

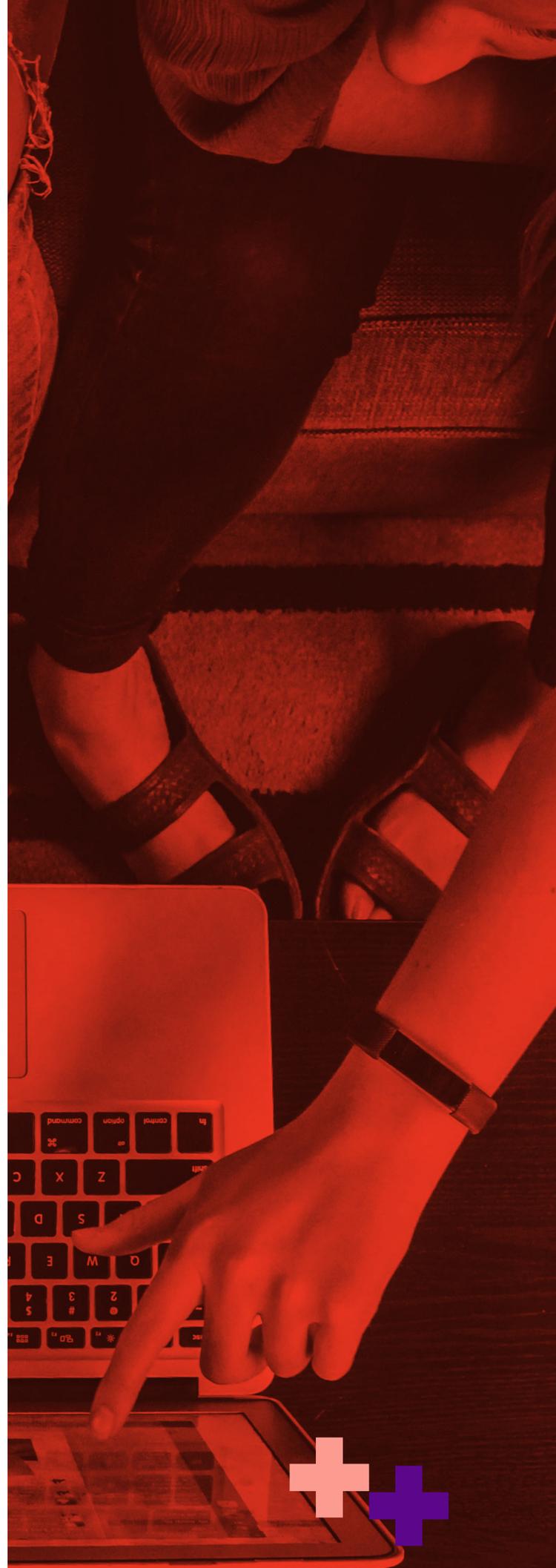
# 4

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

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## KEY FINDINGS

- **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.
- **About 73% of women** have already been exposed to or have experienced some form of cyber violence.
- **Most countries** have legislation against workplace-related sexual harassment. However, as of 2018, the majority (65%) of reporting countries have no sexual harassment legislation for schools and 83% have no legislation covering public spaces.
- **Evidence on gender** pay gaps within the technology industry is contextual and sometimes contradictory.
- **A masculine-oriented work** model pits work-devotion against family-devotion, and the associated tension can lead to overload among women in ICT professions.
- **In theory**, most countries have legal provisions to support working mothers; however, it is unclear the extent to which this legislation is helping attract and keep women in the ICT industry.

addiction, risky online behaviours like sexting, or human exploitation, are not covered in this report. (See Unwin (2017) for a detailed discussion of the dark side of internet access.)

## 4.2 / CYBER VIOLENCE AGAINST WOMEN AND GIRLS

In 2015, the Broadband Commission sounded the alarm on the emerging threat of Cyber Violence Against Women and Girls (Cyber VAWG). At present, there is no globally agreed-on definition for cyber VAWG, as the issue is evolving together with its scope (Box 4.1). Accounting for instances of technology-enabled gender-based violence is complicated, and no single measure adequately captures its complexities. Hinson et al. (2017) note, that while existing tools such as the Cyber Psychological Abuse Scale and the Revised Cyber Bullying Inventory provide tangible methods, they are limited in that they measure specific cases of technology-enabled GBV and have been tested mostly in developed-country settings. However, different stakeholders have started laying the groundwork for developing valid and reliable measures. For example, the World Bank Group and the Sexual Violence Research Initiative have engaged the Centre for Research on Women to develop a way to measure technology-facilitated gender-based violence (GBV) on a global scale.

## 4.1 / INTRODUCTION

Promoting digital gender equality means more than women's capabilities to access, meaningfully use, and create ICTs. Neither does it mean merely opening doors to enable women to participate on an equal footing with men, as workers, employers, or decision-makers in the digital economy. For all its advantages, the digital age comes with gender-related risks and pitfalls; some are an extension of already existing dangers, while others are a direct response to women's increasing connectivity and visibility in male-dominated spaces. Greater female inclusion in the EQUALS Partnership action areas can become associated with increased exposure to undesirable experiences — unless that inclusion is accompanied by corresponding changes in the social and institutional cultures that currently enable or tolerate negative behaviour. Areas of concern include cyber violence against women and girls, sexual harassment in educational and employment settings, education- and work-related discrimination, and work and life balance. Other potentially relevant issues, such as internet



**Box 4.1**

## Definitions of cyber VAWG

- The Broadband Commission (2015) defines cyber VAWG as “any act of gender-based violence that results in, or is likely to result in, physical, sexual or psychological harm or suffering to women, including threats of such acts.”
- The European Institute for Gender Equality (2017) includes the following acts as some forms of cyber VAWG: cyber stalking, non-consensual pornography (or “revenge porn”), gender-based slurs and harassment, “slut-shaming”, unsolicited pornography, “sextortion”, rape and death threats, “doxing”, and electronically enabled trafficking.
- Women’s Aid takes a broader view of the problem of cyber VAWG by looking at two broad categories of cyber VAWG: (1) online abuse — the use of the internet or other electronic means to direct abusive, unwanted, and offensive behaviour at an individual or group of individuals; (2) online harassment and stalking — the use of the internet or other electronic means to stalk or harass an individual, group of individuals, or organisation (Laxton, 2014). Online violence against women is also referred to as technology-facilitated gender-based violence (GBV).
- Other threats or acts that can fall under the scope of cyber VAWG include: hate speech (publishing a libel); hacking (intercepting private communications); identity theft; online stalking (criminal harassment); and uttering threats. It can also entail persuading a target to end their life (counselling suicide or advocating genocide).
- While the terms cyber-VAWG or technology-enabled GBV provide convenient anchor terms to frame online abuse and harassment faced by women and girls, these types of dangers are dissimilar in degree and scope. Each of these problems may require specifically tailored policy responses and policy actions.

**4.2.1 / LEVELS OF CYBER VAWG**

Tracking cyber VAWG is tricky because of the evolving nature of technology and the evolving kinds of cyber VAWG that can emerge. In the EU, it is estimated that one in ten women have already experienced a form of cyber violence since the age of 15 (EIGE, 2017). Global data is harder to come by, with no single international repository of data on cyber VAWG. Where data are available, the issue of under-estimation is also a concern, as cases of harassment and abuse tend to be under-reported because of the associated stigma and shame attached to being a victim, among other reasons. At present, evidence on the extent of cyber VAWG is mostly issue- and country-specific, and anecdotal rather than global in scope. (See Part II Chapter 3 for qualitative research results on online privacy and violence in Brazil, from a youth perspective.) High-profile cases of cyber VAWG, often in developed countries, have served to highlight the

problem of cyber VAWG and help to galvanise deeper investigation and action on the topic (Box 4.2).

**Box 4.2**

## Tracking cyber VAWG

In spite of the lack of global data on cyber VAWG, the following types of cyber VAWG have been documented.

**Online harassment.** Amnesty International notes that Twitter is a “toxic place for women”, based on the survey conducted in the UK: 78% of women responded that women cannot share their opinions without receiving online vitriol, including death threats, rape threats, and racist threats. In the U.S., a survey found that 21% of women aged 18–29 have been sexually harassed online, double the share of men (9%) in the same age group, although overall, men (44%) are more likely to experience online harassment than women (37%) (Pew Research Center, 2017).

**Nonconsensual pornography/ image-based abuse/ revenge porn.** The widespread use of social media and image-capturing devices enable graphic forms of harassment. The first academic study of the subject, in Australia, revealed that one in five people are victims of revenge porn (Henry, et al., 2017). While women (22%) and men (23%) were equally likely to be victimised in general, women were more likely to be victimised by an intimate or ex-partner and were also more likely than men to have a stranger take a sexual image of them without permission. In South Korea, almost 5,200 sexual harassment cases involving spy-cam footage were reported in 2016; over 80% of the victims were women. In the UK, a Revenge Porn Hotline was launched in 2015 to respond to the severity of the issue. In most cases, the abuse aimed to control, intimidate, or gain monetary or sexual gratification from the victim.

**Cyber bullying.** Sex-disaggregated data on cyber bullying are sparse and limited in coverage. In the U.S., the Cyberbullying Research Center has been collecting data related to cyberbullying. A survey of a nationally-representative sample of 12-17-year-olds across the U.S. shows that 36.7% of females have been cyberbullied, higher than the rate for males (30.5%) (Hinduja & Patchin, 2016).

**4.2.2 / PHYSICAL VIOLENCE AGAINST WOMEN**

The closest indicators with global coverage that can give a sense of the issue of cyber violence are the indicators for physical violence against women — intimate-partner (IP) and other — that are tracked as part of the SDGs (Figure 4.1). The World Health Organisation (2013) estimates that one in three women throughout the world will experience physical and/ or sexual violence by a partner or sexual violence by a non-partner in their lifetime. While offline and online violence are different, offline violence indicators can be used as a proxy indicator, as cyber VAWG forms

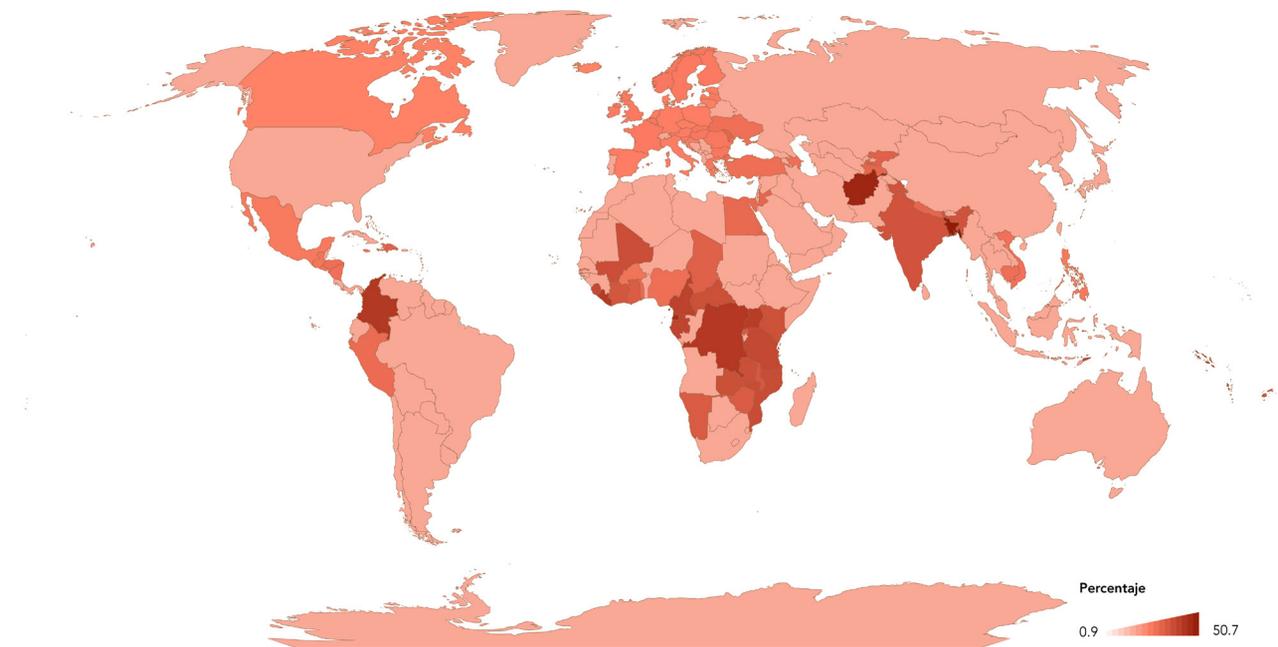
part of the continuum of exploitation that women and girls encounter as a result of an unequal society. In fact, the Broadband Commission (2015) notes that cyber violence is as harmful as physical violence or sexual abuse.

**Figure 4.1**  
SDG Indicators related to Violence Against Women and Girls



Even for physical VAWG, there is a lack of country coverage. Where data is available, the proportion of women and girls subjected to IP or non-IP physical, sexual, or psychological violence varies in range across different countries and regions (Figures 4.2 and 4.3).

**Figure 4.2**  
Percentage of women subjected to physical and or sexual violence by a current or former intimate partner in the previous 12 months (most recent year, 2005–2016)

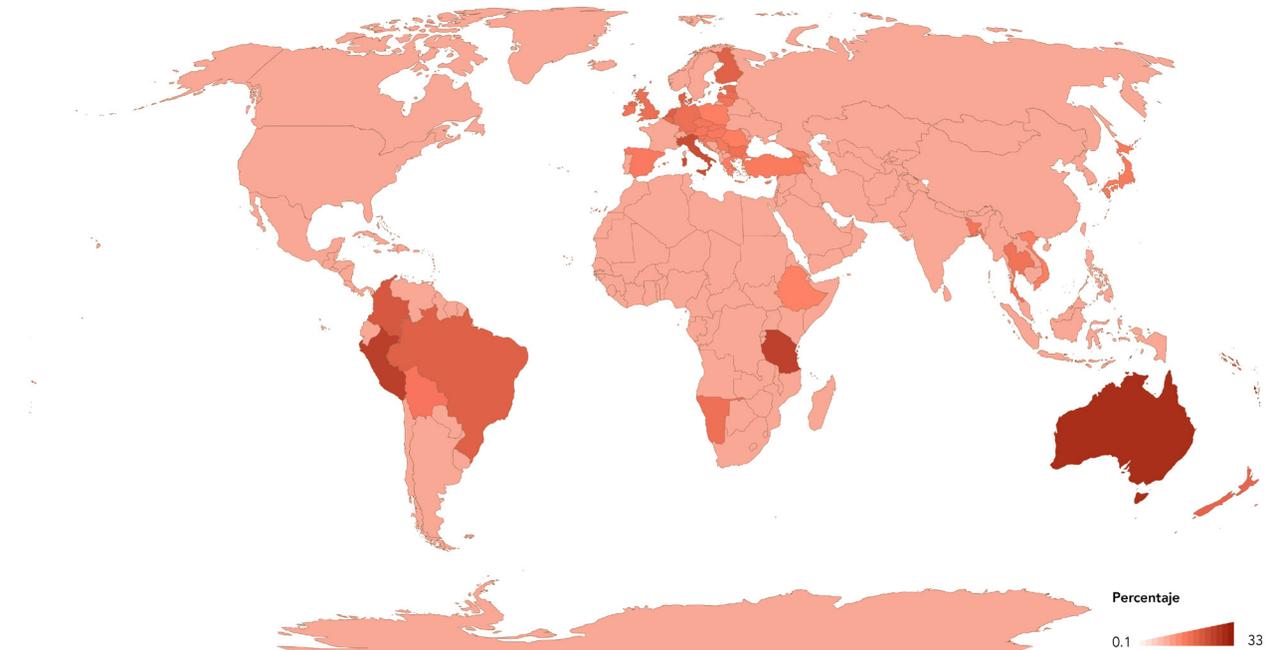


Source: United Nations Statistics Division



**Figure 4.3**

Percentage of women and girls aged 15 years and older subjected to sexual violence by persons other than an intimate partner in the previous 12 months (most recent year, 2000–2014)



Source: United Nations Statistics Division

Beyond the UN data on intimate and non-intimate-partner violence, some other organisations collect data on cyber VAWG. The EU Agency for Fundamental Rights (European Union) deployed a survey in 2014 which included questions on cyber stalking and cyber harassment. In the U.S., the Pew Centre conducted a survey on online harassment in 2017. In developing countries, attempts to measure the problem are mostly spearheaded by NGOs and are donor-funded. For example, the Women’s League Bureau (2015) through the Association for Progressive Communication has carried out research and country case studies on online gender-based harassment. In Pakistan, the Digital Rights Foundation’s Hamara Internet project in 2017 included attempts to measure women’s experiences of online violence. The study revealed that 40% of women in Pakistan had faced various forms of harassment on the internet, and most complaints related to harassment on Facebook. In all these studies, the figures reported are likely to be underestimates, due to the issue of under-reporting.

#### 4.2.3 / RESPONDING TO CYBER-VAWG

While reliable data is lacking on the incidence of cyber violence against women, international organisations track legislation that can help address this problem. The UNCTAD Global Cyberlaw Tracker maps the status of cyberlaws in 194 UNCTAD member states, focusing on the state of e-commerce legislation in the fields of e-transactions, consumer protection, data protection or privacy, and cybercrime. As of May 2018, 140 countries or 72% of the 194 member states have enacted legislation related to cybercrime, and 112 countries — 58% of countries worldwide — have enacted laws related to data privacy and protection (Table 4.1).

**Table 4.1**

Status of cybercrime and data privacy laws worldwide (May, 2018)

|                             | ICT MINISTRY | DRAFT LEGISLATION | NO LEGISLATION | NO DATA  |
|-----------------------------|--------------|-------------------|----------------|----------|
| CYBERCRIME LEGISLATION      | 140 (72%)    | 18 (9%)           | 35 (18%)       | 1 (1%)   |
| DATA PRIVACY AND PROTECTION | 112 (58%)    | 19 (10%)          | 40 (21%)       | 23 (12%) |

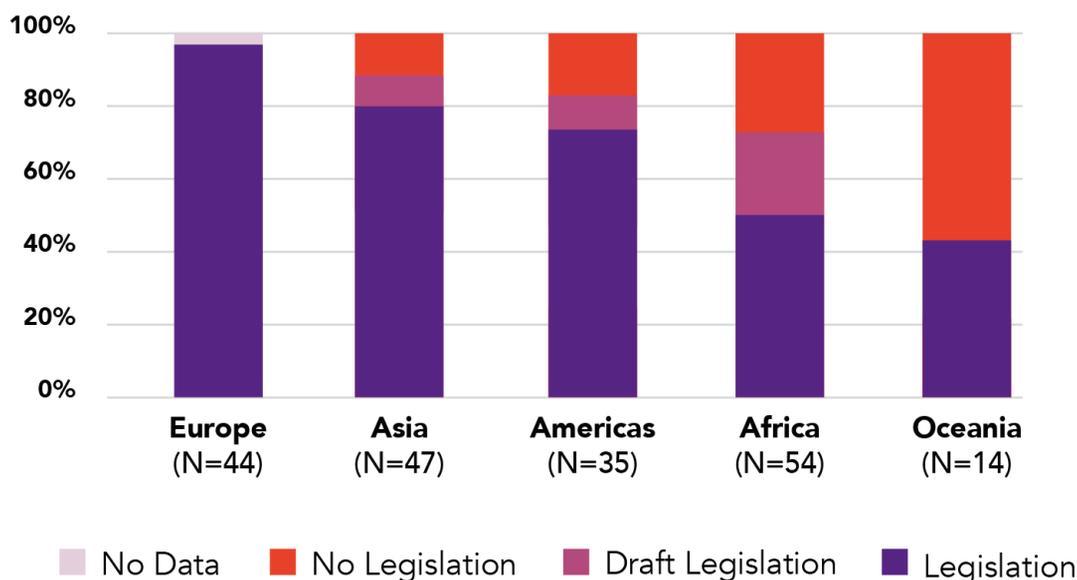
Source: UNCTAD Global Cyberlaw Tracker, 2018

Europe leads the other regions in terms of enacting cybercrime legislation, with 43 countries having passed a law related to cybercrime. Only the Vatican

has no data reported. Out of the 35 countries with no cybercrime law, 15 are in Africa, 8 in Oceania, and 6 each in Asia and the Americas (Figure 4.4).

**Figure 4.4**

Status of cybercrime legislation by region (May, 2018)



Source: UNCTAD Global Cyberlaw Tracker, 2018

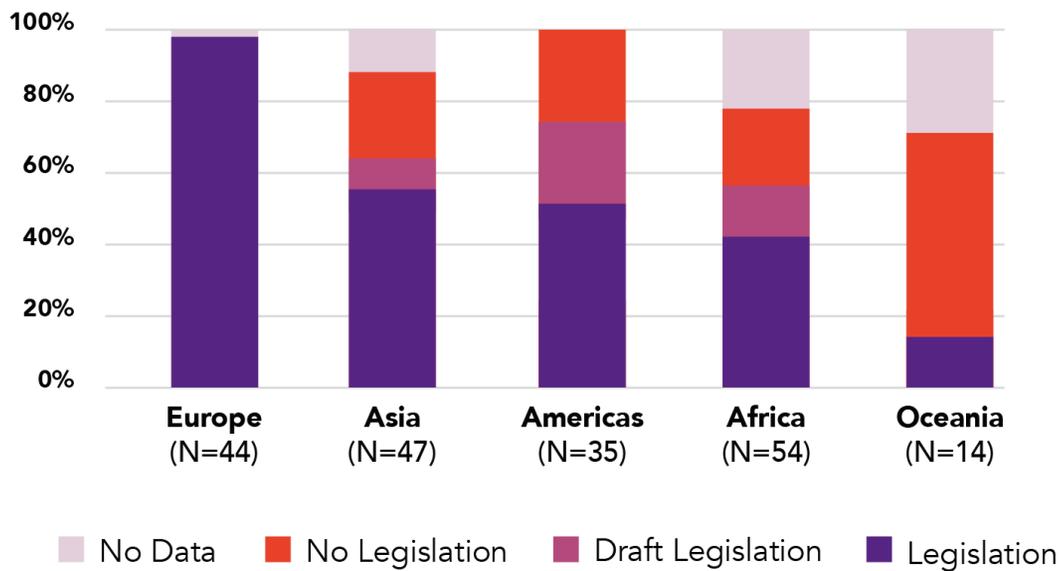
Apart from the Vatican, all countries in Europe have also adopted legislation to protect data. In other regions, several countries have no legislation related to

data protection and privacy: in Asia (11), the Americas (9), Africa (12), and Oceania (8), as of May, 2018 (Figure 4.5).



**Figure 4.5**

Status of data protection and privacy legislation by region (2018)



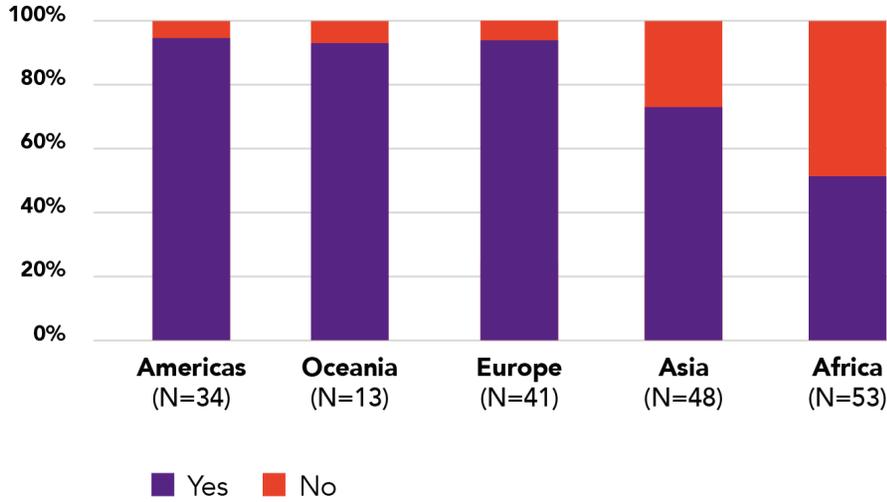
Source: UNCTAD Global Cyberlaw Tracker, 2018

Despite existing legal frameworks, reporting of cybercrime cases can be challenging for women, as social obstacles can prevent them from accessing the justice system. In Pakistan for example, reporting online harassment requires disclosing one’s phone number and identity card, which can expose victims to further harassment. Moreover, leaving the house to visit the local police office would often require the accompaniment of a male guardian, which can be problematic if the perpetrator is a relative (Toppa, 2017).

In broader terms, we can also examine data on national legislation that addresses all types of violence against women and girls. The Women, Business and the Law Report (World Bank Group, 2018) collates data on various measures of gender discrimination that affect women’s full participation in the economy, viewed

from a legal perspective. More than 50% of countries globally have enacted legislation against domestic violence. More than half of the countries with no domestic violence legislation are located in Africa, where 26 countries have yet to pass such legislation (Figure 4.6).

**Figure 4.6**  
Domestic violence legislation by region (2018)

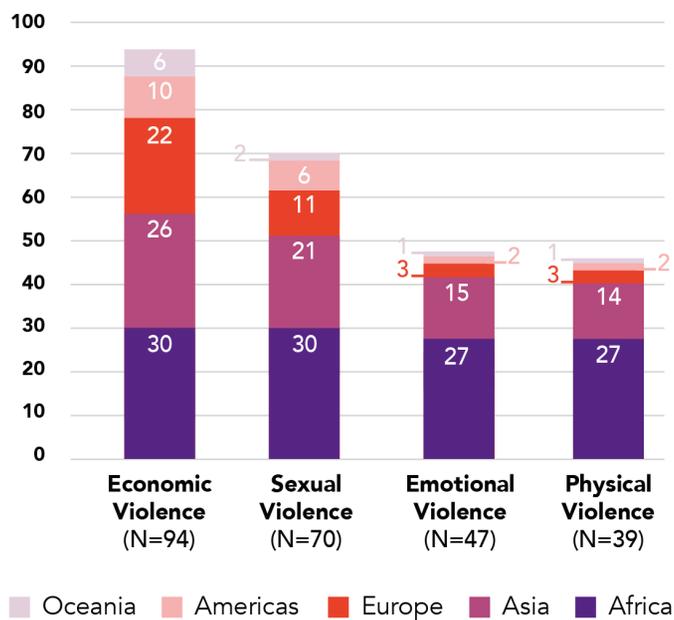


Source: World Bank, 2018.

Violence against women and girls comes in different forms — economic, sexual, emotional, and physical. Out of 189 countries surveyed in the World Bank report, the type of abuse with least legislation is

economic violence, followed by sexual violence, emotional violence, and finally physical violence (Figure 4.7).

**Figure 4.7**  
Countries with no coverage on the different domains of violence against women (2018)



Source: World Bank, 2018.



## 4.3 / SEXUAL HARASSMENT

In recent years, several gender-related scandals in the technology industry have dominated the news headlines, pointing to a culture of gender-based discrimination and harassment that discourages women from pursuing technology careers or that makes professional life challenging for those who stay. Although sexual harassment is often discussed in the context of the workplace, other areas such as public education and the public sphere are increasingly becoming recognised as sites of harassment (National Academies of Sciences, Engineering, and Medicine, 2018; World Bank, 2018).

Increased access to ICTs unfortunately means increased potential to experience sexual harassment, not only through cyber violence but also in offline spaces such as cybercafés. Likewise, increased access to educational and professional opportunities in male-dominated STEM and related areas also increases the possibility of encountering unwelcoming or hostile masculine environments. These environments act as barriers to entry or access for some females, and as physical and psychological burdens to those who choose or need to endure them. For example, one in ten female tech job leavers in the U.S. reported having experienced unwanted sexual attention in their last job (Tech Leavers Study, 2017). A similar problem affects men, as one in twelve men in the same study had also received unwanted sexual attention.

According to National Academies of Sciences, Engineering, and Medicine (2018, p. 52), academic environments (and especially science, engineering, and medicine education environments) present several of the features that create a high risk of sexual harassment (Box 4.3). Their study found that more than 50% of science, engineering, and medicine faculty and staff had encountered sexual harassment perpetrated by faculty, staff, and students.

### Box 4.3

Conditions that foster sexual harassment in academic settings

- Male-dominated environment, with men in positions of power and authority
- Organisational tolerance for sexually harassing behaviour (e.g., failing to take complaints seriously, failing to sanction perpetrators, or failing to protect complainants from retaliation)
- Hierarchical and dependent relationships between faculty and their trainees
- Isolating environments (e.g., labs and field sites) in which faculty and trainees spend considerable time

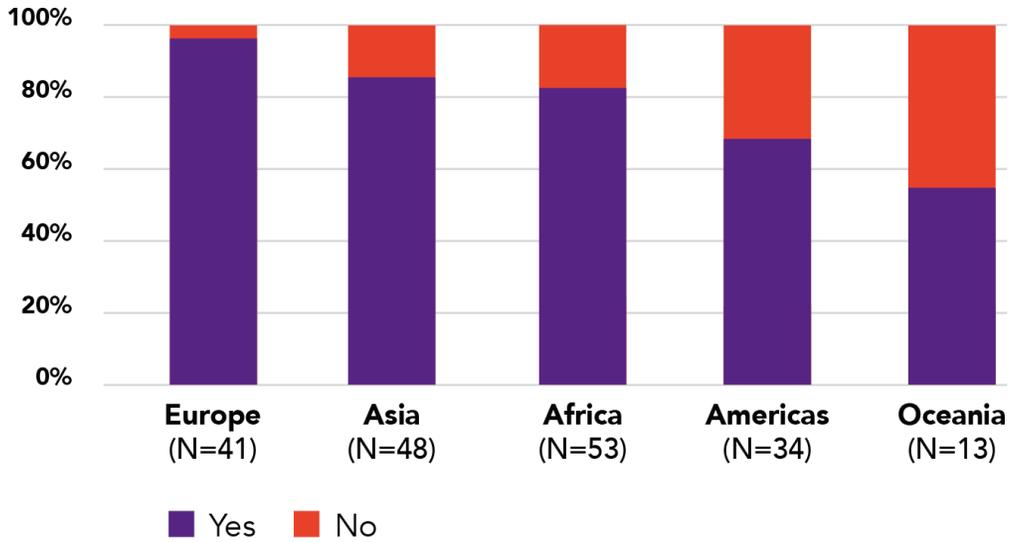
Source: National Academies of Sciences, Engineering, and Medicine, 2018, p. 172.

As women increasingly participate in online communities, the backlash against the changing status quo can include sexual harassment. A study by Toupin (2014) reports female hackers regularly experiencing groping, harassment, and discrimination, especially at hacker conferences and hackerspaces. Beyond verbal abuse and misogynist behaviours, some feminist hackers have also received rape and death threats.

The extent of sexual harassment experienced by women is difficult to estimate, as there is limited official data on this topic. We instead review data on the prevalence of legislation prohibiting sexual harassment. Globally, a majority of economies (more than half in each region) have enacted legislation on sexual harassment. As of 2018, only 35 out of 189 countries lack relevant legislation; the majority are in the Americas (11), followed by Africa (9), Asia (7), Oceania (6), and Europe (2) (Figure 4.8).

**Figure 4.8**

Percentage of countries by region with legislation dealing with sexual harassment (2018)



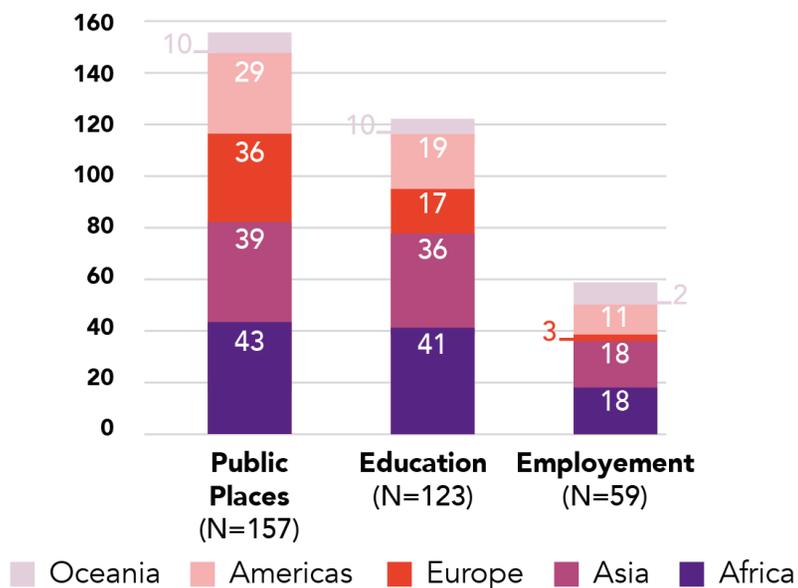
Source: World Bank, 2018.

Regarding contexts of sexual harassment, there is widespread legislation on sexual harassment in the workplace. Out of the 189 countries surveyed by the World Bank, only 59 countries (31%) have yet to pass such legislation (Figure 4.9). In Europe, Africa, and the

Americas, such legislation is often designed to protect both men and women (Figure 4.10). For other contexts, the vast majority of countries have no legislation dealing with sexual harassment in schools (65%, or 123 countries) or in public spaces (83%, or 157 countries).

**Figure 4.9**

Number of countries with no legislation on sexual harassment in the following areas (2018)

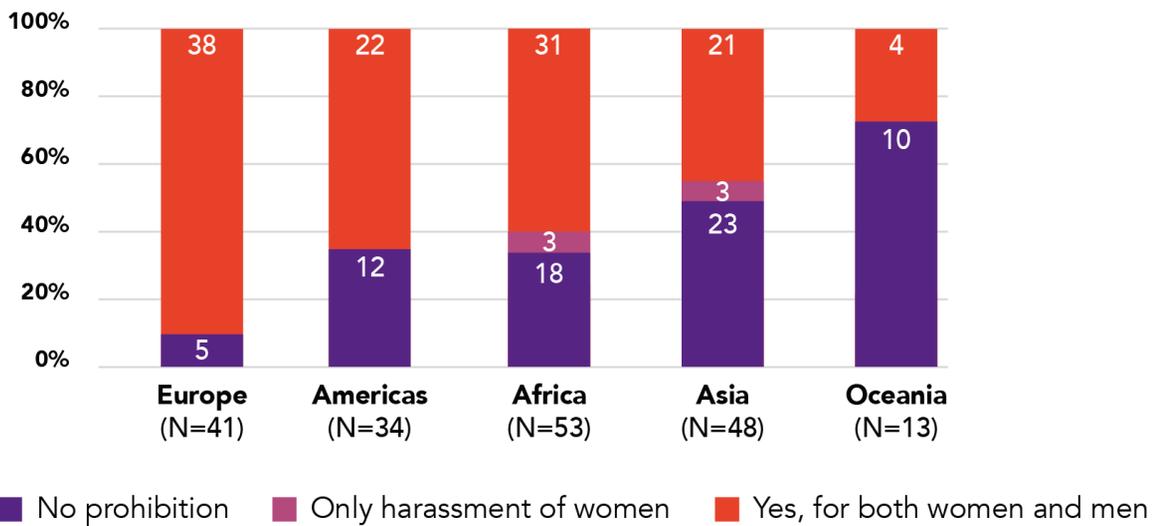


Source: World Bank, 2018.



**Figure 4.10**

Legislation explicitly prohibiting sexual harassment in the workplace (2016)



## 4.4 / DISCRIMINATION

Simply having more women students, employees, managers, or entrepreneurs in the ICT industry does not mean that gender disadvantage has been erased; the conditions under which women participate may also contribute to perpetuating inequality. Gender-based discrimination in occupational settings may be either overt or subtle, and it tends to affect women more than men. Types of gender-based discrimination include: unfairness in hiring, firing and promotions; unequal pay; unequal access to professional advancement opportunities; and unconscious biases. In this section we discuss two broad areas that affect genuine gender equality in ICT occupations: pay gaps and discriminatory work environments.

### 4.4.1 / GENDER PAY GAP

Unequal pay for the same work is one of the more enduring forms of gender-based discrimination in the workplace. At the global level, there has been a persistent unaccounted-for gender pay gap, although the gap is narrowing for certain professions (ILO, 2016). The Global Wage Report for 2016/17 assesses national-level gender pay gaps at between 0% and 45%, noting that the gap is almost 50% at higher levels of pay (ILO, 2016)<sup>20</sup>. Global data specific to the ICT industry are unavailable. However, ILO’s research indicates that gender pay inequality is higher in enterprises and occupations with higher average pay. Since the ICT

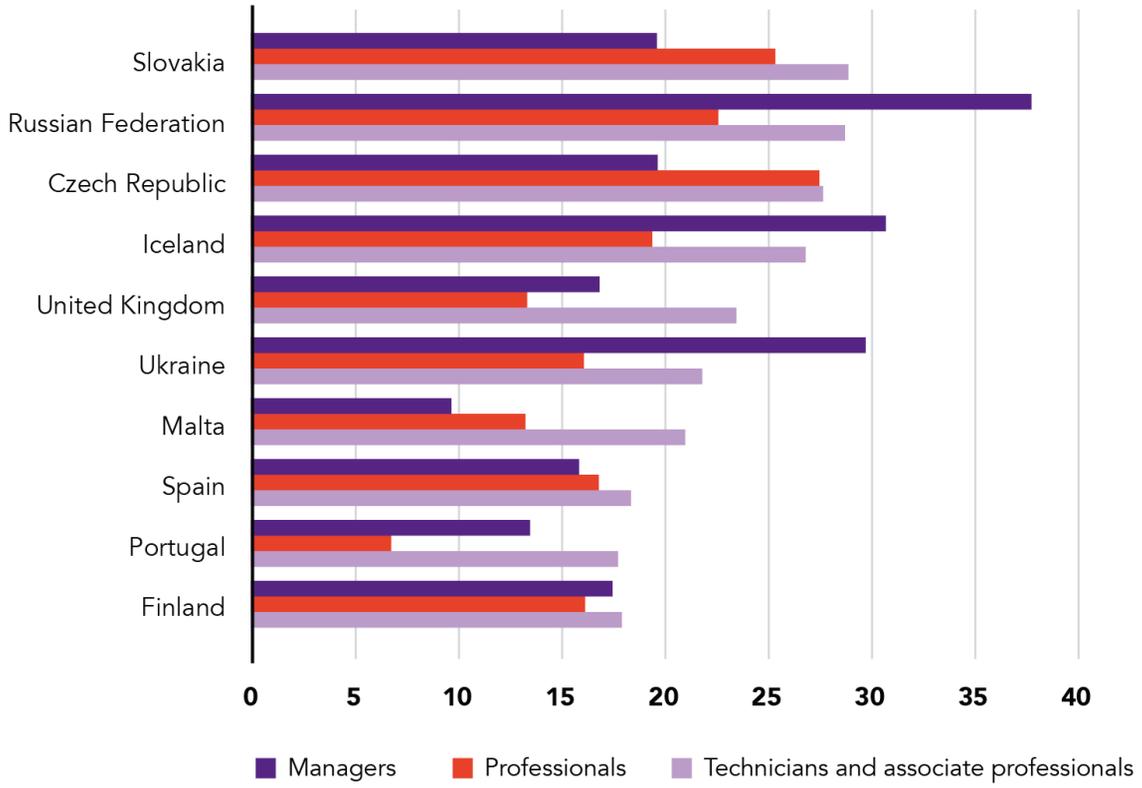
industry falls within the group of enterprises associated with higher levels of pay (ILO, 2018; US Government Accountability Office, 2017), it could be assumed that it would also exhibit higher gender pay gaps. However, the United States Department of Commerce (2017, p. 1) reports a smaller gender pay gap in STEM occupations than in non-STEM occupations.

We examined ILO data on occupational gender wage gaps, focusing on three categories: managers; professionals; and technicians and associate professionals. The raw data is difficult to interpret, as it shows contrasting patterns depending on the region or country (Figures 4.11–4.13). There is currently no data on gender pay gap by occupation for Africa and Oceania.

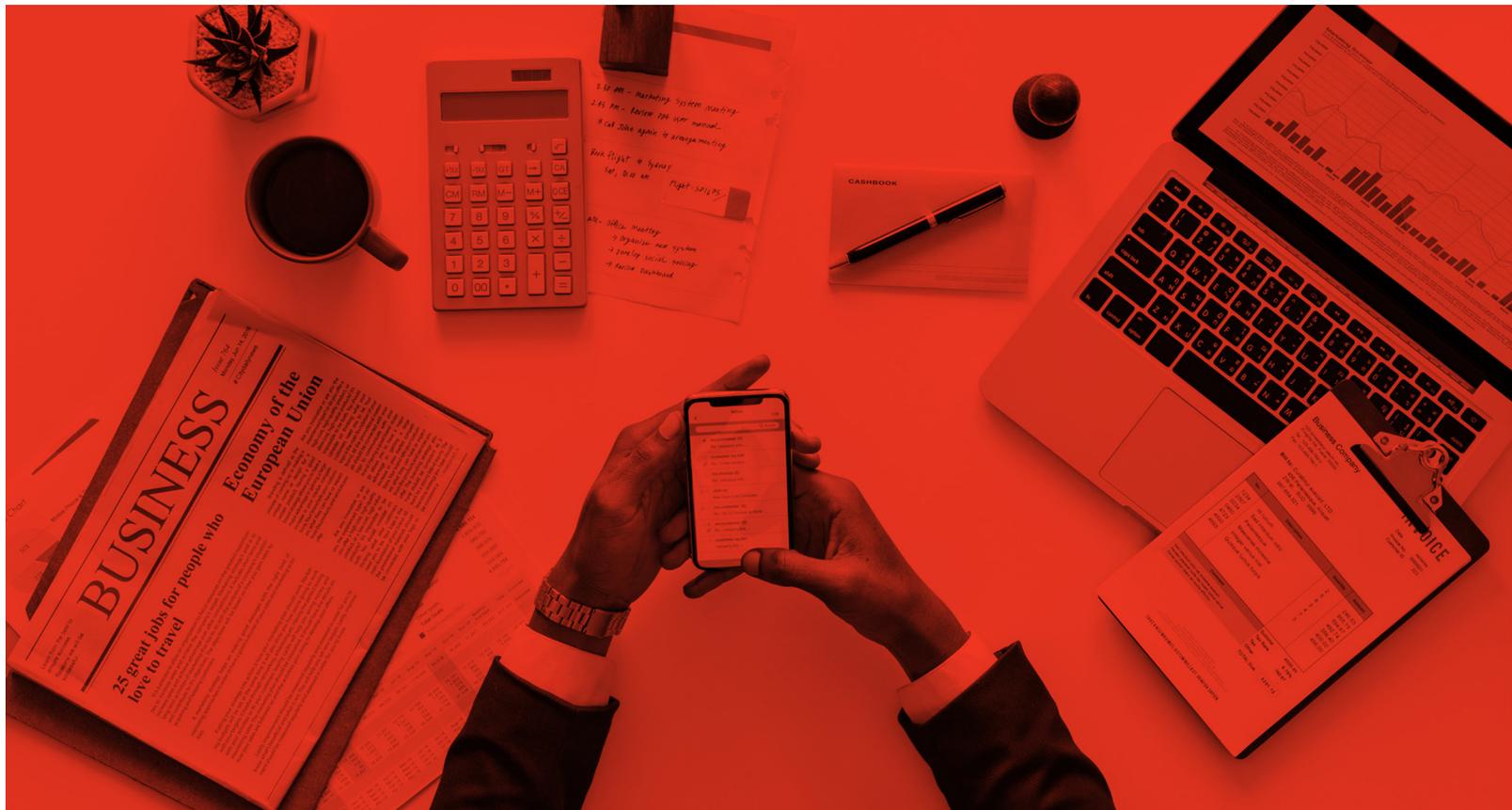
In Europe, where data is available for 10 economies, a pay gap exists in favour of male workers at all three professional levels, ranging from 6.6% to 38%. The Americas show a similar trend for the six reporting economies: mostly higher wages for men (by 2% to 25%), except for managers and technicians in Belize. The seven reporting economies in Asia show male workers earning more than female workers in most cases (from 2% to 33% more); however, in some cases women earn more than their male counterparts – e.g., professionals in Thailand, managers in Pakistan, and technicians or associate professionals in Brunei. Notwithstanding ILO’s (2016) finding of higher gender pay gaps at higher levels of pay, the limited data for these three categories shows no clear hierarchy of gaps. The management category does not always have the largest pay gap; in Russia, Iceland, and Pakistan, the largest pay gap is among technicians or associate professionals.

<sup>20</sup> Covering 46 countries, of which 22 are in Europe; data is for 2013 or earlier.

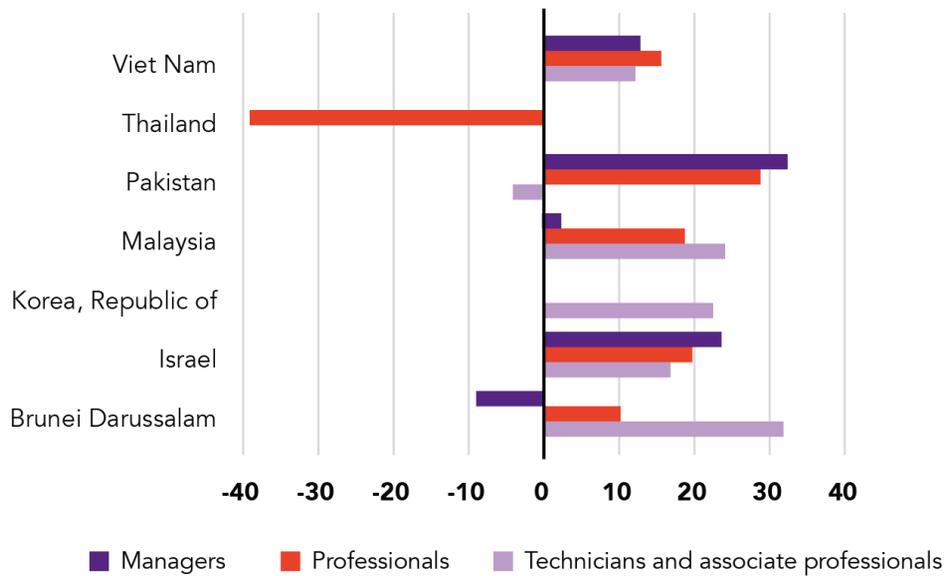
**Figure 4.11**  
Gender wage gap by occupation (%),  
Europe (2014–2016)



Source: ILOSTATS

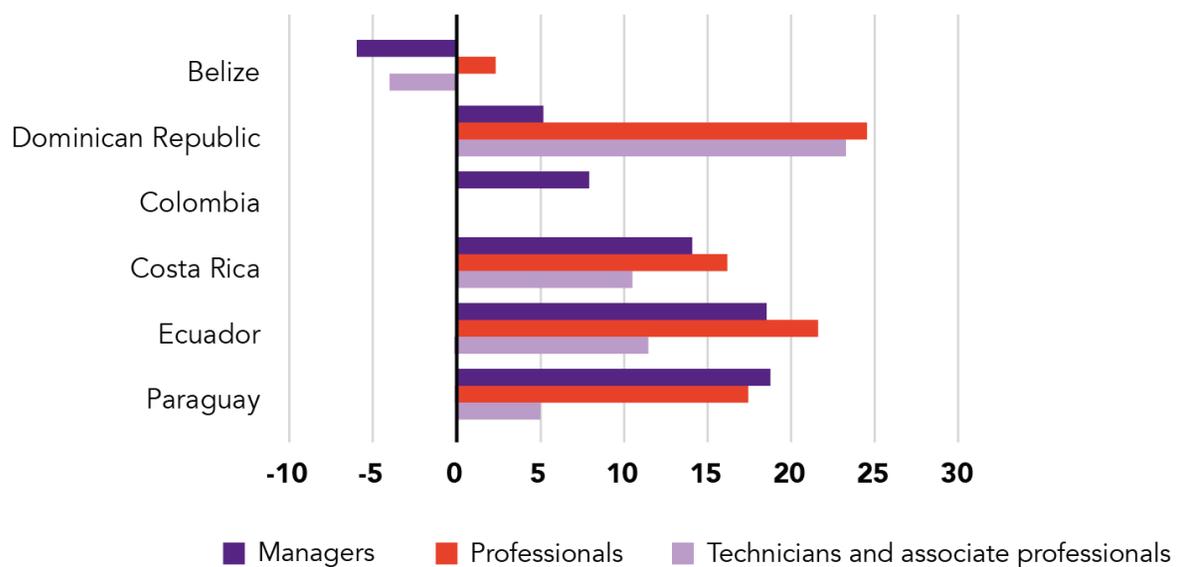


**Figure 4.12**  
Gender wage gap by occupation (%), Asia (2014–2016)



Source: ILOSTATS

**Figure 4.13**  
Gender wage gap by occupation (%), Americas (2015–2016)



Source: ILOSTATS

There is insufficient longitudinal data to determine trends. For the few countries with data for both 2010/2011 and 2014, the picture is mixed: the gap widens, narrows, or stays the same for some occupations in some countries, with no clear pattern. For example, in Portugal the gap for managers increases by under 1%, while for professionals it decreases by 2%, and for technicians and associate professionals it increases by about 3%. Conversely, in Malaysia, the trend shows a 7% increase for managers, 0.6% decrease for professionals, and 0.1% decrease for technicians and associate professionals.

Reasons frequently cited for the gender pay gap include gendered differences in occupation, expertise, experience, and work patterns (Ardanaz-Badia & Rawlings, 2018; Cook, Diamond, Hall, List, & Oyer, 2018; ILO, 2018). Research has shown, however, that a gender pay gap remains after controlling for such factors. A UK study found that female IT professionals earned 11% less than male IT professionals, even after accounting for number of working hours (BCS, 2017). The career review platform Glassdoor conducted an analysis of 505,000 salaries, controlling for variables such as age, education, experience, occupation, industry, location, company, and job title (Zarya, 2016). The results showed that even when workers were almost identical in every way except gender, the gender pay gap for technology workers (at 28.3%) was several times higher than the gender pay gap for all workers (5.9%). ILO (2018, p. 95) recommend more attention to identifying the “‘unexplained’ part of the gender pay gap”. (See also Part II Chapter 7 of this report, which examines differences in skill endowments and returns to skills between men and women in digital and less digital-intensive industries.)

#### 4.4.2 / DISCRIMINATORY WORK ENVIRONMENTS

Quirós et al. (2018, p. 10) report that women in the European digital workforce experienced gender discrimination more than men, and they felt less able to enforce their ideas. Likewise, Hewlett & Sherbin (2014) found that over a quarter of female science, engineering, and technology workers in their study of three high ICT countries said they felt stalled in their careers: China (23%), U.S. (27%), Brazil (29%) and India (45%). Between 20% and 32% said they were likely to quit their jobs within a year (Hewlett & Sherbin, 2014). Over 50% of female cybersecurity professionals report having experienced discrimination in the workforce (Frost & Sullivan, 2017). Subtle forms of discrimination include heavier scrutiny accorded to female than male applicants (Blair-Loy et al., 2017). Furthermore, a culture of ostensible openness, technology neutrality, and meritocracy may perversely reinforce gender discrimination, as Nafus (2012) found within the Free Libre Open Source Software community.

One of the few studies of why people leave technology jobs found that technical workers (at 40%) were more likely than non-technical workers (32%) to leave jobs in the U.S. technology industry due to unfairness (Scott, Kapor Klein, & Onovakpuri, 2017).<sup>21</sup> Perceptions of unfairness were higher in the tech industry (42% of leavers) than in the non-tech industry (32% of leavers) and was a major reason for both men and women to leave their tech jobs. Overall, employees within the technology industry report unwanted sexual attention at almost double the rates (10%) reported by tech employees in other industries (6%). These findings suggest that the technology industry has a particularly deep problem with unfairness and inappropriate sexual behaviour.

Female technology workers typically respond to discriminatory work environments either by changing jobs or developing strategies to avoid or rationalise their participation, such as downplaying their femininity, adopting male behaviours, enduring the organisational culture, or adopting the veneer of “professionalism” as a coping mechanism (Alfrey & Twine, 2017; Annabi & Lebovitz, 2018; Servon & Visser, n.d.). For instance, when online, some female developers masquerade as males to avoid discrimination (Vasilescu et al., 2015).

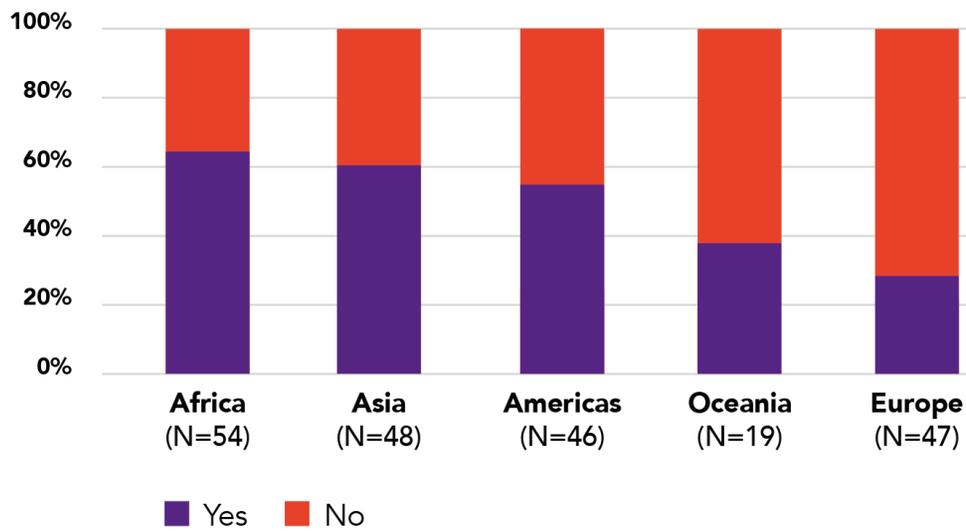
Various national policies address discriminatory work environments, including constitutional provisions on gender discrimination as well as implementing legislation related to professional advancement, training and pay. Overall, most economies have some legislation in place. Europe has the strongest record of legislation protecting against discrimination across the four areas shown in Figures 4.14 to 4.17, although only a few countries in Europe include any mention of gender in their constitutions’ non-discrimination clauses (Figure 4.14). In all regions except Oceania, more than 51% of countries have legislated against each type of discrimination.

<sup>21</sup> Scott, Kapor Klein, & Onovakpuri (2017) is the report on a nationally-representative survey of U.S. adults who have left a job in a technology-related industry or function within the last three years.



**Figure 4.14**

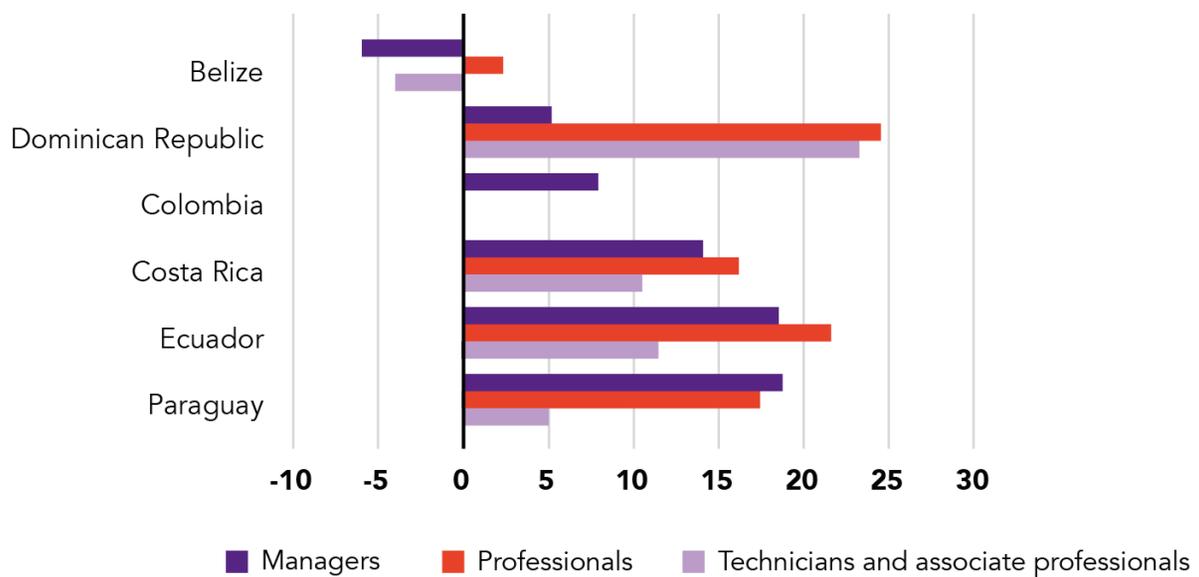
National constitution mentions gender in non-discrimination clause



Source: World Bank  
 Note: West Bank and Gaza = Palestine. Kosovo data included in Europe.

**Figure 4.15**

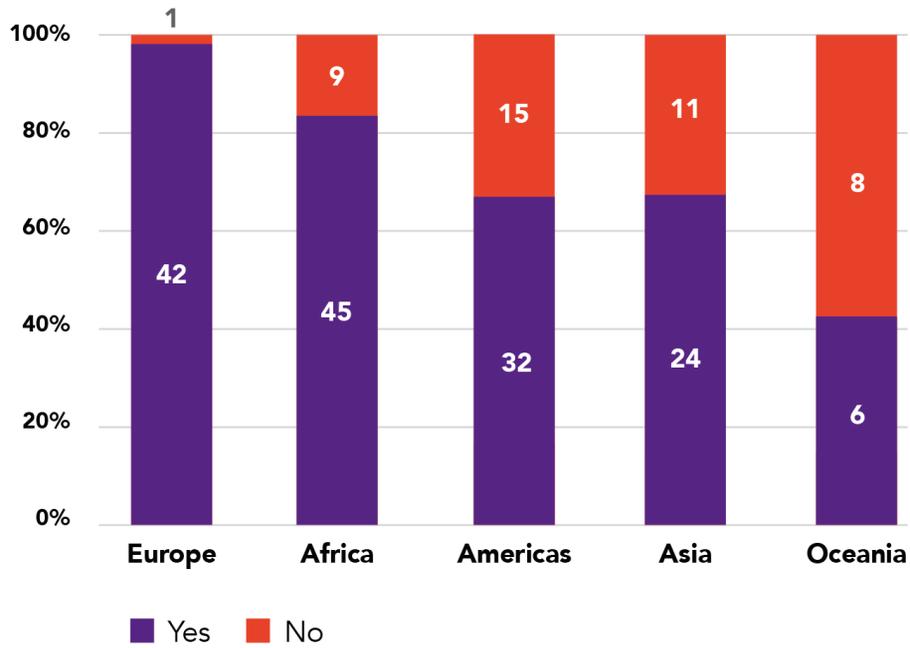
National constitution mentions gender in non-Legislation protecting women from discrimination in promotion or demotion



Source: World Policy Research Center, Discrimination at work database

**Figure 4.16**

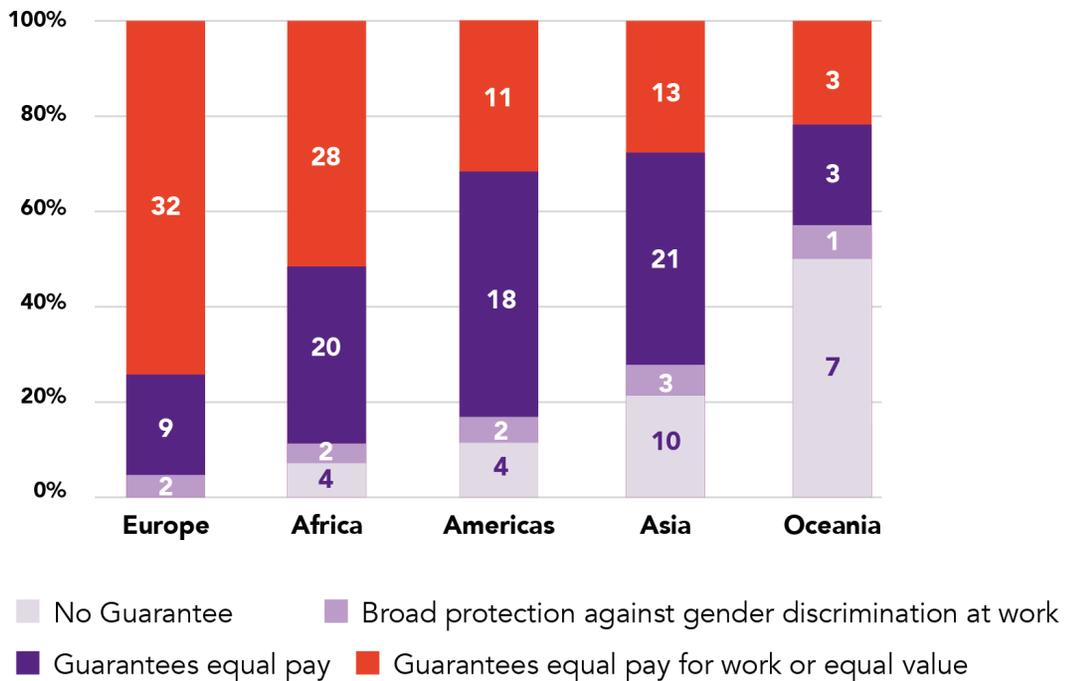
Legislation protecting women from discrimination in access to vocational training



Source: World Policy Research Center, Discrimination at work database

**Figure 4.17**

Legislation guaranteeing equal pay



Source: World Policy Research Center, Discrimination at work database



## 4.5 / WORK AND LIFE BALANCE

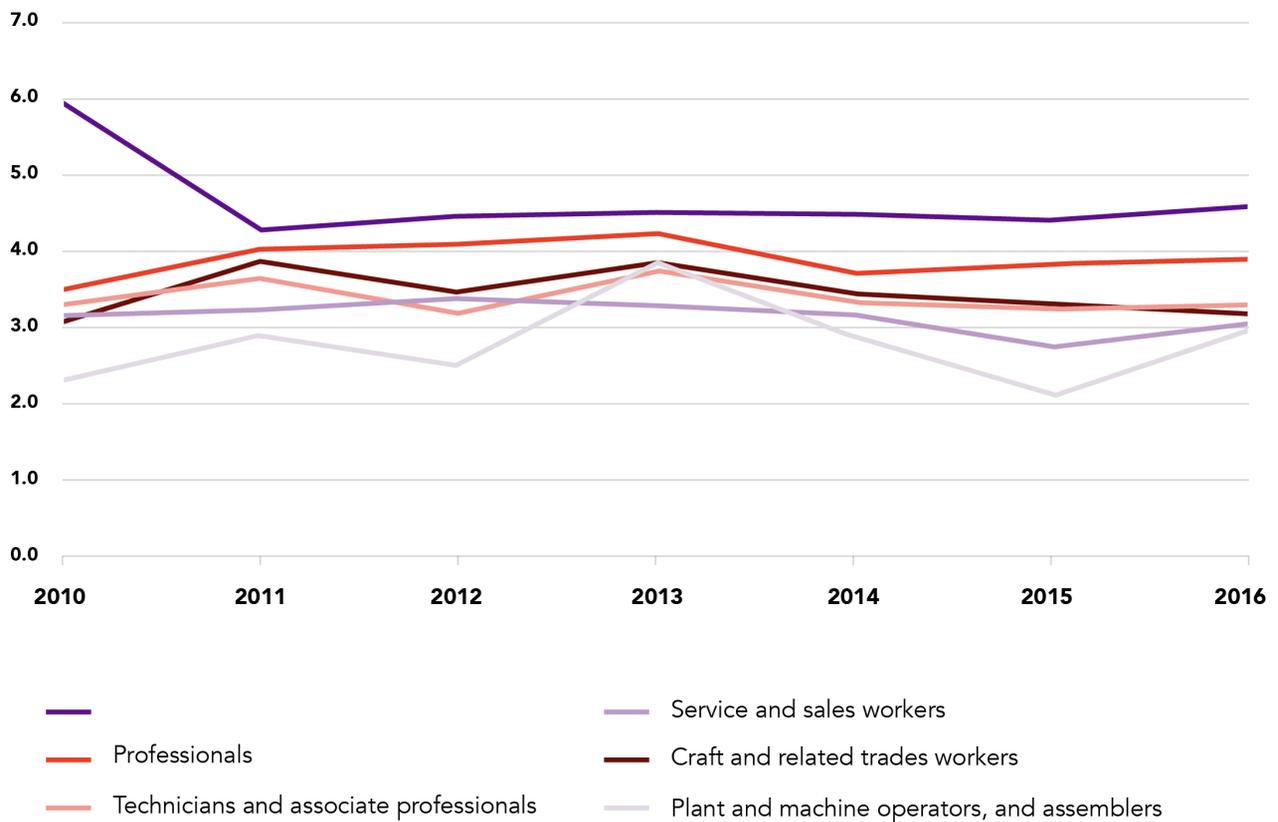
Several authors have argued that a masculine-oriented work model pits work-devotion against family-devotion, and the associated tension can lead to overload for women in technology professions (Blair-Loy & Cech, 2017; Bright Horizons, 2017; Weisgram & Diekman, 2015). The number of hours men and women work, and the prevalence and distribution of unpaid domestic and care work, serve as indicators of work and life balance.

### 4.5.1 / NUMBER OF HOURS OF WORK

The labour force data shows that women generally work fewer paid hours than men and spend a much larger proportion of their time than men on unpaid domestic and care work. In all six occupations represented in Figure 4.18, men consistently work more hours than women. discrimination, as Nafus (2012) found within the Free Libre Open Source Software community.

**Figure 4.18**

Global gender gap in mean weekly hours of work per employee, by sex and occupation



Source: Author's computation of ILO data.

Note: Computed by subtracting mean hours of work (men) from mean hours of work (women). Zero means no difference in mean hours of work. Above zero means men work more hours than women, below zero means women work more hours than men. Data might be skewed; for some job categories there is more data for men than women.

This tendency to work fewer hours could reflect women's personal choices, and a variety of considerations may factor into their choices, such as a desire for flexible work arrangements because

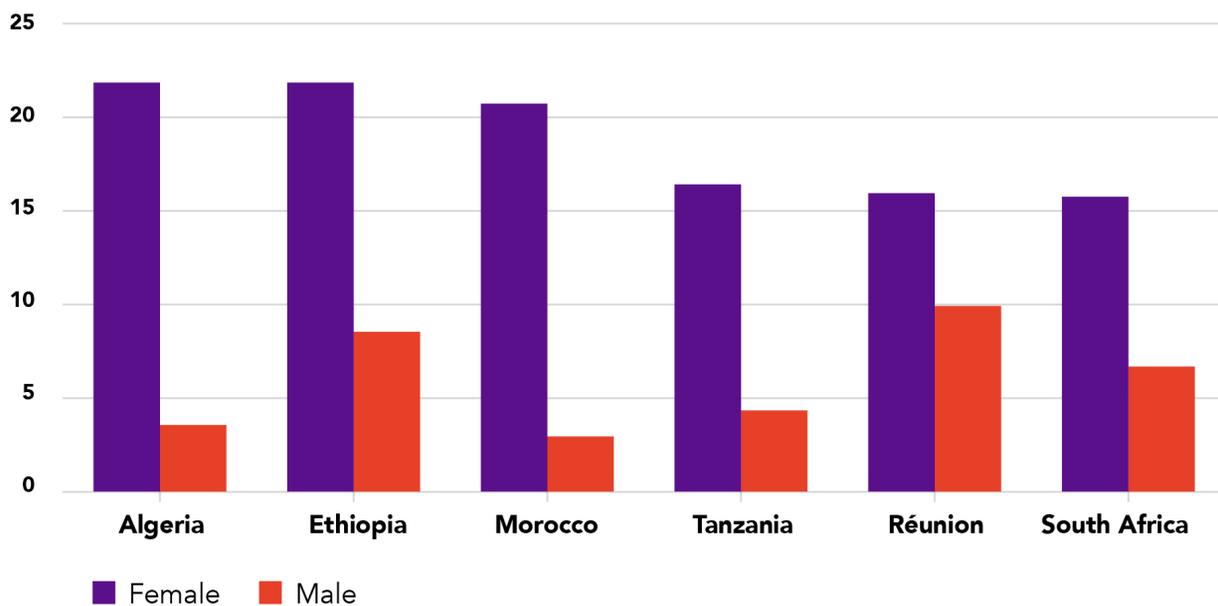
of other social roles and personal values. Efforts to address gender inequality in employment that do not target these quality of life issues are unlikely to achieve maximal impact.

### 4.5.2 / UNPAID DOMESTIC AND CARE WORK

Data on this indicator is sparse for most regions, but it shows that compared to men, women spend a much larger proportion of their time on unpaid domestic and care work, at 10%–28% for women versus 3%–10% for men (Figures 4.19–4.22). Erosa, Fuster, Kambourov, & Rogerson (2017) provide some evidence of impact on labour force participation, arguing that an “asymmetry in household production” leads to women self-selecting out of occupations that reward long hours (p. 4). They conclude that a 10% reduction in women’s discretionary time, due to their nonmarket activities, causes a 14% reduction in their labour market participation and an 11% increase in the gender wage gap. Others such as Xie (2006) assert that having children is the most important factor preventing women from pursuing careers in science and engineering.

However, other scholars have argued that women’s primary reason for leaving technology jobs is not family-related but rather due to obstacles to achieving company and career goals (Ashcraft, McLain, & Eger, 2016; Hunt, 2010; Meiksins, Beddoes, Masters, Micah, & Shah, 2016). Sassler, Glass, Levitte, and Michelmore (2017) found no difference in the tendency for career-minded versus family-oriented women to enter computer science professions in the U.S. They also observed that being married and having children equally affected men and women’s propensity to work in computer science, leading to the conclusion that “is difficult to account for the factors associated with these employment disparities” (p. 19). Another issue is the potential quality-of-life compromises made by women in combining family and professional responsibilities. Some studies note the tension between work-devotion and family-devotion expectations, and the incidence of overload among women in technology professions (Blair-Loy & Cech, 2017; Bright Horizons, 2017; Weisgram & Diekman, 2015).

**Figure 4.19**  
Proportion of time spent on unpaid domestic and care work, Africa (2010–2014)

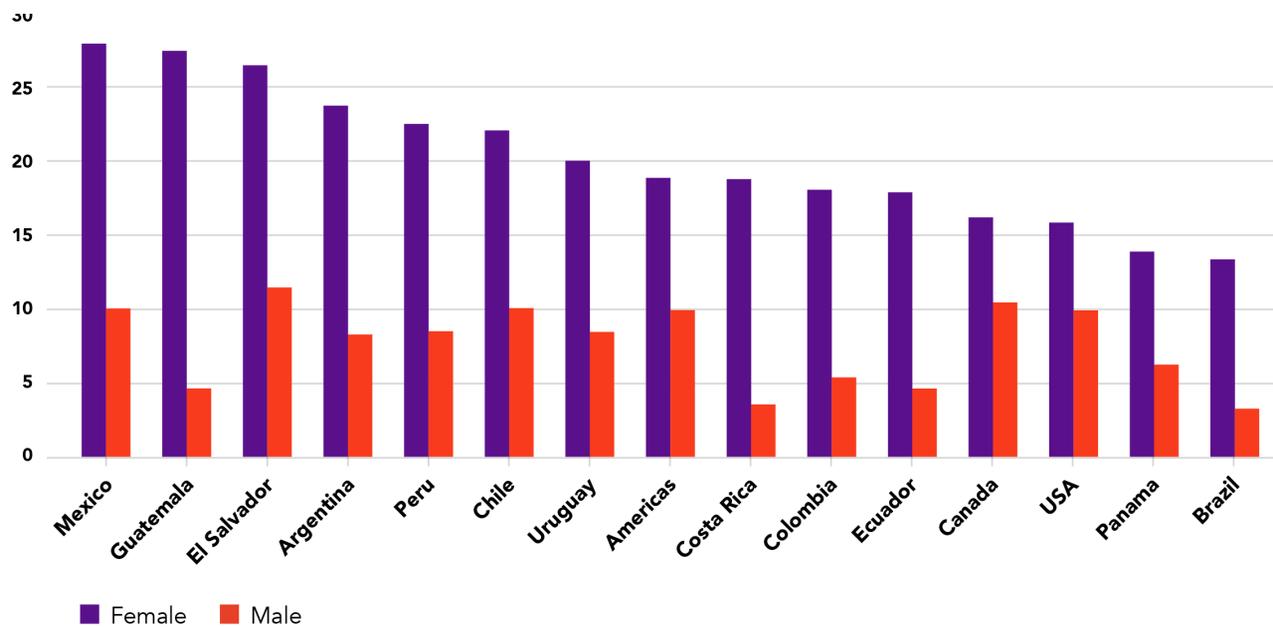


Source: ILO.



**Figure 4.20**

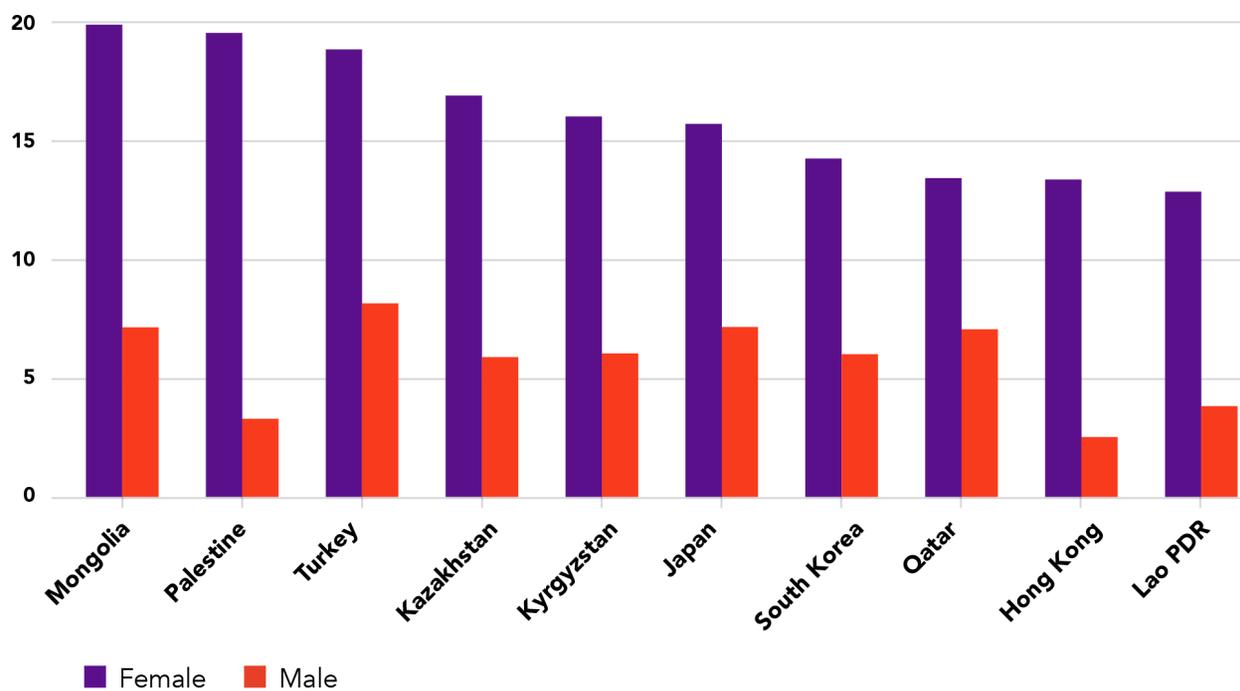
Proportion of time spent on unpaid domestic and care work, the Americas (2010–2015)



Source: ILO.

**Figure 4.21**

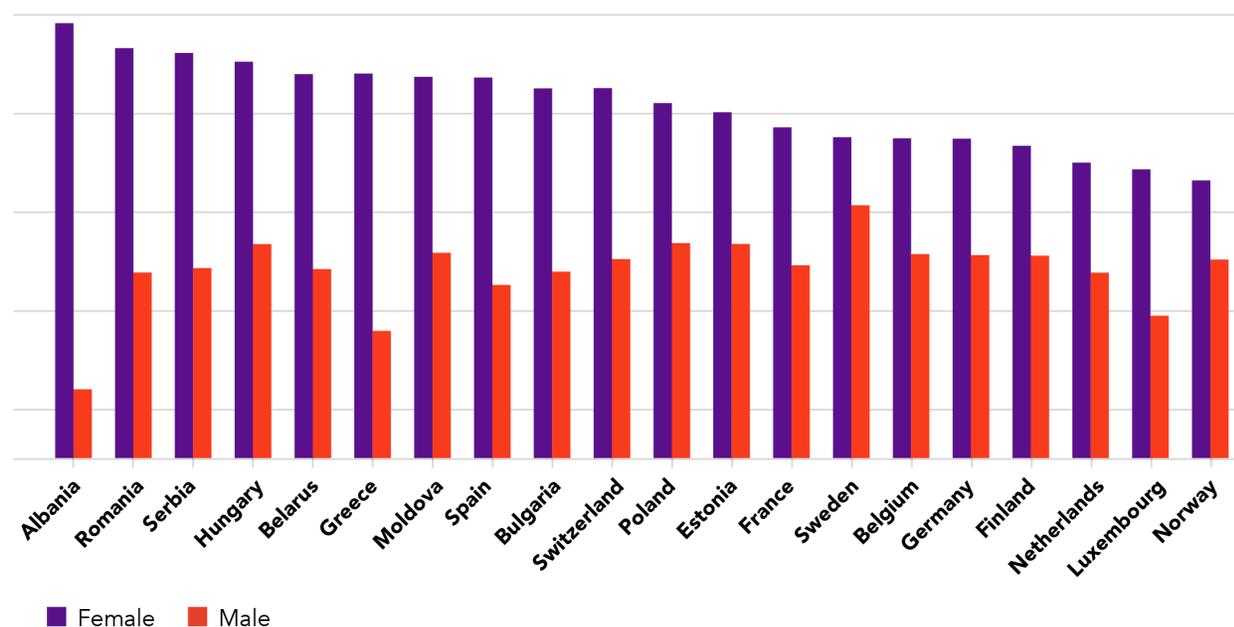
Proportion of time spent on unpaid domestic and care work, Asia (2011–2015)



Source: ILO.

**Figure 4.22**

Proportion of time spent on unpaid domestic and care work, Europe (2010–2015)



Source: ILO.

### 4.5.3 / PARENTAL LEAVE POLICIES

One major aspect of the unpaid care work that women often shoulder is child care. The extent to which organisations make it possible for women to combine motherhood with work can be a crucial factor affecting the size of the female work force. The World Policy Research Center tracks several gender policy indicators<sup>22</sup>, four of which are relevant for this discussion. The data shows that, at the policy level, most countries have some provisions to support working mothers. European countries tend to have the most generous policies, while countries in Oceania tend to have the least generous allowances (Figures 4.23–4.26). The U.S. is one of just two countries in the Americas with no legislated parental leave.

Fifty-eight per cent of European countries provide 52 weeks (one year) or more paid leave; in contrast, in Oceania and the Americas, over 70% of countries provide either no leave or less than 14 weeks (Figure 4.23). Most countries in Africa and Asia provide between 14 and 52 weeks paid maternal leave. Paid maternal leave also covers above 60% of salary in most countries (Figure 4.24). European countries are also the most generous in offering breastfeeding options: about 80% of countries (37 out of 45) allow paid breastfeeding breaks at work for six months; only seven countries have no such provisions (Figure 4.25). With the exception of Oceania (at 38%), a majority

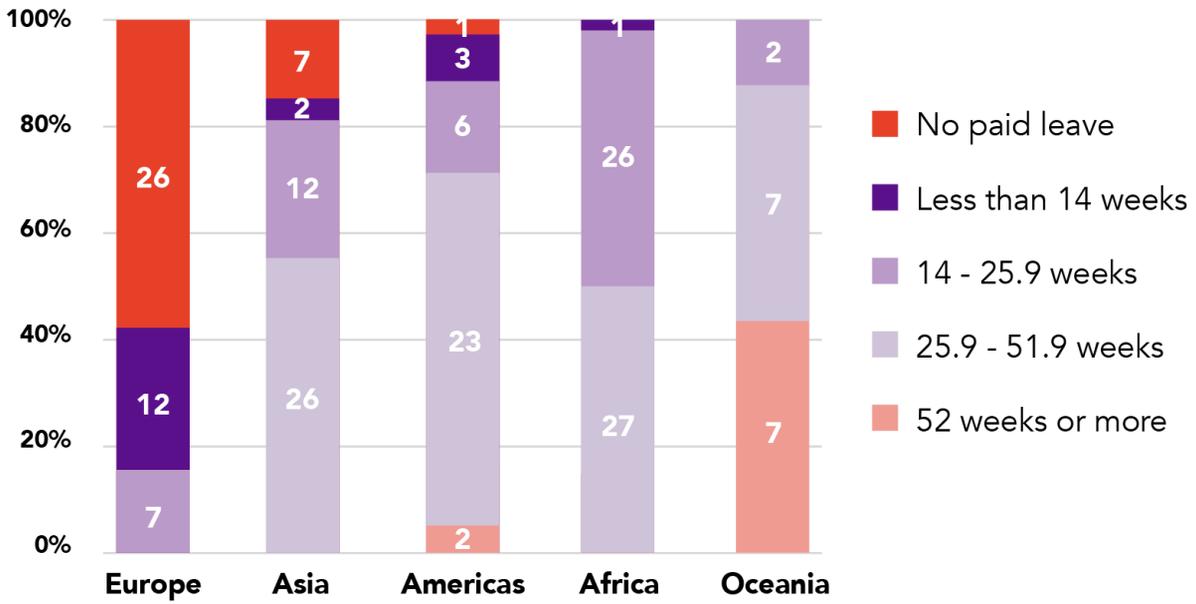
of countries in the other regions (57%–74%) also support paid breastfeeding breaks. While 50% (103) of countries worldwide guarantee either paid maternal leave or breastfeeding breaks at work for at least six months, only 43 countries (mostly in Europe) guarantee both (Figure 4.26). Again, Europe fares the best in this regard, with only one country failing to provide any guarantees. Oceania and the Americas have the largest proportion of countries not guaranteeing either option (63% and 40% respectively).

<sup>22</sup> Maternal and Child Health Equity (MACHEquity) research program.



**Figure 4.23**

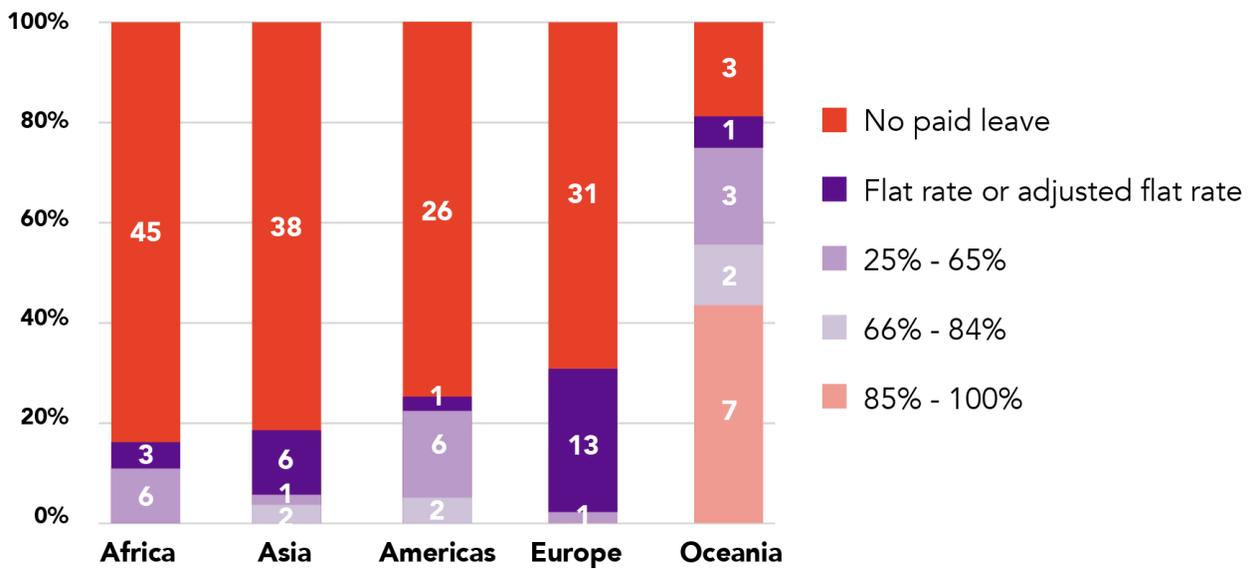
Paid leave available for mothers of infants (2013)



Source: World Policy Research Center, MACHEquity database.

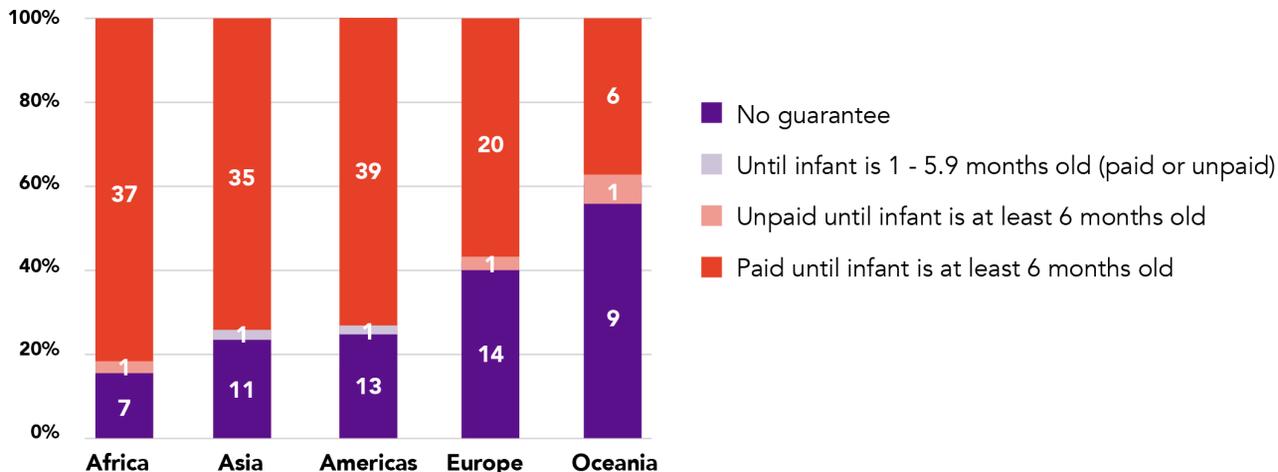
**Figure 4.24**

Maximum wage replacement rate of paid leave for mothers of infants (2013)



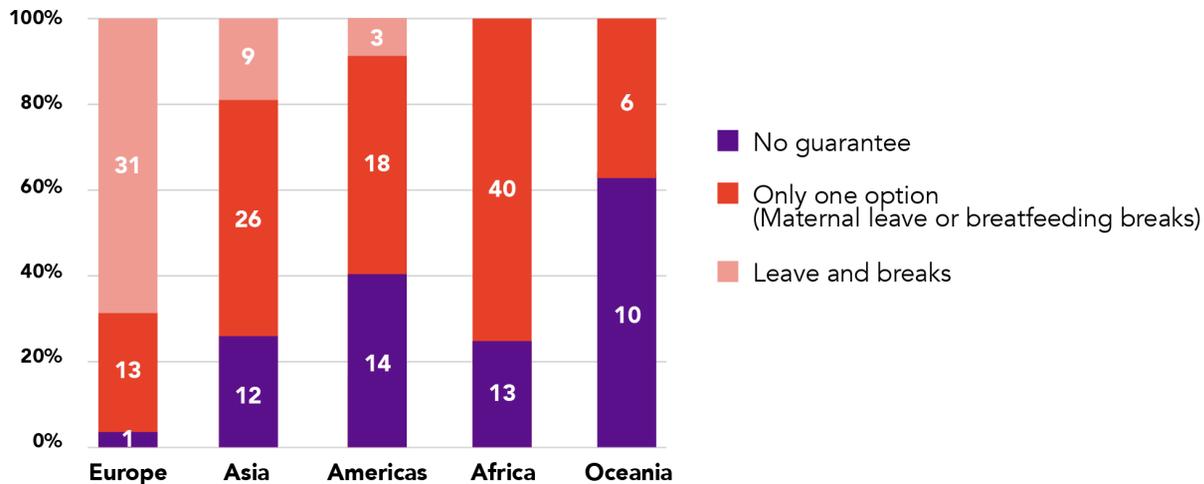
Source: World Policy Research Center, MACHEquity database.

**Figure 4.25**  
Paid leave available for mothers of infants (2013)



Source: World Policy Research Center, MACHEquity database.

**Figure 4.26**  
Working mothers guaranteed options to facilitate paid breastfeeding for at least six months (2013)



Source: World Policy Research Center, MACHEquity database.



## 4.6 / CONCLUSION

With violence against women widespread globally, access to ICTs increases the exposure of girls and women to cyberviolence. The response to this must include overall culture change in attitudes towards sexual harassment and all forms of gender-based violence. Similarly, as more women venture into STEM and related training and occupations, they risk exposure to sexual harassment and various forms of discrimination associated with the field. A dominant masculine-oriented work ethic also presents challenges for people interested in ICT careers but seeking greater work and life balance. However, from a gender perspective, our understanding of the dark side of ICT access, skills, and leadership is still very limited; much work needs to be done to collect relevant data and scope the issues. This is particularly challenging because of the complex issues involved and the evolving nature of ICTs and related landscapes.

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