (Cihák and Sahay, 2020, 18). 2) It facilitates access to education, which is accepted to be related to all indicators of well-being. In low- and middle-income countries, women have lower financial coverage and shorter formal education; if their

¹ The authors cite the article: Rotondi, V., Kashyap, R., Pesando, L.M., Spinelli, S. And Billari, F.C. (2020), "Leveraging Mobile Phones to attain Sustainable Development", *Proceedings of the National Academy of Sciences*, 17:24, 13413-13420.

access to the internet is worse, the above gap will persist and even increase. Digital access could contribute to reducing these gender gaps. Women's digital access will eventually lead to their entry into financial markets and education; their entry will have a greater impact on society compared to men, as their initial level is lower.

In addition to discussing the reasons for increasing internet use, it is important to mention why more women should study ICT-related subjects and pursue careers in the technology industry. Firstly, digital skills are in high demand, and there will be a shortage of highly skilled workers unless more people are trained. This shortage is the basis for the estimated high economic cost of the digital gender gap explained above. Moreover, several studies have found that diversity increases both creativity and productivity (Swon, 2022, 159-60); Snow reports a study that states that to impact innovation, leadership needs to include at least 20% women. The increase of women in the technology industries, particularly if they have previously been trained in technology fields, will also imply a reduction of the wage gap since this sector is well paid and, as mentioned above, the wage gap in this sector is higher than in other sectors. In fact, a certain digital literacy is becoming increasingly necessary to access to jobs. Technological literacy is the sixth most in-demand job skill according to the World Economic Forum (WEF, 2023, 38).

Finally, it must be said that digital inclusion can also have some adverse effects; for example, digital platforms can reduce the bargaining power of workers, leaving them unprotected. Digital inclusion can also present threats that may be gender-specific and may act as barriers to entry. In addition, some traditional aspects of gender inequality may be maintained in a digital environment and sometimes amplified by digital technologies.

3. The gender digital divide: some facts

3.a Differences in usage

To visualize the magnitude of the gender digital divide, gender digital gaps can be calculated. Typically, digital gender gaps measure the percentage differences between men's and women's use or ownership of technical devices, expressed as a percentage of women's use or ownership. For example, gender differences in

mobile phone and smartphone ownership or internet access can be calculated. The differences by region are huge, as can be seen in table 1 using ITU 2023 data.

	Gender gap (%) in the use of the internet	Gender gap (%) owning a mobile phone (Children under 10 are not included)
World	8,3	8,8
Africa	31,5	19,4
Americas	1,3	0,3
Arab States	15,5	9,7
Asia-Pacific	9,4	11,4
CIS	2,7	2,4
Europe	2,3	1,3

Table 1. Original data source: ITU World Telecommunication/ICT Indicators database (*Facts and Figures 2023, online data*², November 2023)

By 2023, in Africa, 31,5% more men than women had gone online and 19,4% more men owned a mobile phone. In the Americas, taxes are 1,3% and 0,3%, respectively. These data are consistent with those presented in the GSMA (Global System for Mobile Communications) Mobile Gender Gap 2024 report: in low and middle-income countries, women are 8% less likely than men to own a phone, rising to 13% for smartphones, and 15% less likely to use mobile internet. The gaps remain large in the Middle East and North Africa (10%, 17% and 16%) and very large in Sub-Saharan Africa (13%, 28% and 32%) and South Asia (15%, 34% and 31%) (Jeffrie, 2024, 10-17). It is also consistent with the SDG Indicator Dashboard | UN Women Data Hub³ which provides data for over 100 countries from various years.

Instead of grouping countries by continent, they can be classified according to their level of well-being (estimated through income). The result is clear: gender differences in connectivity - and connectivity in general - depend on income. With the 2021 data provided by the ITU for all types of internet connections, the differences for low- and low-middle-income countries are large (10-11%) while in upper-middle and high-income countries the overall differences are reduced to 1% (ITU, 2022, 3). The Pearson correlation coefficient between gender differences in the percentage of citizens who have connected to the internet on any device and the percentage of citizens connected is negative ($r=-0.4$), which indicates that countries where the percentage of citizens who are connected to the internet is high tend to be more gender balanced in terms of internet access.

² <https://www.itu.int/en/ITU-D/Statistics/Pages/stat/default.aspx>. [See also ITU (2023, 3)]

³ <https://data.unwomen.org/data-portal/>. See table 5.b.1.

In absolute values, an estimated 250 million more men than women worldwide were using the internet in 2021, with these differences concentrated in low and low-middle-income countries.

The gender digital divide is not only found in the possibility of access, but also in the quality of access (not having a stable and good quality connection). In low-income countries, 85% have 2G coverage, 62% 3G, and only 32% 4G (Economist Impact, 2022, 4, 12); new technologies and applications demand more data. Failure to close the coverage gap of a good connection could perpetuate the gender digital divide, as the worse the connections, the lower the economic opportunities. Without economic progress, a good connection and good smartphones will be too expensive for many poor women, trapping them in poverty. In low-income countries, young women tend to reside in rural areas more often than young men, as men often migrate to cities in search of job opportunities. Poor digital literacy and skills, which result in limited ability to use digital technology and access the internet, may also play a significant role in explaining the gender digital divide, particularly among women in rural areas of low and lower-middle-income countries (Economist Impact, 2022, 13).

The presence of relevant content for users and the perceived value of the internet are also noteworthy issues. The Economist Impact report (2002, 17) explains that people in Kenya “particularly people in rural areas, older people, and women – may not use internet because there is little content available that they perceive to be relevant to their daily lives”⁴.

3.b Safety and security

Differences are found in the experiences of girls and women in using the internet in terms of safety and security. This issue is important as it may prevent women from using digital devices and foregoing their potential benefits in terms of personal development at work. Therefore, it may entail indirect personal monetary costs due to the opportunity cost of not using digital devices. It can also result in direct costs, particularly if severe, due to medical expenses related to the stress and other psychological damage it causes.

⁴ Digital Ecosystem Country Assessment (DECA) report, USAID, 2002 reported by Economist impact (2022, 17)

In a study conducted in 2012 in the EU-28, in which 42000 women aged 15 years and older were interviewed, it was evidenced that 11% of women have suffered cyberbullying in their lifetime, 5% in the last 12 months; these percentages increased to 20% and 11% in young women (between 18 and 29 years) (FRA, 2014, 30). This study is more than 10 years old; cyberbullying has increased in number and possibilities; for example, manipulating images through AI and posting them on the network.

The Economist Intelligence Unit (EIU) study, through online questionnaires administered in spring 2020 to 4561 women aged 18-74 with internet access, shows that online violence against women is prevalent among regular internet users. The results apply to women with internet access in the 51 countries with the largest online populations (EIU, 2021a, online infographic for results; EIU, 2021b, 7-19 for methodology). The prevalence of awareness of cyberbullying is estimated at 66%. Cyberbullying is only one of nine threat tactics described as prevalent against women; the most prevalent is misinformation and defamation. In addition, assaults can be combined. Table 2 contains the most frequent threat tactics and the estimated overall prevalence, it should be noted that it includes personal and reported experiences, i.e., it is not the prevalence among harmed women but of having knowledge of harmed women.

Prevalence (personal or known) in women of the nine most frequent threats that use and rely on ICTs.		
Misinformation and defamation	Spreading of totally or partially false news intended to discredit women.	67%
Cyber-harassment	Repeatedly attempting through textual or graphic content to frighten and undermine self-esteem or reputation.	66%
Hate Speech	Using sexist and hateful language to attack or humiliate women.	65%
Impersonation	Obtaining and using another person's personal data in a way that involves deception or fraud.	63%
Hacking and stalking	Intercepting communications and data that may involve stealing passwords, tracking someone's location via GPS or social networks, and using remote access tools (RATs) to spy on a computer from afar.	63%
Astroturfing	Engineering online support for an issue, while obscuring the coordinated aspect of the messaging and who is behind it	58%
Video and image-based abuse	Coercion by sexting or engaging in unwanted sexual conduct through sexually explicit photos or videos and creating and distributing or threatening to distribute sexually explicit images of another person without that person's consent.	57%

Doxing	The unauthorized collection and publication of a person's personal information, including, but not limited to, full names, addresses, telephone numbers, e-mail addresses, family members' information, or financial information.	55%
Violent threats	Threatening offline violence, including threats of rape, injury or death, etc. directed at the victim and/or the victim's family members, and incitement to physical violence.	52%

Table 2. Data source: EIU, 2021a, online infographic

According to the EIU, out of women who were injured, 54% reported personally knowing their predator. This information can be read in two ways. On the one hand, at least for 54% of women, the problem is due to general violence against women, with the network being just another channel. On the other hand, the existence of this channel is also creating predators and 74% of the women surveyed are concerned that online aggressions will escalate to offline ones. In fact, 92% of women stated that online violence harms their sense of well-being and 7% of women surveyed lost or quit their jobs due to online violence. Unfortunately, the study did not target men, so the prevalence in men has not been studied and it is not possible to know whether it is higher or lower. The important finding of the study is that the network is not perceived as safe by women and therefore its use may be self-restricted.

Cyberbullying is also monitored by the Fundamental Rights Survey, which has passed a questionnaire to 34,948 respondents in the 27 EU Member States, the UK and North Macedonia. Its results for 2019 are surprising to say the least. More men than women suffered cyberbullying (and also stalking). According to the survey, in the previous 5 years the percentage of women experiencing cyberbullying in the EU-27 was 13%, while that of men was 15%. Although the prevalence is similar, the nature may be different: three times more women than men stated that the harassment was sexual in nature (FRA, 2021, 49, 56). A German survey also reveals that women (aged 10-50) are more likely than men to experience sexual harassment and cyberbullying (OECD, 2018, 23). The Pew Research Centre also finds that young women were disproportionately victimized by online sexual harassment compared to men (PRC, 2014, 15 and Vogels, 2021, 17).

Prevalence is much lower in the FRA survey than in the EIU survey. First, it should be said that the EIU deals with known threats, while the FRA deals with victims. Second, the FRA survey only covers European countries, while the EIU

survey covers the whole world. The map provided by the EIU showed Europe and North America as the safest areas of the world for such assaults on women. Third, the methodology of the two surveys is completely different: the EIU survey is entirely online while the FRA survey is more traditional. Nevertheless, both surveys conclude that the web can be insecure. Threats may deter people from going online, and the feeling may be greater among women.

In relation to the risks associated with the network, Heeks (2022, 688-693) recently introduced the concept of adverse digital incorporation. Not all groups of citizens benefit from digital inclusion, as it leaves them in the hands of predators. That is, more advantaged groups extract disproportionate value from a less advantaged group, in our case women. This may be the case of webcam sex services where platforms generate substantial profits, and people connected to the internet take pleasure in the commodification of young women or even girls (and boys) from less affluent countries simply because they can.

3.c Gender gap in digital skills and gender differences in the ICT work sector.

Very strong gender differences can be found when we talk about participation in the process of developing digital communication technology (e.g. working in technology companies developing software). These differences start at school, are evident at university, and continue at work. The skills shortage in the technology sector is going to limit future development. The labour gender gap, which is at its maximum in ICT, has a strong potential cost in terms of growth as there are not going to be enough workers.

The OECD (2018, 14) explains that in OECD countries, at the age of 15, 10 times fewer women than men want to be ICT professionals (girls: 0.5% - boys: 5%) and half as many girls as boys want to work in the field of technology, science, engineering or mathematics (STEM). It is not surprising that at university, ICT is the field with the lowest proportion of women enrolled. In OECD countries in 2021 only one-third of STEM graduates at university were women. Within STEM the lowest proportion of women is in ICT (23%), and in engineering (28%). However, the figures were slightly worse 6 years ago, when the percentage of women in ICT was 21% and in engineering 25% (OECD, 2023, 233, 240⁵). In the European Union, currently, only 23% of ICT PhDs in the EU-28 are women (European Commission, 2021, 36).

⁵ Permanent location of the data table: <https://stat.link/s1gj0u>

As a direct consequence of the gender differences in the number of graduates, there is also a gender gap in ICT in the workplace. According to Eurostat data from the Labour Force Survey in 27 EU countries), in 2022, 81.1% of ICT workers were men and only 18.9% women. Although the proportion of women has increased, accounting for 17% in 2012. However, if we consider employers with ICT training, the situation is even worse: in 2021, women accounted for only 15.9%. The gender gap in ICT skills is huge. In fact, in the world, women working in the ICT sector tend to be concentrated in the lowest paid jobs, for example, they are less present in software development (ILO, 2018, 94). It is therefore not surprising to find that the median gender pay gap estimated by the International Labour Organization (2019, online 12 Nov) for 75 countries in technology industries is 21%, while the overall gap is 16%. UN Women's Gender Snapshot (2023, 19) provides data figures for the World: women hold less than a quarter of jobs in science, engineering and ICT, hold only 17% of patents, and are twice less likely than men to know how to write software. In the energy sector, women only represent 16% of workers and earn 15% less than men with the same skill level (UN Women's Gender Snapshot 2024, 15).

4. Roots, causes and consequences

Many of the causes of the gender digital divide have already been presented. We will now compile and complete this information by separating the factors that apply mainly to low and lower-middle income countries from those that apply to countries that have reached or are close to reaching parity in internet access. For the first group of countries, the main hurdles to access and the obstacles to utilizing digital opportunities will be described. For the second group of countries, the focus will be on the barriers women face in working in high-level positions in the ICT sector and the resulting consequences.

4.a Barriers to access and use

As mentioned above, internet access in low and lower-middle income countries, while it has increased, remains low, particularly for women. This is partly due to the cost of access, often referred to as affordability, which is influenced by factors such as data tariffs and the prices of phones and smartphones. As women are poorer than men (on average), affordability is a greater hurdle for women.

Another constraint to women's access is the lower coverage in low-income rural areas compared to cities. Men often migrate to urban areas in search of jobs, while women stay at home with limited or no coverage, and even more limited access to electricity, which is essential for establishing any connection. For these women, having access to the network would provide them with opportunities to sell their products or even find employment in urban areas, thereby reducing their poverty. On the other hand, digital exclusion could exacerbate the gender gap.

In addition, women in the poorest areas of the world often have limited access to education and may not be aware of the opportunities that could be unlocked if they had internet access. It can also happen that they lack trust in the information provided through digital platforms.

The gender gap in education should be mentioned as a hurdle on its own as adult women are more illiterate than men. In this regard, Google has developed voice applications to address, at least partially, this problem. For the younger generations, the gender education gap has narrowed, although it has not disappeared. In addition, there is a significant gender digital skills gap worldwide.

Compared to men, women are more afraid of the threats of the internet, which could lead to a more cautious use of digital opportunities. Additionally, women exhibit lower levels of confidence in their ability to keep safe online compared to men (UN Women's Gender Snapshot 2024, 53). As mentioned, women are one of the groups for whom specific platforms exist that commodify them; arguably resulting in unequal benefits and potentially abusive situations. The existence of such marketplaces and the feeling that it is not a safe environment may increase some women's aversion to digital connection.

In some countries, moral norms or/and social/familial pressure may limit their use of the internet (see Mariscal et al., 2019, 6-7 for examples of social and familial mechanisms of exclusion in India and Bangladesh). The influence that family and society exert on women is possibly behind the lack of confidence that too many girls have about their skills and abilities with digital devices.

In low and lower-middle income countries, some of the barriers to women's access to and unrestricted use of the internet are not independent. For example,

poor education may be correlated with a lack of awareness of potential benefits or greater exposure to threats. Because of these correlations, a policy promoting coverage alone may not be enough to make a difference. Raluca and Phillips (2023, 71-72, 79-84) explain how women in these countries can be locked into a state of low digital inclusion from which it is difficult to escape unless multidimensional interventions are implemented.

4.b Women in the ICT sector

Another issue of great societal interest is understanding the reasons behind the low enrolment of women in engineering studies. Engineering degrees generate well-paid jobs with a high level of responsibility and social impact. The increase in the number of female engineers will help reduce the gender employment gap in terms of both salary and position, especially as the more highly skilled professions are often heavily dependent on ICT (OECD, 2018, 54). It will also increase human capital in an area of growing demand. In addition, it will bring a female vision to leading fields of society.

Nowadays, there are relatively few women involved in software development. A study of developers of R, an open-source programming language for data analytics, shows that 77% of packages created between 2012 and 2017 were made by teams of men, while only 6% were made by teams of women (OECD, 2018, 93). Lack of diversity can cause unintended side effects. For instance, some computer programs are gender-biased. Automatic language translators like Google Translator or DeepL are a good example: when translating a term from a language with a neutral form into one without a neutral form, such as French or Spanish, they translate it into the masculine form, for example translating “scientist” as equivalent to “male scientist”. It is said that to avoid these biases, the inclusion of female programmers would help. This may remain true and highly relevant with the development of AI.

Why do so few young women enrol in ICT and engineering careers? An OECD report (2015, 39-42, 63-92) explains that “The learning outcomes that are associated with digital technologies depend, to a great extent, on how – and how frequently – students use them”. Looking at the results of tests and questionnaires given to teenagers in 2012 in the framework of the PISA programme, there are not really big gender differences in computer use among adolescents; but girls' self-confidence in their mathematical and technological

skills is lower. Lack of confidence is widely accepted as one of the reasons why so many girls discard STEM fields. Girls' self-censorship in science may be fuelled by parental, school and societal biases, which can even be unconscious. That is why it is so important to make more women scientist and leaders visible and place emphasis on role modelling.

The next problem is that some female ICT graduates drop out of their careers. Common reasons given for not studying ICT include lack of role models, social pressure, lack of family support, lack of self-confidence and the belief of a hostile working environment dominated by men. The same reasons apply to women working in ICTs. The few women who work in technology industries in good positions often comment on the pressure they feel in such a male-dominated environment. Moreover, they also face an environment that is not yet adapted to their personal development as women and mothers. As a result, by 2020, only 26% of board members of major technology companies were women (Broadband Commission, 2023, 32).

5. Final comments as a conclusion

The gender digital divide is fully related to the global digital divide between the richest and poorest countries. Gender digital inequalities are amplified in parts of the world where digital penetration is lower.

On one side, the digital divide increases for the most vulnerable populations, such as rural women with few resources and little education. On the other, gender gaps due to social norms and pressure may acute digital divide. This can affect certain low-income countries with limited digital penetration. That is to say, several factors may converge and reinforce each other. As suggested by Raluca and Phillips (2023, 84) in this situation intervention to reduce gender digital gap should have a multifactor perspective to be effective.

The gender digital divide can amplify other gender inequalities such as educational and employment gaps in both pay and position, as women with limited access to the internet will miss out on educational and employment opportunities. Containing gender inequality requires bridging the gender digital divide.

On the other hand, while the virtual environment offers many opportunities and can bring progress, it also entails risks. The risks are greater for individuals with limited education and resources, as they might be in a vulnerable situation. In this context, women can be a vulnerable collective in some parts of the world. To prevent exacerbating global inequalities, it is essential to ensure that the internet is as safe as possible for all its users. Efforts must be made to reinforce security for groups that perceive and face specific threats. This requires the collection of gender-differentiated data on internet threats and the facilitation of safe and effective reporting of malpractice.

Inequality also exists in high-income countries, although it takes other forms. Young university women have little interest in engineering and, professionally, their presence in the ICT sector is relatively low. This has a negative impact on women's careers and wages as a group. It also leaves the advancement of the digital society in the hands of men. Currently, the people who are developing the programmes that allow the web to function and offer services are not representative of the potential user base (there is no gender parity). In this context, it is possible that, unintentionally, it is biased towards applications for profiles more similar to those of the designers, and in this sense the web is not such a comfortable environment for female users. As a result, the gender digital divide would persist.

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