

Is Digitalization Gender-Neutral? Gender Digital Divide Status in EU

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Abstract

This paper examines the matter of gender digital divide, a phenomenon which limits the equitable realization of digital transformation benefits. A synthesis of deep root causes is presented to better understand the issue and the factors contributing to women's exclusion from digitalization. The case study examines the gender gap in the European Union by analyzing three indicators: percentage of the population who has used the internet in the past 12 months, percentage of the population who has used the internet to interact with public authorities, and percentage of population who has used the internet for online banking and e-commerce. Based on the indicators, gender gap was calculated in absolute and relative terms and the beta convergence is also analyzed. Results show the remarkable evolution in terms of both digital transformation and reducing the gender gap at EU-27 level and a distinct pattern of β -convergence, proving that countries which start with lower ICT indicators achieve higher growth over time. Most of the EU member states focused on the issue and created gender-adaptive policies which helped them reduce the gap in the past ten years. Finally, the paper displays a collection of such best practices and measures that promote complete participation and inclusion of women and girls in the digital revolution.

Keywords

Gender digital divide, digitalization, gender inequalities, digital transformation.

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Introduction

Digital transformation has emerged as an essential element of our society, revolutionizing the way we interact with one another and the world around us. It has opened up opportunities for easier social interactions, enhanced productivity and access to a wealth of knowledge and resources. Digitalization has also provided a crucial foundation for sustainable development, allowing us to make significant steps towards a greener and more sustainable future.

Unfortunately, the impact of technological advancements is not equally balanced between genders, with women being disproportionately disadvantaged in accessing and benefiting from digital tools. This phenomenon is commonly known as "digital gender divide" and it refers to gender-based disparities in resources and opportunities to effectively utilize digital technologies (UN Women, 2020).

At first, digitalization was expected to favor women, especially on the labour market as they were expected to encounter lower chances of being replaced by automated systems (Simonton, 2007; AlphaBeta, 2017; Hanrahan and Evlin, 2017). This is due to the nature of their jobs which require more interpersonal, creative and social skills (Hanrahan and Evlin, 2017). Additionally, digitalization should enhance flexibility in the workplace (Ang et al., 2018), which is crucial for women who balance paid work with other responsibilities, such as caregiving for children, the elderly, and household management (OECD, 2018). Digital transformation is also supposed to increase the number of jobs in female-dominated industries such as education, social services, health, business services (OECD, 2017).

However, a study elaborated by EQUALS Research Group, led by the United Nations University (UNU) shows that "a gender digital divide persists irrespective of a country's overall information and communication technology (ICT) access levels, economic performance, income levels, or geographic location".

Greater digital access can significantly enhance women's empowerment and social autonomy by providing better economic opportunities, increasing their civic participation, mobility, and communication. In many low- and middle-income countries, certain technologies can enable women to omit traditional cultural and mobility barriers they face offline. When women have access to digital devices, it enhances the influence and visibility of women's agendas online. Research has shown that digital technologies play a critical role in democratic processes, self-organizing, self-help, and mutual learning. With increased access to quality digital services and information, more women can participate in these processes. For instance, during Sudan's protest movement, women who were unable to join demonstrations, particularly rural women constrained by deeply rooted patriarchal structures, recorded and shared their support on social media platforms such as Facebook and Twitter (Larsson and Viitaoja, 2019).

In order to assess and unlock the full potential of digitalization, its gender dimension must be considered. If the differentiated impacts of technology on women and men are not recognized and addressed, it is likely to widen the gender digital gap.

1. Review of the scientific literature

The digital gender gap has frequently been construed as an issue solely concerning accessibility and affordability, despite the existence of underlying societal factors, such as inequality and power imbalances. In addition, it is crucial to recognize the unique vulnerabilities that women face in varying circumstances and to adopt an intersectional approach. Based on the literature and reports published by NGOs and International Organizations, there are some main barriers to digital gender equality.

Gender and cultural biases

Old gendered norms define and limit educational choices and career paths for women. There is still a cultural association between technical skills and masculinity which persists across the digital landscape. Technology and engineering are predominantly male fields, which discourages girls in pursuing such careers.

The stereotypes do not affect only the educational opportunities of women across the world, they are translated and sometimes magnified in the workplace. Numerous studies have highlighted how cultural practices ingrained in technology workplaces can create unwelcoming and unpleasant environments for women and minorities (Berman and Bourne, 2015). The prevalence of traditional masculine norms and values within these spaces can manifest in subtle ways, such as micro-aggressions, subconscious biases, sexual harassment, and other types of discrimination, including disparaging remarks.

There are some other norms which pose barriers to women's participation in the labor force, especially in a competitive environment as tech industry. Women are expected to focus primarily on their role within the family, to aspire to become wives, moms and primary caregivers, which makes it harder for them to find a job and to take advantage of career advancement opportunities.

Affordability

According to World Wide Web Foundation (2015), digital exclusion is both a cause and a result of economic inequalities. Affordability, being the second most frequently cited obstacle to mobile internet usage, has a significant impact on the low-income population. Due to the economic consequences of the COVID-19 pandemic, there is evidence to suggest that handsets and mobile internet have become even less affordable, causing difficulties in accessing smartphones and mobile internet for this group (GSMA, 2022).

Literacy and digital skills

Digital skills gap is another factor of women's exclusion. According to the last Digital Economy and Society Index Report from 2022, women are 4% less likely than men to possess basic digital skills in EU. Worldwide, women are 25% less likely to use ICT for basic purposes, and four times less likely than men to have advanced digital skills (UNESCO and EQUALS Skills Coalition, 2019). Level of education is correlated to digital skills, therefore women with secondary education are six times more likely to use internet than women with primary education only (World Wide Web Foundation, 2015). Inclusive educational policies, formal and informal digital upskilling and reskilling programs, as well as gender-sensitive trainings can help narrow the gender gap in digital competencies.

Employment opportunities

One of the targets of the Path to the Digital Decade elaborated by European Commission is to have 20 millions ICT specialists, while maintaining gender convergence. The most recent DESI Report (2022)

indicates that there is a shortage of ICT experts in the EU job market, and the number of job openings continues to increase with the emergence of new roles. Moreover, there is a significant gender disparity, with only 19% of ICT specialists and one-third of STEM graduates being female. This problem is further exacerbated by the EU's demographic decline and a lack of specialized educational opportunities in key digital fields.

The largest and most influential tech companies worldwide typically have a low percentage of women among their technical employees. Specifically, Apple, Google, and Microsoft have only 23%, 20%, and 17.5% female technical employees. Moreover, it is estimated that merely one percent of applications for AI positions come from women. (UNESCO and EQUALS Skills Coalition, 2019)

Closing the gender gap in leadership positions within the tech industry could result in a significant increase in global productivity, estimated to be between \$430 and \$530 billion. This would also contribute towards bridging the digital divide in this field (Dalberg, 2016).

Another important topic is the role of platform economy (Uber, Fiverr, Lyft) which represents another opportunity and a potential source of income for many women around the world. This field is also affected by the gender stereotyping (worse evaluations, less demands) which leads to women dropping out of the platforms faster than men (International Trade Center, 2017).

The under-representation of women is also prevalent in entrepreneurship, which paradoxically it is often considered the means for women to make progress in the digital revolution. The lack of women in tech sector, especially in leadership positions perpetuates gender inequalities.

2. Research methodology

The main objective is to analyze the digital gender gap in Europe, by calculating it in absolute and relative terms. The International Telecommunication Union (ITU) states: "The gender gap represents the difference between the Internet user penetration rates for males and females relative to the Internet user penetration rate for males, expressed as a percentage" (ITU, 2019)

The indicators used to calculate the digital gender gap are percentage of population (aged 16-74 years old) who used the internet in the past 12 months, percentage of population (aged 16-74 years old) who used the internet for interacting with public authorities and percentage of population (aged 16-74 years old) who used the internet for internet banking and e-commerce. All the data series have been extracted from Eurostat.

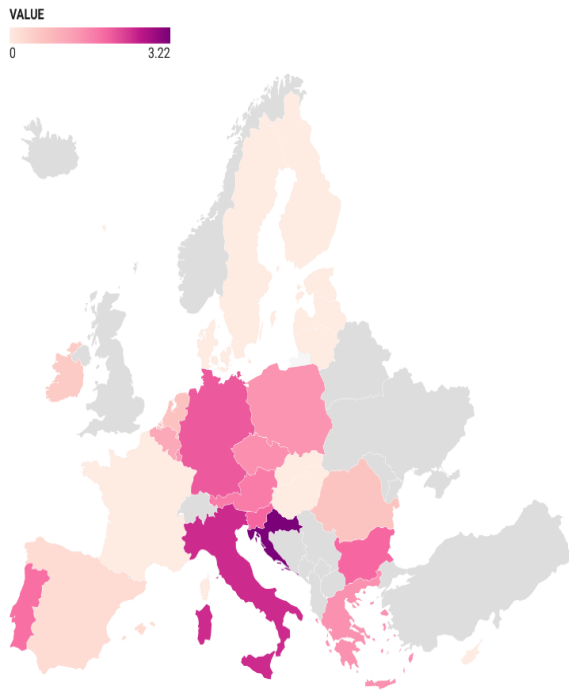
Initially, (M-W) is used to measure the gap between genders in absolute terms. Consequently, the relative gender gap is determined by computing $(M-W)/W$ as a percentage. In both situations, the disadvantaged group is identified by the sign of the gap: the female population when the sign is positive and the male population when it is negative.

This research also examines the evolution of the digital gender gap regarding the three aspects to identify its evolution across EU-27 countries through beta convergence, trying to understand if countries which start with lower ICT indicators achieve higher growth over time. The process of analyzing convergence begins by comparing the ICT indicators and digital gender gap from ten years ago (2012 for last internet use in the past 12 month and use of internet for online banking and e-commerce and 2011 for use of internet to interact with public authorities). To measure β -convergence, the state of things in 2011 and 2012 is used as a baseline, and the changes that occurred during the ten years are also considered.

3. Results and discussion

The results from 2022 are showing that a very high percentage of population used the internet in the past 12 months. Only 8 countries have reported less than 90%, while Denmark, Finland, Luxembourg, Netherlands and Sweden are near 100%. At EU level, both in percentage points and percentages, the digital gender gap is almost closed, with 0.5% difference. Even minor, gender disparities still appear in 17 out of the 27 EU countries. The biggest gaps, over 2%, appeared in Croatia (3.2 pp, 4%), Italy (2.5 pp, 2.9%), Germany (2.1 pp, 2.3%), and Slovenia (2 pp, 2.2%).

Gender Digital Gap - Last internet use in the past 12 months - 2022



Source: Eurostat • Created with Datawrapper

Figure no. 1. Digital Gender Gap Map

Source: Eurostat, Own elaboration

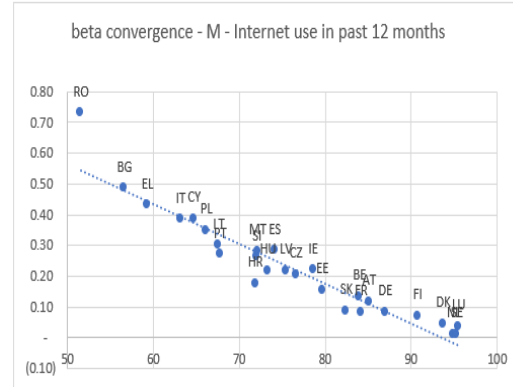
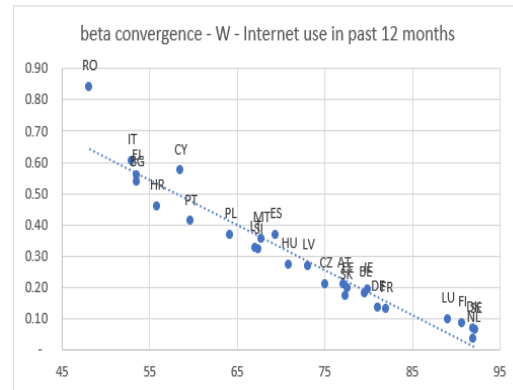


Figure no. 1 Beta Convergence – Internet use in past 12 months

Source: Eurostat, Own elaboration

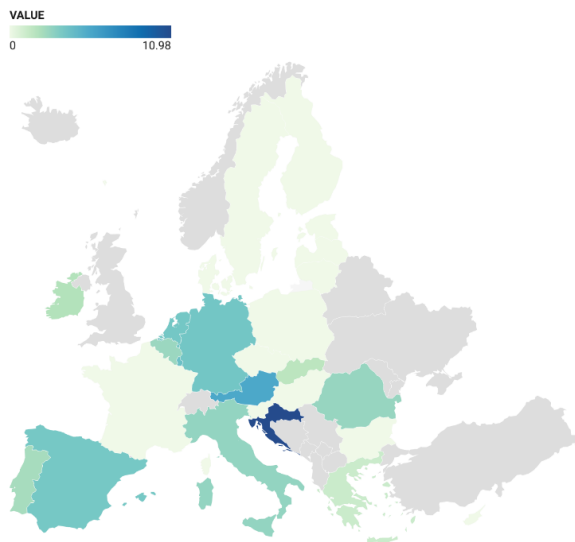
Since 2012, the disparities among the EU-27 member states have decreased. In Figure 2 we notice a distinct pattern of β -convergence between genders and countries. Hence, countries that had higher levels than the European average in 2012 showed lower growth rates than the EU average between 2012 and 2022, as seen in the lower right quadrant. Conversely, countries that started with lower levels experienced more significant growth rates (upper left quadrant).

The smallest advancements are registered in Sweden, Netherlands and Denmark, both for men and women. Romania registered a disproportionate growth of almost 84% for women and 73% for men, which improved the digital gender gap as well. In Italy, the number of women who used internet in the past 12 months increased by 60%, while only 40% more men have started to use internet between 2012 and 2022, which drastically improved the gap from 10pp to 2.5 pp.

The second indicator, percentage of people who used internet for interacting with public authorities, has lower values, on average EU scoring 65%. Romania (14.7%) and Bulgaria (26.6%) recorded the lowest values. Only four countries reached values over 90%: Denmark, Finland, Ireland, and Sweden. In this case the gender digital gap is smaller, proving that women use the internet more than men to engage with public authorities and participate in e-government. Only 13/27 countries report gender disparities, with the highest values in Croatia (11 pp, 27.7%), Austria (5.5 pp, 7.8%), Luxembourg (4.1 pp, 5.4%), and Germany (3.8 pp, 7.8%).

Beta convergence is not consistent neither for men, nor for women. Croatia registered the biggest progress while it halved its gender gap. Bulgaria, one of the worst-situated countries at the beginning of the period has not improved its status in the past ten years and the gender disparities stayed the same. Greece, Cyprus and Ireland more than doubled their percentages and the first two also significantly improved the gender gap. Ireland registered a disproportionate growth for men, deepening the gender divide over time.

Gender Digital Gap - Individuals using the internet for interacting with public authorities - 2021



Source: Eurostat • Created with Datawrapper

Figure no. 3. Digital Gender Gap Map

Source: Eurostat, Own elaboration

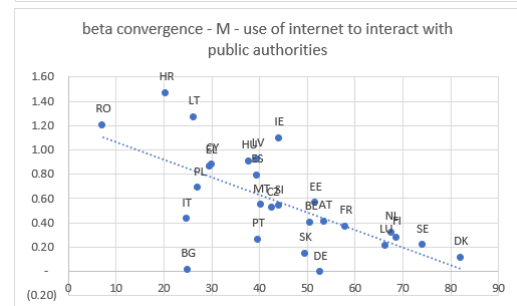
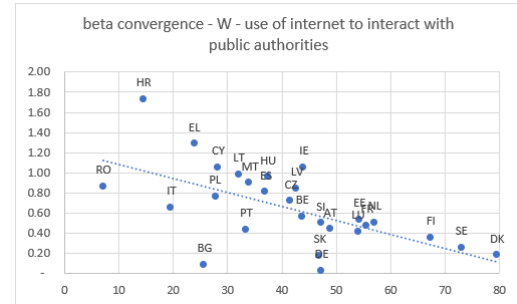
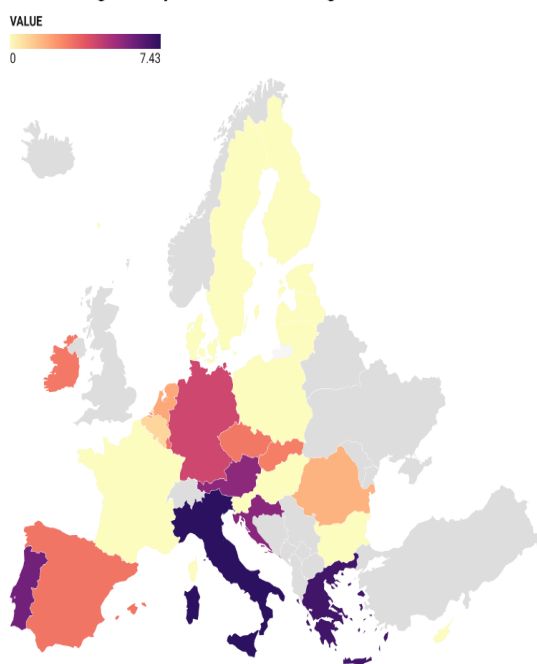


Figure no. 4. Beta Convergence – Use of internet to interact with public authorities

Source: Eurostat, Own elaboration

On average, 66% of Europeans have used the internet in 2022 for banking and e-commerce. Romania and Bulgaria scored the lowest, 19.2% and 22.4% respectively. At the opposite end of the ranking, Denmark and Finland reached values over 90%. The digital gender gap is present only in 14 out of 27 countries, but the values both in pp and percentages are higher than in the previous cases. Italy (7.4 pp, 16.6%), Greece (7 pp, 15.2%), Croatia (5.6 pp, 10.2%), and Austria (5.6 pp, 7.9%) registered the biggest disparities.

Gender Digital Gap - Internet Banking & E-commerce - 2022



Source: Eurostat • Created with Datawrapper

Figure no. 5. Digital Gender Gap Map

Source: Eurostat, Own elaboration

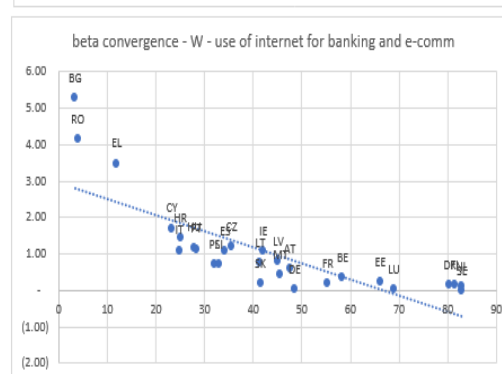
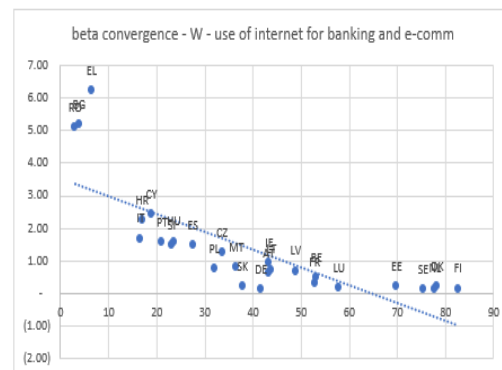


Figure no. 6. Beta Convergence – Use of internet for online banking and e-commerce

Source: Eurostat, Own elaboration

According to Figure 6, the differences have decreased since 2012, as the worst situated countries in the beginning of the period have increased their percentage much more than the better situated ones. Therefore, beta convergence is verified for both sexes. Bulgaria, Romania and Greece have the biggest advancements and they marginally improved their gender disparities over time.

If we zoom on Romania, we notice progress in terms of digital transformation across indicators. In 2022, 89% of Romanians have used internet, almost double compared to the situation in 2012. In this case, we notice advancements towards gender parity, reaching only 0.6% differences between men and women. There is an overall improvement for individuals using internet to interact with public authorities, from 7% in 2011 to 16% in 2022, as well as for the individuals engaging in online banking and e-commerce, from 3% in 2012 to 19% in 2022. Unfortunately, the progress favored men, widening the gender gap at 20.7%, and 9.2% respectively. Romania is below the EU average at digitalization, and the future efforts in this regard must be consistent and gender inclusive.

Policy Proposals

Frequently, discussions surrounding digital technologies tend to suggest that their impact on society is predetermined by technology itself. This means that they assume technical changes occur independently and without any inherent values, resulting in social changes. The social shaping approach recognizes that technologies are not only influenced by their usage but also by their design and technical aspects. The development of technologies is significantly influenced by the people who create them, as their cultural background, history, choices, and values shape the technologies that emerge (UN Women, 2020).

Literature and best practices show the most effective ways to adapt policies in order to overcome the gender digital gap. By focusing on the issue and creating gender-adaptive policies, most of the EU member states managed to reduce the gap in the past ten years.

First, educational institutions such as universities and schools should equip girls with proficient technical skills and digital literacy, to ensure they can fully capitalize on the advantages brought by the digital revolution.

The digital gender gap is not readily apparent at the age of 15. Although girls may display lower proficiency than boys in certain digital-related activities and competencies, they often excel in other areas that are highly prized by employers, such as collaborative problem-solving skills (Larsson and Viitaoja, 2019).

Education, however, is not limited to adapting school and university programs. Governments should invest in lifelong education. The digital age offers flexible options to overcome obstacles to adult education. However, this requires cooperation among different entities, including education and training institutions, employers, and social policy institutions, as stated by Borgonovi et al. (2018). One illustration of this is that women are less inclined than men to participate in massive open online courses, which are often provided as free courses covering a wide range of subjects, according to Zhenghao et al. (2015). In this scenario, a mechanism to upskill women who are at risk of being laid off must be established.

To address exclusionary practices and language in STEM fields, policymakers should encourage men to be active allies and promote female role models and mentors. Having female role models in STEM is crucial in terms of inspiring girls to pursue STEM fields from a young age. However, merely increasing the number of girls and women studying STEM may not be sufficient to eliminate the challenges they face in the workplace, such as persistent bias. Hence, it is also important to take steps to address systemic bias perceptions that perpetuate the digital gender divide. For example, there is still a significant lack of representation of women in entrepreneurship and innovation teams, as previously noted (United Nations Development Programme, 2021). One effective way to address the issue is by introducing gender quotas in incubator or accelerator programs, encouraging women to participate with meaningful contributions in the design process. Governments are responsible to develop awareness-raising campaigns which deconstruct gender norms and biases.

In order to ensure equitable access to high-paying job opportunities and career growth, companies - especially those operating in the technology industry - should integrate gender mainstreaming into their human resources policies. Facilitating "top-down" investment in female leadership is one approach to bridging the digital gender divide, but it requires coordination among various initiatives. The digital transformation has the potential to enhance opportunities for flexible working arrangements that are advantageous to women. Companies should be incentivized to adapt gender equitable recruitment, promotion, and remuneration policies (United Nations Development Programme, 2021).

Governments must guarantee that new technologies are designed under a regulatory framework that prioritizes, safeguards, and advances women's human rights. On top of this, governments should also tackle the gender data gap, while following the data protection legislation in place.

Establishing partnerships among United Nations agencies, governments, the private sector, media, and civil society is critical to combat discriminatory norms at the individual, institutional, and societal levels. Supporting civil society in their advocacy, as well as consulting and involving them in policymaking might help in designing better policies which address real issues.

Policymakers should capture gender-inclusive initiatives in the labour policies such as paid maternity and affordable childcare. By addressing women's disproportionate burden of domestic and care work, it can be guaranteed that they have an equal opportunity to participate in the digital economy as men. Lawmakers must establish an effective system of checks and balances that prevents the exploitation of law loopholes. Additionally, it is essential to increase transparency and awareness among social partners who strive to collaborate to secure employment relationships and achieve mutually agreed-upon objectives for both employers and employees.

Conclusions

Concluding, gender digital divide is a structural issue which cannot be solved by a one-size-fits-all solution, as gender inequality arise from various intersecting economic, social, political, and cultural challenges. Governments are responsible to dedicate resources, to facilitate research, to better understand the context and the causes specific to each country, to consult civil society and to design gender-inclusive policies. The most effective solutions are those evidence-based, which take into account specific barriers at play for each different context. Lastly, it is essential to simultaneously address deep-seated stereotypes, practices and norms that result in discrimination and even violence against women. In order to achieve progress towards closing the digital gender gap the emphasis should be on implementing policy measures that promote complete participation and inclusion of women and girls in the digital revolution.

A noteworthy limitation of this study is the absence of a gender perspective within the available data. While Eurostat offers a diverse range of intriguing data series for examining the process of digitization, only a limited number of them include gender-specific indicators. Moreover, the commencement of data tracking occurred too recently to be considered relevant for conducting a comprehensive analysis.

In future academic research, it would be valuable to conduct a comparative analysis of the gender gap pertaining to distinct levels of proficiency in digital skills and various domains within information and communication technology (ICT). This analysis could encompass areas such as basic, intermediate, and advanced digital skills, as well as computer systems, database management, computer networks, data mining, artificial intelligence, multimedia, and more. By undertaking this research, it would be possible to identify specific domains that require immediate intervention. Furthermore, it would be beneficial for future studies to examine the impact of suggested strategies and initiatives on the gender digital divide, employing recommended metrics and indicators. Such research would enable a comprehensive evaluation of the effectiveness of these measures in addressing the existing gender disparities in digital literacy.

References

- AlphaBeta, 2017. *The Automation Advantage*. [pdf] Available at: <<https://accesspartnership.com/wp-content/uploads/2023/03/The-Automation-Advantage.pdf>> [Accessed 15 April 2023].
- Ang, S.S., Orozco, M., Gijbels, D. and Van Den Bossche, P., 2018. Learning in the Context of Work in a Digital Age: The Use of Digital Media in Informal and Formal Learning Contexts. In: C. Harteis, ed. *The Impact of Digitalization in the Workplace*. Cham: Springer International Publishing. pp.87–101. https://doi.org/10.1007/978-3-319-63257-5_7.
- Berman, F.D. and Bourne, P.E., 2015. Let's Make Gender Diversity in Data Science a Priority Right from the Start. *PLOS Biology*, 13(7), p.e1002206. <https://doi.org/10.1371/journal.pbio.1002206>.
- Borgonovi, F., Centurelli, R., Dernis, H. and OECD, 2018. *Bridging the Digital Gender Divide: Include, Upskill, Innovate*. [pdf] Available at: <<https://www.oecd.org/digital/bridging-the-digital-gender-divide.pdf>> [Accessed 15 April 2023].
- Dalberg, 2016. *Decoding diversity: the financial and economic returns of diversity in tech*. [pdf] Available at: <<https://dalberg.com/wp-content/uploads/2016/06/Diversity-report.pdf>> [Accessed 15 April 2023].

- European Commission, 2022. *Digital Economy and Society Index (DESI) 2022*. [online] Available at: <<https://digital-strategy.ec.europa.eu/en/library/digital-economy-and-society-index-desi-2022>> [Accessed 15 March 2023].
- GSMA, 2022. *The Mobile Gender Gap Report 2022*. [pdf] Available at: <<https://www.gsma.com/r/wp-content/uploads/2022/06/The-Mobile-Gender-Gap-Report-2022.pdf>> [Accessed 15 April 2023].
- Hanrahan, C. and Evlin, L., 2017. *Guess whose jobs are easiest to automate? Men's, and the low paid*. [online] ABC News. Available at: <<https://www.abc.net.au/news/2017-08-09/ai-automation-men-and-lower-paid-workers/8741518>> [Accessed 26 October 2022].
- International Trade Center, 2017. *New pathways to e-commerce. A global MSME competitiveness survey*. [online] Available at: <<https://intracen.org/media/file/2437>> [Accessed 15 April 2023].
- ITU, 2019. *Measuring digital development: Facts & figures 2019*. [pdf] Available at: <<https://www.itu.int/en/ITU-D/Statistics/Documents/facts/FactsFigures2019.pdf>> [Accessed 15 April 2023].
- Larsson, A. and Viitaoja, Y., 2019. Identifying the digital gender divide. In: *The Digital Transformation of Labor*, 1st ed. [online] London: Routledge. pp.235–253. <https://doi.org/10.4324/9780429317866-14>.
- OECD, 2017. *Going Digital: The Future of Work for Women*. [pdf] Available at: <<https://www.oecd.org/employment/Going-Digital-the-Future-of-Work-for-Women.pdf>> [Accessed 15 April 2023].
- OECD, 2018. *Entrenched Social Norms Prevent the Equal Distribution of Caring Responsibilities Between Men and Women*. [online] Available at: <<https://www.oecd.org/gender/data/entrenched-social-norms-prevent-the-equal-distribution-of-caring-responsibilities-between-men-and-women.htm>> [Accessed 15 April 2023].
- Simonton, D.L., 2007. Women Workers, Working Women. In: D Simonton (ed.), *Routledge History of Women in Modern Europe since 1700: 1700 to the present*. Routledge, London and New York, pp. 134-176.
- UNESCO and EQUALS Skills Coalition, 2019. *I'd blush if I could: closing gender divides in digital skills through education*. [online] Available at: <<https://en.unesco.org/Id-blush-if-I-could>> [Accessed 15 April 2023].
- United Nations Development Programme, 2021. *Gender Equality in Digitalization: Key issues for programming*. [pdf] Available at: <<https://www.undp.org/sites/g/files/zskgke326/files/migration/eurasia/UNDP-RBEC-Gender-Equality-Digitalization-guidance.pdf>> [Accessed 15 April 2023].
- United Nations University and Equals Research, 2019. *Talking Stock: Data and Evidence on Gender Equality in Digital Access, Skills and Leadership*. [pdf] Available at: <<https://i.unu.edu/media/cs.unu.edu/attachment/4040/EQUALS-Research-Report-2019.pdf>> [Accessed 15 April 2023].
- United Nations Women, Judy Wajcman, Erin Young, and Anna Fitzmaurice, 2020. *The Digital Revolution: Implications for Gender Equality and Women's Rights 25 Years after Beijing*. UN Women Discussion Papers. United Nations. <https://doi.org/10.18356/e2a68ccf-en>.
- World Wide Web Foundation, 2015. *Women's Rights Online Translating Access into Empowerment*. [pdf] Available at: <<https://webf2.wpenginepowered.com/wp-content/uploads/2015/10/womens-rights-online21102015.pdf>> [Accessed 15 April 2023].
- Zhenghao, C., Alcorn, B., Christensen, G., Eriksson, N., Koller, D. and Emanuel, E.J., 2015. *Who's Benefiting from MOOCs, and Why*. [online] Harvard Business Review. Available at: <<https://hbr.org/2015/09/whos-benefiting-from-moocs-and-why>>.