

Gender Equality Index 2020: Digitalisation and the future of work

Gendered patterns in use of new technologies

Technology can be perceived as gendered in many ways, for example if the relationship between gender and technology is viewed as mutually constitutive: technological change is shaped and structured according to societal norms and relations, which are in turn influenced by technological transformations.

On the one hand, this means that the types of technologies used in different historical, political and cultural contexts, their design and meaning are created within gender relations and thus reflect pre-existing gender inequalities. On the other hand, by offering different tools and methodologies for work, entertainment and care, technologies themselves shape those gender relations.

Digital transformation and technological innovation represent opportunities and challenges across Member States in relation to economic growth, productivity and employment (see Section 9.2). The digital performance of the EU is measured by the Digital Economy and Society Index, which brings together a set of relevant indicators on Europe's current digital policies^[1].

The correlation between the Gender Equality Index and the Digital Economy and Society Index shows that societies with greater equality between women and men also perform better in the area of the digital economy (Figure 27), which is vital for sustainable economic growth.

The best performing Member States in the Digital Economy and Society Index are Finland, Sweden, the Netherlands and Denmark, which are also among the Member States with the highest scores on the Gender Equality Index.

The strong relationship between the Digital Economy and Society Index and the Gender Equality Index suggests that digital performance can be improved while tackling the digital gender divide (e.g. gender gaps in access to and use of digital technologies, in digital-related education, in entrepreneurship, in ICT). Thus, advancements in digital transformation can go hand in hand with advancements in gender equality.

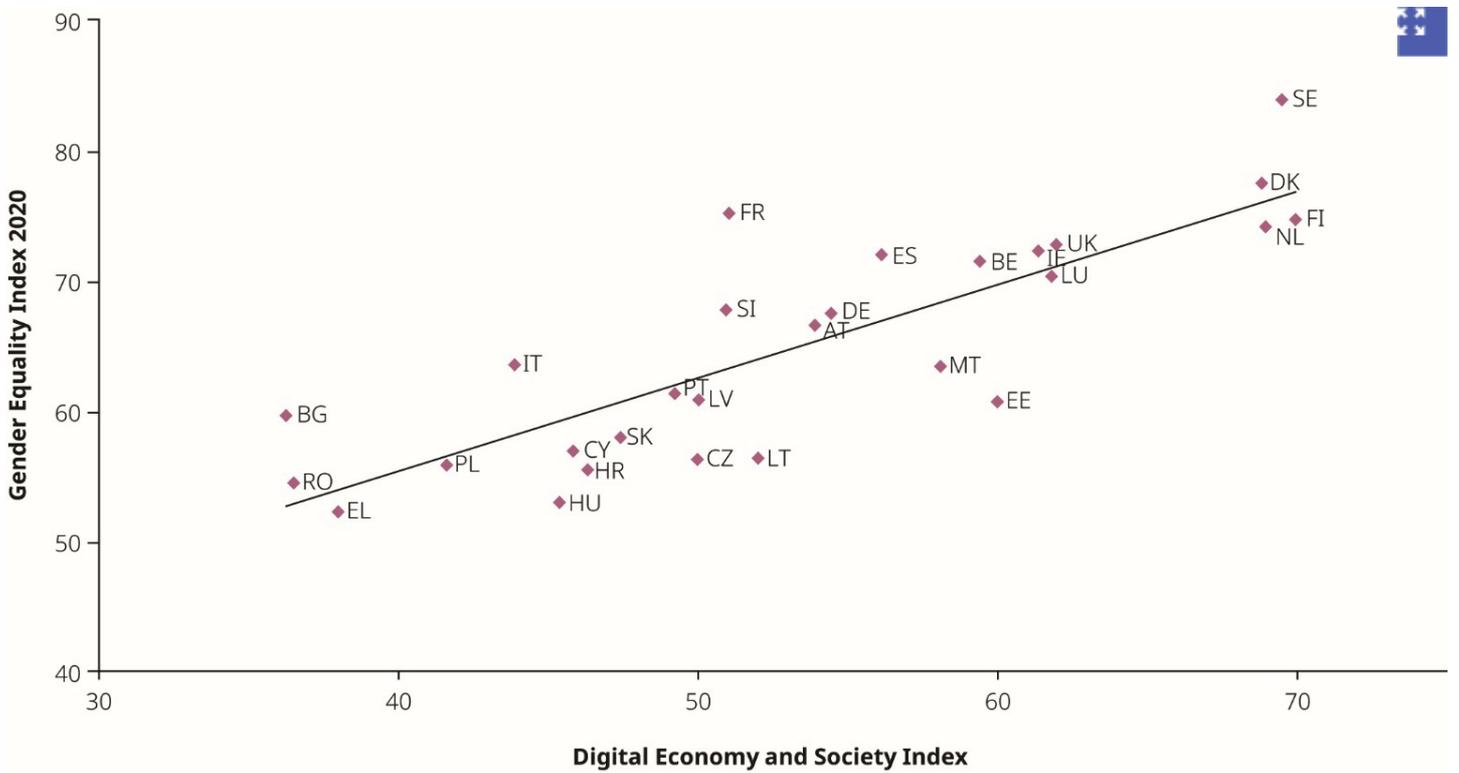


Figure 27. Relationship between the Gender Equality Index and the Digital Economy and Society Index

Is confidence in technology gendered?

Gender analysis of the use of technology reveals a historically unequal power relationship between women and men. Differences in access to economic resources and knowledge, together with gender norms and perceptions of technology, can sideline women from technological developments.

Historically, women have provided a substantial contribution to technological innovation as programmers and computer scientists. Yet the role of those women in influencing computer history is often invisible and unrecognised. Presenting the field as overwhelmingly dominated by men creates a false and unfounded impression of ICT inferiority among women (Hicks, 2017).

A literature review of gender differences in technology use shows women to be more anxious than men about IT use, reducing their self-effectiveness and increasing perceptions of IT requiring greater effort (Goswami and Dutta, 2015). ‘Impostor syndrome’ – or a fear of failure – has a real impact on women, and men’s reactions to women’s discomfort with technology is often mocking or dismissive, making many women more reluctant to engage (Tedesco, 2019).

Self-efficacy in the use of digital technologies is considered a key motivational construct underpinning their use (Rohatgi et al., 2016). Women and men tend to differ in their levels of confidence in their capacity to acquire and use digital skills.

EIGE research into the opportunities and risks of digitalisation for young people (EIGE, 2019a) shows that while digital skills and access to digital technologies is becoming less of an issue for young Europeans, boys consistently express higher self-confidence across a range of skills in relation to the use of digital technologies. In fact, boys tend to overestimate their performance and abilities, while girls underestimate both. This reflects the influence of wider gender norms on perceptions of technological self-efficacy (Huffman et al., 2013).

The Eurobarometer 460 survey presenting European citizens' opinions on the impact of digitalisation and automation on daily life reveals that women are somewhat more concerned about, and have more negative perceptions of, digital technologies (European Commission, 2018i). For example, men are more likely to think newer digital technologies have had a positive impact on the economy (78 % versus 72 % of women) or their quality of life (70 % versus 63 %).

Only one in two women (54 %) has positive views about robots and AI, compared with 67 % of men. Women also tend to be less informed than men about new technologies, which may contribute to their greater mistrust of them. In the case of AI, 41 % of women had heard, read or seen something about it in the past year, compared with 53 % of men. A gender gap also exists in relation to other technological topics (European Commission, 2018i).

Explicit and implicit gender biases embedded in digital services and products have been researched in recent years, particularly in the area of software development (Wang and Redmiles, 2019). Research has shown that the needs of users whose characteristics match those of the designers (in terms of gender, age, (dis)ability) tend to be best served by the software (Burnett et al., 2018).

Three main types of biases were identified: bias in understanding who the user is and how they might use the software; bias in the data used to enable the software, which may then deliver incorrect or biased suggestions to the user; and bias in the design of the product, making it unappealing or impractical for certain categories of users (Vorvoreanu et al., 2019). Gender biases have received attention in relation to, for example, 'tracking and datafication of the body and daily activities, such as running, sleeping, walking and eating' (Søndergaard and Hansen, 2017) and the internet of things^[2].

Multiple research findings suggest that exclusivity in the design of digital technologies and lack of testing on women contribute to women's reduced confidence with regard to technologies. For example, extensive studies have examined gender-based differences in the motion sickness experienced with virtual reality exposure. A recent study demonstrated that inter-pupillary distance contributed to motion sickness among women, as virtual reality headsets were simply not designed for female physiology (Stanney et al., 2020).

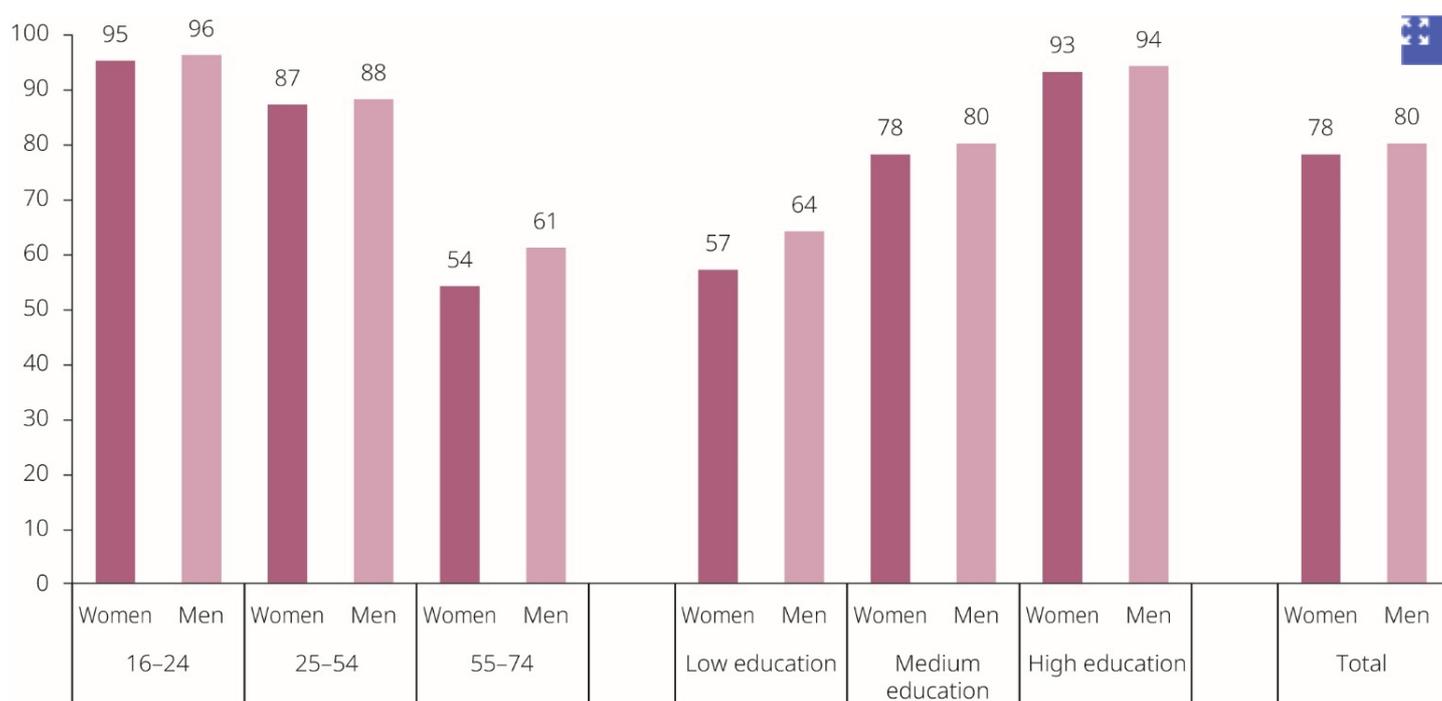
Growing connectivity does not reach everyone

The ownership and use of digital technologies have substantial potential for economic empowerment of women and increasing gender equality. Access to the internet and ownership of and access to digital devices can offer additional employment opportunities, income and knowledge. They can alleviate caring burdens and help with basic tasks, such as shopping for goods or services and banking online.

However, the unprecedented growth in connectivity and use of the internet are not enjoyed equally. Certain groups of women, in particular, have unequal access to connectivity and digital technologies, contributing to the digital gender divide (OECD, 2018b).

EU-wide data shows that women fare more or less equally with men online: 78 % of women and 80 % of men use the internet daily (an increase from 49 % of women and 57 % of men in 2010). However, older women and women with low education lag behind (Figure 28). In addition, 25 % of women aged 55–74 and 27 % of women with low education have never had the chance to use the internet, compared with 21 % of men aged 55–74 and 21 % of men with low education^[3]. Although these numbers have declined since 2010, equal connectivity continues to need attention.

In a number of EU Member States, the groups of women who most need opportunities for economic empowerment are most cut off from those opportunities. The biggest gender gaps among daily internet users (to the detriment of women) are found in Austria (8 p.p.), Croatia (7 p.p.) and Luxembourg (6 p.p.). Older women (aged 55–74) are particularly disadvantaged in Austria (a 20-p.p. gender gap), Luxembourg (13 p.p.) and Germany (12 p.p.). Women with low education are clearly lagging behind in Austria (28 p.p.), Czechia (26 p.p.) and Croatia (20 p.p.).



Similar gender differences are observed in mobile connectivity, which is spreading quickly but not always equally (Yang et al., 2018). In 2019, 74 % of women and 76 % of men had mobile internet access^[4]. This is a substantial increase since 2012, when only 31 % of women and 40 % of men accessed the internet away from home or work.

The gender difference among older people (aged 55–74) with mobile internet access is slightly higher (50 % of women and 54 % of men), although there are significant differences between countries. Older women in Denmark, the Netherlands and Sweden have the much better access to mobile internet (around 80 %) than women in Greece, Italy, Poland or Portugal (slightly above 20 %), but the gender gaps are greatest in Austria (14 p.p.), Greece (8 p.p.) and Luxembourg (8 p.p.).

Gender gaps in the use of mobile technologies have qualitative dimensions as well. For example, Yang et al. (2018) found that adolescent women (aged 16–20) exhibited significantly higher degrees of smartphone dependence and influence than adolescent men, who depend more on computers and videogame devices. EIGE research on youth and digitalisation shows that young women aged 16–24 are more likely than men of the same age to use technologies creatively for sharing online (EIGE, 2019a).

For instance, they are more likely than young men to share self-created content (text, photos, music, videos, software, etc.) on websites (60 % versus 56 %). This gender gap in favour of young women decreases with age (50 % for young women (aged 25–29) compared with 48 % for young men)^[5]. The literature suggests that this could be linked to self-presentation behaviour, such as posting ‘selfies’, with young women facing an expectation that they will maintain an online presence displaying ‘appropriate femininity’ (Bailey and Steeves, 2015).

Numerous sources suggest that the quarantine measures and self-isolation policies associated with the COVID-19 pandemic have increased internet usage by 50–70 %. Women and girls are using the internet with greater frequency during the pandemic, and many more women turned to the internet for work, school, services or social activities.

However, ICT also facilitated the spread of gender-based abusive online material, in which women and girls are over-represented. This may, in turn, restrict or alter women’s use of the internet and access to services online. Research shows that women tend to restrict their engagement online for fear of cyber-aggression, sexualised cyberbullying, gossip and hateful comments (EIGE, 2019a). The broader consequences of gender-based violence enabled by technology are discussed in subsection 9.3.2.

Online activities for professional empowerment: a narrowing gender

gap?

Women and men alike go to the internet for a wide variety of activities. Men are slightly more likely to participate in professional networks, download software and look for online learning materials. Women outpace men in social networking and searches for information about education and training (Figure 29). Although – generally – women are quickly catching up with men in internet use, this progress is uneven across the Member States. The proportion of women engaged in online activities on a daily basis ranges from 95 % in Sweden to 66 % in Bulgaria.

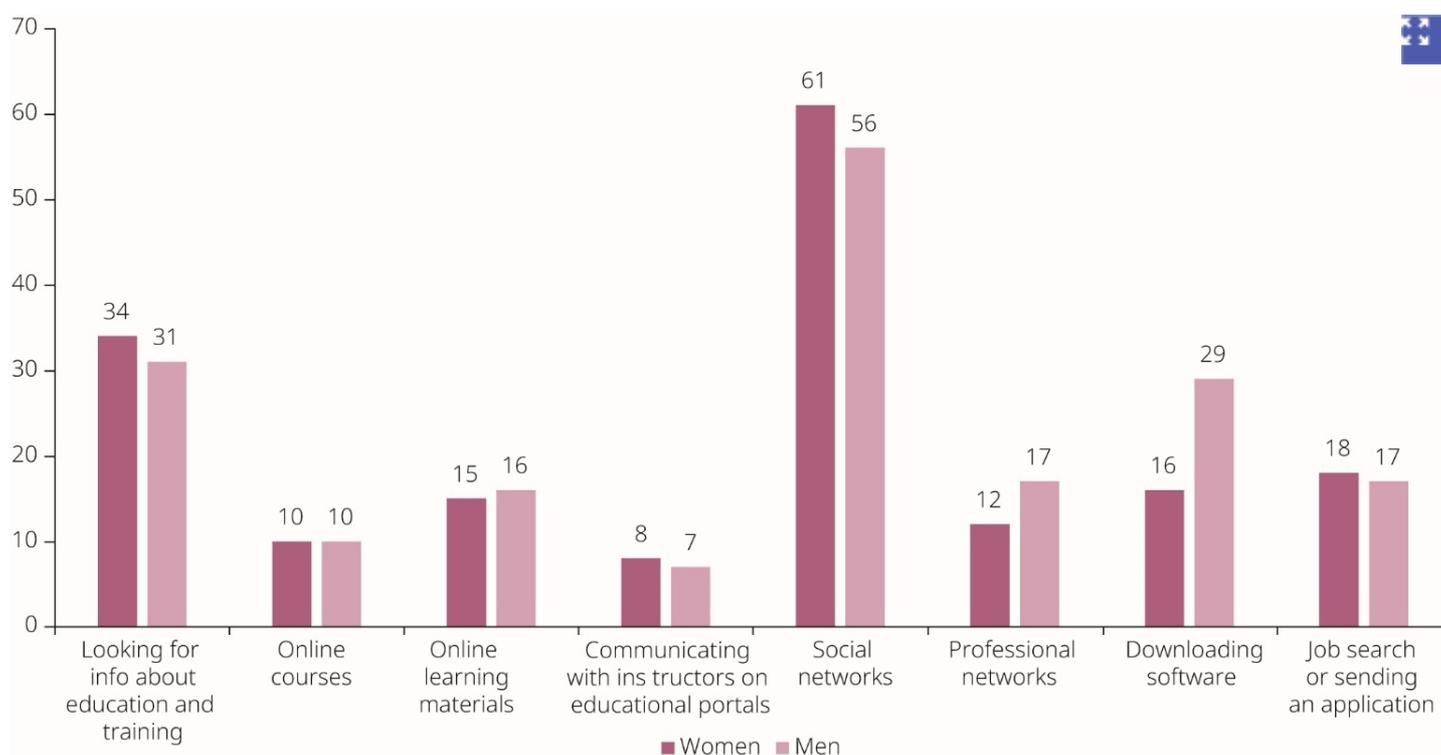


Figure 29. Percentages of people (aged 16–74) who engaged in certain online activities in the past 3 months for private purposes in the EU, by sex

Use of the internet for learning purposes reveals small gender gaps. Overall, women are slightly more engaged in e-learning activities for professional development, particularly looking for information about education and training or course offers.

Overall, the highest levels of engagement among women in various e-learning activities are found in Sweden, Finland, Estonia and the United Kingdom, while the lowest are found in Bulgaria and Romania. The biggest increases in women's uptake of learning opportunities since 2015 are observed in Sweden, Malta and Ireland. For more on training activities to improve digital skills, see subsection 9.1.2.

Women and men were equally engaged in looking for a job or sending a job application online in the 3 months preceding the 2019 survey (18 % and 17 %, respectively) (Figure 29). This online activity is most prevalent in Denmark (37 %), Finland (32 %) and Sweden (30 %). Using the internet to search for a job is least common among women in Romania, Czechia and Bulgaria. Women outnumber men in using the internet to search for a job in Sweden, Malta, Slovakia, Croatia and France.

Participation in online professional networks (LinkedIn, Xing, etc.) reveals a larger gender gap (12 % of women compared with 17 % of men) and an overall increase in engagement since 2011 (from 6 % of women and 9 % of men). Women’s participation ranges from 29 % in the Netherlands and 27 % in Denmark to as low as 2 % in Bulgaria and 3 % in Czechia, Romania and Slovakia.

The biggest gender gaps are found in the Netherlands (9 p.p.), Sweden (8 p.p.), Denmark and Luxembourg (6 p.p. each). Since 2017, the biggest increases in participation in professional networks among women have been observed in the United Kingdom, Poland, Austria and the Netherlands. In April 2020, 43 % of LinkedIn users were women and 57 % were men^[6].

Data on users of mobile internet for professional purposes (via portable computer or handheld device) show substantial gender differences. In 2012, twice as many men as women aged 25–54 (22 % and 11 %, respectively) used mobile internet for professional purposes.

The gender gap increased with level of education (Figure 30). Highly educated men were nearly twice as likely to use mobile internet for professional purposes than highly educated women (33 % and 19 %, respectively).

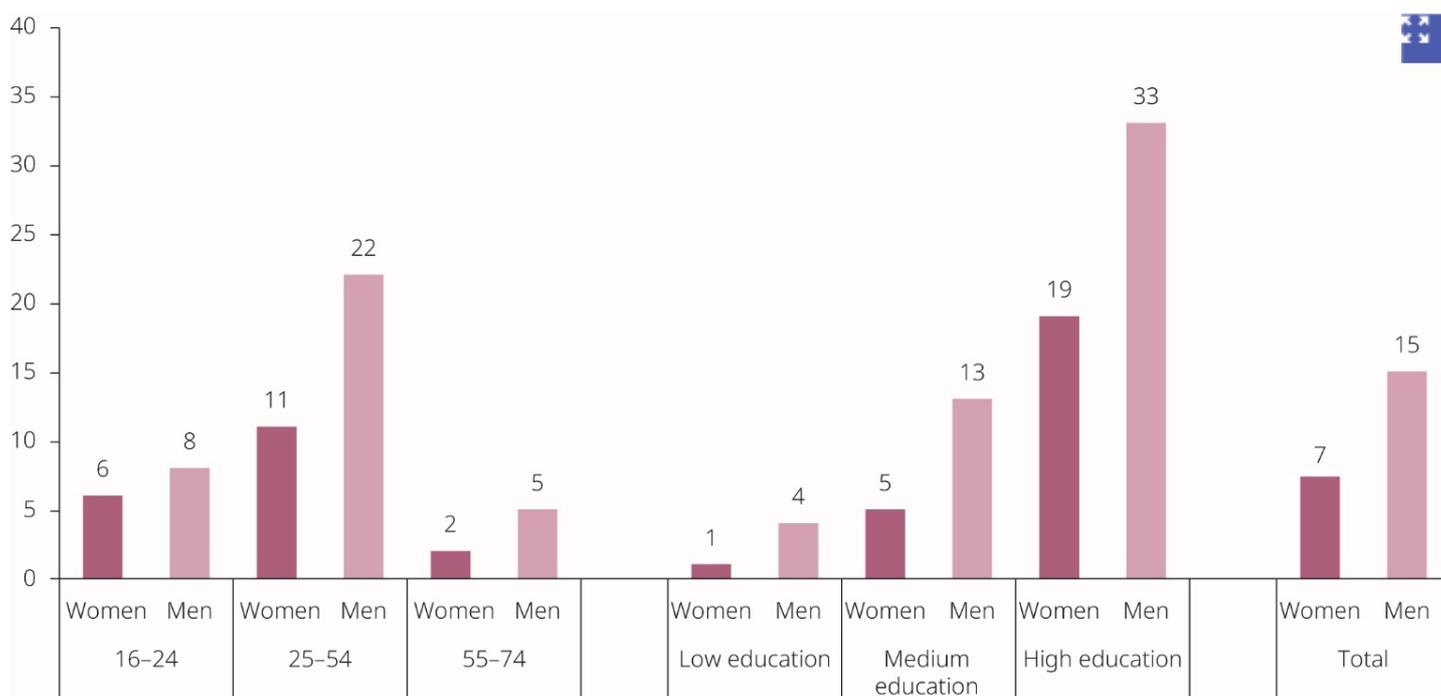


Figure 30. Percentages of people (aged 16–74) using mobile internet for professional purposes in the EU, by sex, age and education level, 2012

Using digital technologies for professional purposes is an important prerequisite for successful integration into the digitalised economy and more advanced forms of IT work. Overall in the EU, women are behind men in the use of various ICT technologies at work (see subsection 9.1.1). The COVID-19 crisis may well have brought substantial changes in relation to online activity and the use of mobile internet for professional purposes by both women and men, especially parents with children under 12, and those changes remain to be assessed.

Footnotes

[1] It captures five dimensions: connectivity; human capital and digital skills; use of internet services by citizens; integration of digital technology by businesses; and digital public services. More information is available from the European Commission's website (<https://ec.europa.eu/digital-single-market/en/desi>).

[2] Referring to everyday objects that are digitally enhanced, connected to the internet and collect/use user data.

[3] Eurostat, ISOC, 'Individuals – internet use' (isoc_ci_ifp_iu).

[4] Individuals who used a portable computer or handheld device to access the internet away from home or work. Eurostat, ISOC, 'Individuals – places of internet use' (isoc_ci_ifp_pu).

[5] <https://www.statista.com/statistics/933964/distribution-of-users-on-linkedin-worldwide-gender/>

[5] Eurostat, ISOC (isoc_ci_ac_i).
