Hypatia

Digital Gender Gap, Digital Violence, Housemaking.
An education and awareness programme

Mapping the Digital Gender Gap

2025

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Read more about the project here: https://www.hypatia-project.eu

Authors: Tamara Jačisko Nasri, Tatiana Petríkovič (GIC NORA) et al.

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Annotation

This report analyses the digital gender gap in the EU, focusing on a frequently invisible and marginalised group: housemakers - women engaged in unpaid caregiving work due to family responsibilities. Using a five-layer analytical framework, the report maps structural inequalities that limit women's digital participation, including barriers related to affordability, advanced skills, underrepresentation in ICT jobs, exclusion from innovation ecosystems, and vulnerability to digital violence. Country case studies of Czechia, Italy, Malta, and Spain illustrate national variations and policy responses.

The findings show that while women have largely reached gender parity in basic internet access and usage, deep gaps persist in advanced competencies, digital employment, leadership, and entrepreneurship. Unpaid care work, socio-economic disparities, and algorithmic bias in AI systems compound these inequalities. The report recommends targeted and intersectional interventions, gender-sensitive digital policies, inclusive AI governance, and expanded support for women in ICT education, employment, and entrepreneurship. Only through a gender-inclusive digital transformation that embodies the principles of fairness, safety, and equal opportunity, that are central to the EU's Women in Digital strategy, can we achieve true digital justice.

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Introduction

In today's rapidly evolving world, digital skills and equal access to technology are essential for everyday life. From booking a doctor's appointment to communicating with local authorities or applying for a job, digital tools have become indispensable. The digital transformation has shifted many services, the labour market, and social interactions online but not everyone has equal access, skills, confidence, or opportunities to benefit from these changes.

Studies have shown that the digital world can deepen existing inequalities, and this becomes particularly visible with the creation and widespread use of Artificial Intelligence (AI). In this analysis, we specifically focus on the digital gender gap, which is primarily defined by disparities in access, skills, usage, and representation. Inequalities in each of these layers shape the development and operation of AI and all other digital tools.

One of the most critical, but often underappreciated, impacts of the digital gender gap lies in its structural influence on who designs, governs, and shapes the online environment. When women and minorities are excluded from ICT fields, leadership in tech innovation, and data governance roles, the very architecture of digital platforms becomes gender-blind, or worse, gender-biased. For instance, on a global scale, 70% of men use the internet compared to 65% of women, meaning that in 2023, 244 million more men than women were online.[1] More detailed intersectional research has found that only 20% of women in low-income countries have internet access.[2] A study by the Berkeley Haas Centre analysed 133 AI systems and found that 44% showed gender bias, and 25% showed both gender and racial bias.[3] A recent study by the Technical University of Applied Sciences Würzburg–Schweinfurt revealed that large language models systematically advised women to request lower salaries than identically qualified men in salary negotiation scenarios, with disparities reaching up to $120,000 annually.[4]

In Europe, where digitalisation is central to strategies for growth and resilience, persistent gender-based inequalities represent a serious challenge to the EU's vision for social justice, competitiveness, and cohesion. Bridging the digital gender gap requires a nuanced understanding of how gendered roles, unpaid care work, and structural inequalities shape access to and participation in the digital world. In this analysis we will focus also on unpaid domestic workers and homemakers, because they represent one of excluded groups in digital policy, practice, and innovation. Women performing unpaid domestic and care work bear a disproportionate burden of household and care tasks, limiting their discretionary time for digital skills acquisition and engagement with technology. Consequently, their contributions and digital needs remain largely invisible in mainstream digital policies and AI designs, deepening exclusion rather than inclusion.

[1] UN Women. 2024. Artificial Intelligence and Gender Equality. UN Women Asia and the Pacific. Available at: https://asiapacific.unwomen.org/en/stories/feature-story/2024/05/artificial-intelligence-and-gender-equality

[2] Ibid.

[3] Ibid.

[4] Technische Hochschule Würzburg-Schweinfurt. n.d. News & Presse. Available at: https://www.thws.de/service/news-presse

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This analysis aims to map digital gender gap policies in the EU and in five European countries, Czechia, Italy, Malta, and Spain.

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Mapping the Digital Gender Gap Across EU

In order to comprehensively understand how digital gender inequality manifests across different EU member states, this document applies a multi-layered analytical methodology to each participating country. The aim is to assess the current state of women's participation in digital transformation processes and to identify potential causal links between national policy frameworks and the presence or absence of digital gender gaps.

The digital gender gap refers to the significant disparities between men's and women's access to, skills in, usage of, and representation within Information and Communication Technologies (ICTs).[5] This global inequality, which saw 244 million more men than women using the internet in 2023, is driven by various factors including economic disparities, limited device access, insufficient connectivity, cultural barriers, and a lack of digital skills.[6]

To this end, we employ a five-layer model: Access, Skills, Usage, Employment, and Innovation, which reflects the progressive and interdependent stages of digital inclusion. This layered approach allows us to go beyond surface-level analysis and instead identify which specific policy instruments, governance barriers, or social determinants are shaping national digital gender landscapes. Where significant gaps appear, we investigate whether these correlate with policy voids, underfunded programs, or poorly targeted interventions.

Access Layer focuses on physical connectivity and device ownership. It measures the extent to which individuals, disaggregated by gender, possess the essential digital infrastructure and personal devices necessary to connect to and participate in the digital world. For the purpose of this publication, internet access doesn't refer to 'connectability' (can a connection be provided in the household's street or local area), but rather to whether anyone in the household is able to use the internet at home if so desired ('connectivity').[7]

Skills Layer assesses the digital competencies and literacy individuals possess, ranging from basic digital literacy to advanced technical expertise. Its focus is on understanding the capacity to effectively and safely create, evaluate, and act within dynamic digital environments.

Usage Layer examines meaningful engagement and application of digital tools. It focuses on the frequency and purpose of digital tool use, distinguishing between empowering and passive engagement. This layer reacts to the criticism of the narrow definition of digital inclusion that focuses on access and use and expands it to expand to incorporate a third level, namely the ability to derive tangible benefits from internet use[8].

[5] University of Oxford. 2025. Expert Comment [news release]. University of Oxford. Available at: https://www.ox.ac.uk/news/2025-03-11-exper

[6] Internet Society Foundation. 2024. What's the Gender Digital Divide? Internet Society Foundation. Available at: https://www.isocfoundation.org/2024/10/whats-the-gender-digital-divide

[7] Eurostat. n.d. [PDF Report]. Available at: https://ec.europa.eu/eurostat/statistics-explained/SEPDF/cache/2549.pdf

[8] Kling, Rob, and Roberta Lamb. 2003. "IT and Organizational Change in Digital Economies: A Socio-Technical Approach." The Information Society 19(1): 1–29. doi:10.1080/01972240309487.

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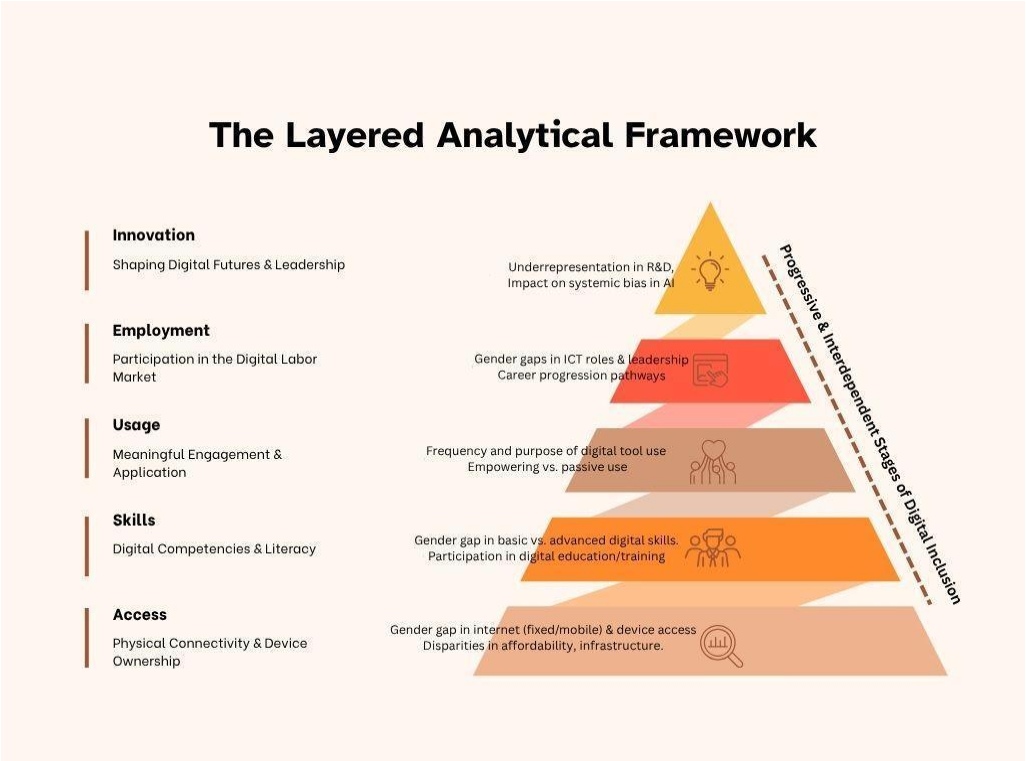
Employment Layer analyses women's roles as workers in existing digital professions, particularly in STEM (science, technology, engineering, and mathematics) and ICT (information and communication technologies). It examines structural barriers that affect women's entry into and advancement within these fields, such gender-biased recruitment, underrepresentation in leadership, and norms that fail to accommodate caregiving responsibilities. These issues contribute to a workplace culture that often marginalises women and other underrepresented groups.

In contrast, the Innovation Layer centres on women's roles as entrepreneurs, startup founders, and tech innovators. While both layers share overlapping barriers, the Innovation Layer introduces specific dynamics like venture capital exclusion, higher financial risk, and the underrepresentation of women in spaces where digital products, platforms, and business models are conceived and launched. This distinction is important because women's absence from innovation leadership directly affects the inclusivity, accessibility, and social responsiveness of technological advancement.

Image 1: The Layered Analytical Framework



Source: own work

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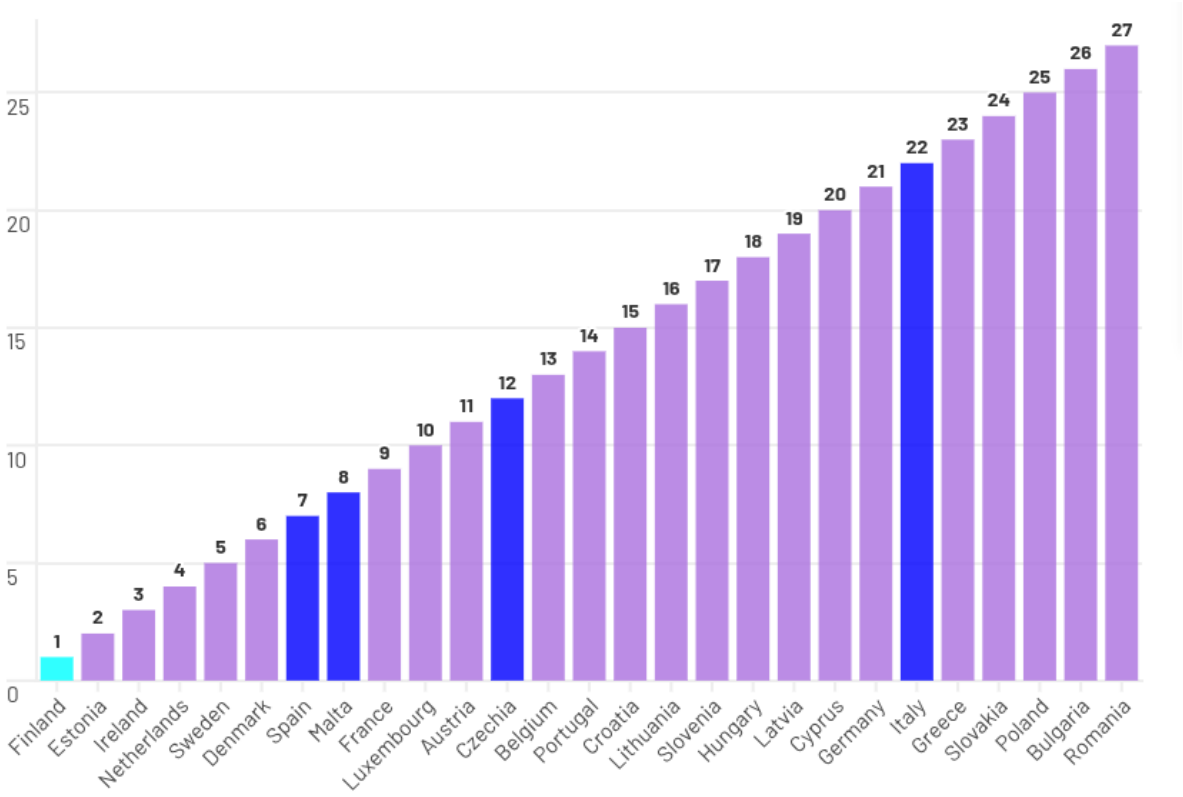
Overview of EU-Wide Results (WiD Scoreboard)

The WiD Scoreboard, developed by the European Commission, serves as a comprehensive evaluation tool assessing EU member states across three critical clusters: Internet Use, Internet User Skills, and Specialist Skills and Employment.[9] The most recent comprehensive data is provided by the 2024 edition of the scoreboard, which uses past Eurostat data to assess how well women are represented in digital jobs, careers, and entrepreneurship.[10]

Chart 1: WiD Scoreboard 2024 - overall ranking



Source: [Report on the state of the Digital Decade 2024]

The chart displays the overall ranking of EU countries based on the 2024 WiD Scoreboard, which assesses how effectively each member state supports women's participation in the digital sphere. Countries are ranked from 1 (best) to 27 (worst), with Finland, Estonia, and Ireland leading, while Slovakia, Bulgaria, and Poland rank lowest.

The WiD Scoreboard, in its 2024 edition, evaluates performance using 13 indicators grouped into three core dimensions: internet use, internet user skills, and specialist skills and employment. These indicators are aligned with the EU's 2030 Digital Decade Policy Programme targets, which aim for 80% of the population to have basic digital skills and at

[9] European Commission. n.d. Women in Digital: Shaping Europe's Digital Future. Available at: https://digital-strategy.ec.europa.eu/en/policies/women-digital

[10] European Commission. 2024. Women in Digital Scoreboard 2024. European Commission. Available at: https://digital-strategy.ec.europa.eu/en/news/women-digital-scoreboard-2024

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least 20 million ICT specialists with balanced gender representation.[11] Beyond measuring progress, the Scoreboard reflects the EU's broader recognition that increasing women's participation in digital sectors is not only a matter of equality but also a key economic driver. Research suggests that reaching 45% female representation in ICT could increase EU GDP by an estimated EUR 260 to 600 billion by 2027.[12]

Access Layer of the Digital Gender Gap

The European Union generally demonstrates high levels of internet access across its Member States. In 2023, a significant 93.1% of EU households reported having internet access at home, marking an increase from 87.9% in 2018.[13] This upward trend continued into 2024, with 94% of all EU households surveyed having internet access. Leading countries in this regard include the Netherlands and Luxembourg, both boasting 99% household internet connection, closely followed by Finland and Denmark at 97%.

Despite high overall connectivity, there are still some marginalised groups that face barriers to achieving meaningful digital access.[14] Current EU policies mainly focus on enhancing digital skills and promoting women's employment in the ICT sector, which may indicate a belief that basic access issues have mostly been resolved.[15][16]

Table 1: EU population unable to afford internet connection for personal use at home by sex and degree of urbanisation (2024)

Category	EU Average (%)	Women (%)	Men (%)
Total	2.1%	2.1%	2.0%
Cities	1.9 %	1.9%	1.9%
Towns and suburbs	2.0%	2.1%	1.9%
Rural areas	2.4%	2.5%	2.3%

Source: Eurostat, 2024

[11] European Commission. "Europe's Digital Decade: Digital Targets for 2030." European Commission, updated 2025. https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/europe-fit-digital-age/europes-digital-decade-digital-targets-2030_en

[12] European Commission. "Women in Digital: Shaping Europe's Digital Future." European Commission, April 25, 2025. https://digital-strategy.ec.europa.eu/en/policies/women-digital

[13] European Commission. Europe's Digital Decade: Digital Targets for 2030. PDF. European Commission. (n.d.). https://ec.europa.eu/eurostat/statistics-explained/SEPDF/cache/2549.pdf

[14] Eurofound. All Publications. (n.d.). European Foundation for the Improvement of Living and Working Conditions. https://www.eurofound.europa.eu/en

[15] World Economic Forum. "How to Bridge the Digital Divide in the European Union." World Economic Forum, August 14, 2023. https://www.weforum.org/stories/2023/08/how-to-bridge-the-digital-divide-in-the-eu/

[16] European Commission. "Digital Inclusion." European Commission. (n.d.). https://digital-strategy.ec.europa.eu/en/policies/digital-inclusion

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In 2023, EU households in rural areas had lower internet access (90.5%) compared to those in towns and cities (92.7% and 94.9%, respectively).[17] Daily internet usage was also less common in rural areas, with 80.3% of individuals using it compared to 89.5% in cities.[18] The gap in access was most pronounced in Greece and Bulgaria, reaching 15 percentage points in 2024.[19]

These disparities have a significant gendered impact, as women in rural areas often face limited access to technology compared to men.[20] This suggests that while the EU's overall digital infrastructure is robust, localised gaps disproportionately affect women due to their geographic distribution or socio-economic roles, such as their involvement in "invisible labour" within rural households.

When it comes to gender gaps in mobile phone and smartphone ownership, Global reports from organisations like GSMA and ITU provide extensive data especially in Low and Middle-Income Countries (LMICs). For instance, women in these countries are 13-17% less likely to own a smartphone.[21] However, the available Eurostat materials do not offer comparable EU-level data on personal mobile phone or smartphone ownership disaggregated by gender for the general population. This lack of specific statistics at the EU level regarding personal device ownership by gender represents a significant limitation in understanding access issues. It may suggest that EU policymakers implicitly believe that personal device access is not a major gender-related issue, or that it is sufficiently covered by general internet access figures.

Affordability, particularly concerning the cost of handsets and data, is consistently identified as a primary global barrier to mobile ownership and internet access.[22] Women frequently experience this barrier more acutely than men due to generally lower average incomes, reduced access to external finance, and less financial independence.[23]

[17] European Commission. Europe's Digital Decade: Digital Targets for 2030. PDF. European Commission. (n.d.). https://ec.europa.eu/eurostat/statistics-explained/SEPDF/cache/2549.pdf

[18] Ibid.

[19] Eurostat. "Digital Economy and Society Statistics - Households and Individuals." Eurostat Statistics Explained. European Union. Accessed September 2025. https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Digital_economy_and_society_statistics_-_households_and_individuals

[20] Eurostat. "Urban-rural Europe - Women and Men Living in Rural Areas." Eurostat Statistics Explained. European Union. Accessed September 2025. https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Urban-rural_Europe_-_women_and_men_living_in_rural_areas

[21] University of Oxford. "Expert Comment: What Is the 'Digital Gender Gap'?" Oxford News & Events, 11 March 2025. https://www.ox.ac.uk/news/2025-03-11-expert-comment-what-digital-gender-gap

[22] Broadband Commission. Advocacy Targets on Equality. Broadband Commission. Accessed September 2025. https://www.broadbandcommission.org/advocacy-targets/7-equality/. (n.d.) (No published date found.)

[23] Alliance for Affordable Internet (A4AI). Costs of Exclusion Report. Alliance for Affordable Internet. 2024. https://a4ai.org/research/report/costs-of-exclusion-report/.

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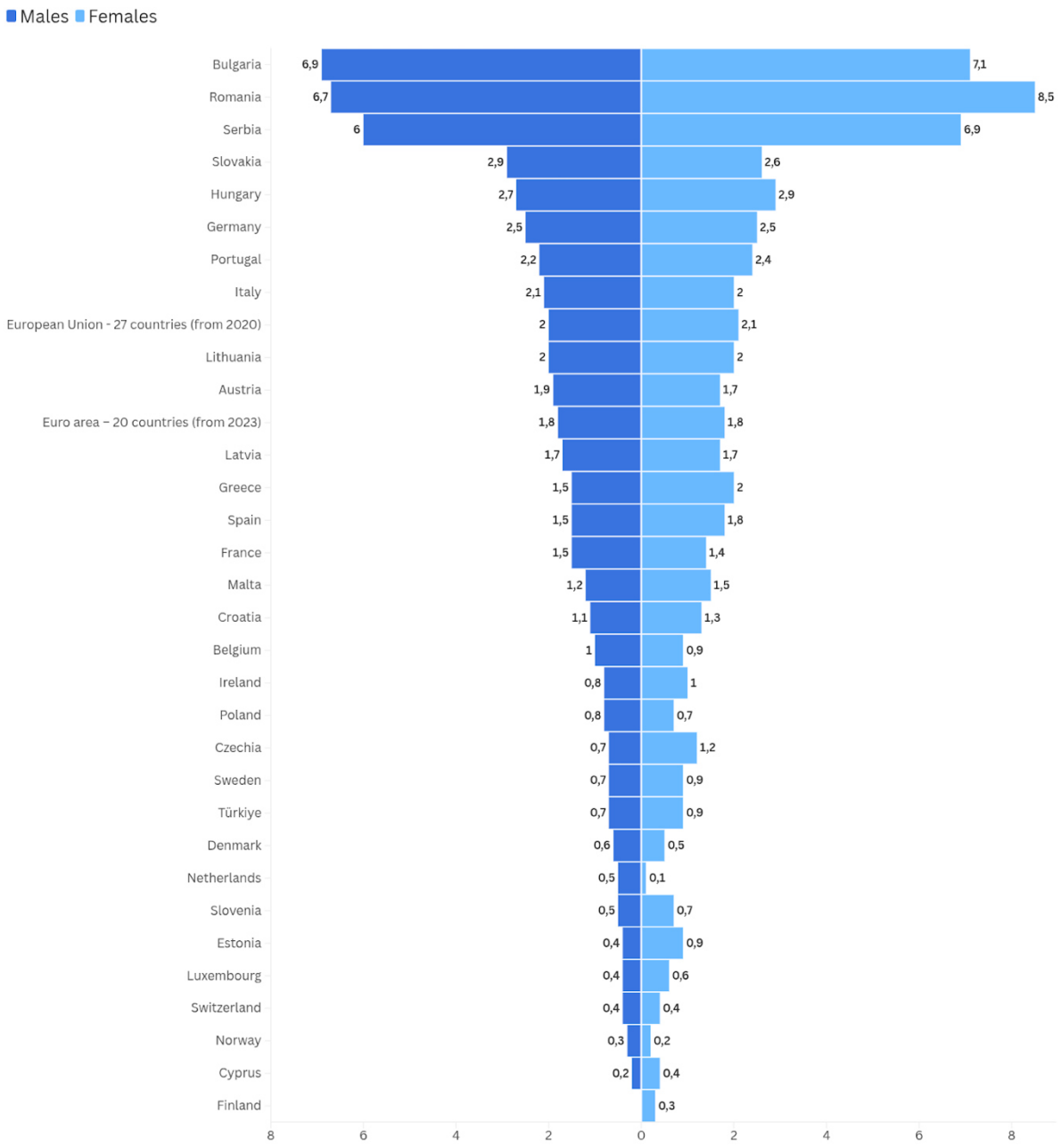
Chart 2: % of persons who cannot afford internet connection for personal use at home by sex (2024)



Source: Eurostat, (2024)

Within the EU, while overall internet affordability is high, disparities exist. In 2024, 2.1% of the total EU population reported being unable to afford an internet connection. Among the project countries, Czechia stands out with the largest gender gap: 1.2% of women cannot afford internet access compared to 0.7% of men. In Malta the gap is smaller, with 1.5% of women and 1.2% of men affected. Spain shows relatively equal levels of unaffordability, with 1.7% of

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women and 1.3% of men reporting difficulties. Italy is the only project country where men (2.1%) are slightly more affected than women (2%).

When considering women's access to the digital economy, connectivity alone is not enough. True digital inclusion requires knowledge, awareness, and support that enable women to use technology for empowerment and participation. While digital literacy is a necessary starting point, women also need practical skills, such as creating and managing social media business accounts, adjusting privacy settings, or using everyday applications. These skills become especially relevant for women seeking to generate income from home, where digital tools can offer flexible opportunities to balance economic activity with household responsibilities. Yet, to establish and sustain such online or home-based businesses, additional enabling conditions are critical, including access to banking services, financial literacy, and childcare support. Without this broader infrastructure, women, particularly those confined to or choosing to work within the home, cannot fully benefit from digital opportunities.[24]

Another structural barrier is time poverty, which stems from the unequal distribution of unpaid care and domestic work. Women often carry the main responsibility for childcare, eldercare, and household management, leaving them with limited time and energy to develop or update digital skills. For women in households, this may mean postponing or abandoning opportunities to learn new platforms, explore digital markets, or grow online enterprises. In a fast-moving digital economy, these constraints reduce their capacity to engage in lifelong learning, adapt to technological change, and achieve entrepreneurial independence. Addressing both the skills gap and the structural limitations of time poverty is therefore essential to ensure women's equitable access to digital opportunities.[25]

[24] Eurofound (2025), Narrowing the digital divide: Economic and social convergence in Europe's digital transformation, Publications Office of the European Union, Luxembourg.

[25] Eurofound. Narrowing the Digital Divide: Economic and Social Convergence in Europe's Digital Transformation. Luxembourg: Publications Office of the European Union, 2025.

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BEST PRACTISES BOX: Policies and initiatives ensuring equal access to technology and digital tools for women, enhancing their digital resilience, cybersecurity education, and online protection.

The **European Declaration on Digital Rights and Principles** (2022) serves as a foundational commitment, explicitly stating Europe's dedication to a fair and inclusive digital transformation that leaves no one behind. This declaration emphasises achieving gender balance and bridging the digital gender divide, setting a broad framework for equitable access to digital services and opportunities across the Union.

The **WiFi4EU** through the European Commission and EU Member States provides funding to local governments to install free Wi-Fi hotspots in public spaces, thus ensuring equal digital access for all citizens, including underserved communities, by increasing the number of public spaces with free internet connectivity.

EU Digital Resilience Act aims to strengthen cybersecurity across various EU sectors through regulations that mandate cybersecurity training and ensure industry compliance.

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Usage Layer of the Digital Gender Gap

The Usage Layer of the Digital Gender Gap reveals qualitative disparities. While women excel in digital communication and online shopping, men lead in active digital entertainment like gaming and formal online services. Key barriers include time poverty, shared household devices, and negative online experiences, which disproportionately affect women and vulnerable groups. Intergenerational learning is a vital informal inclusion mechanism. True digital inclusion requires addressing these usage gaps, fostering safer online environments, and developing practical digital skills tailored to diverse needs, ensuring technology empowers rather than merely facilitates passive consumption.

*Table 2: Gender gap in regular internet use in the EU (Aged 16-74, 2018-2023) **

Year	Women (%)	Men (%)	Gender Gap (Men - Women, percentage points)
2018	(Approx. 80%)	(Approx. 87%)	7 pp
2019	(Approx. 84%)	(Approx. 87-88%)	3-4 pp
2020	85%	87%	2 pp
2022	(Approx. 88%)	(Approx. 89-90%)	1-2 pp (EU average)
2023	86% (daily use)*	86% (daily use)*	0 pp (daily use)*

Source: European Commission, WiD Scoreboard, Eurostat (various years)
Note: 2023 data refer to daily internet use for the overall population aged 16-74, where parity has effectively been reached. For other forms of regular use, small gaps might still exist.

The EU has made significant strides in reducing the gender gap in regular internet usage. By 2020, 85% of women regularly accessed the internet, closely mirroring the 87% of men. More recent data from 2023 indicates that daily internet usage is nearly equal, with 86% of both men and women aged 16-74 accessing the internet regularly.[26] As shown in Table 1, the gender gap in regular internet use has decreased significantly, from 7 percentage points in 2018 to effective parity in daily use by 2023.[27] This trend reflects a positive movement toward equal digital engagement regarding basic internet access.

In certain Member States, particularly Finland, Estonia, and Bulgaria, women are even more active internet users than men. This demonstrates successful national efforts to achieve gender parity in basic digital engagement.[28] While this progress in internet usage is essential for foundational digital inclusion, it is important to recognise that achieving basic digital engagement does not automatically lead to higher-level digital skills or professional

[26] Eurostat. “People Online in 2024.” Eurostat News, 17 December 2024. European Union. https://ec.europa.eu/eurostat/web/products-eurostat-news/w/ddn-20241217-1
[27] International Telecommunication Union. Measuring Digital Development: Facts and Figures 2023. Geneva: ITU, 2023. https://www.itu.int/itu-d/reports/statistics/facts-figures-2023/
[28] Ibid.

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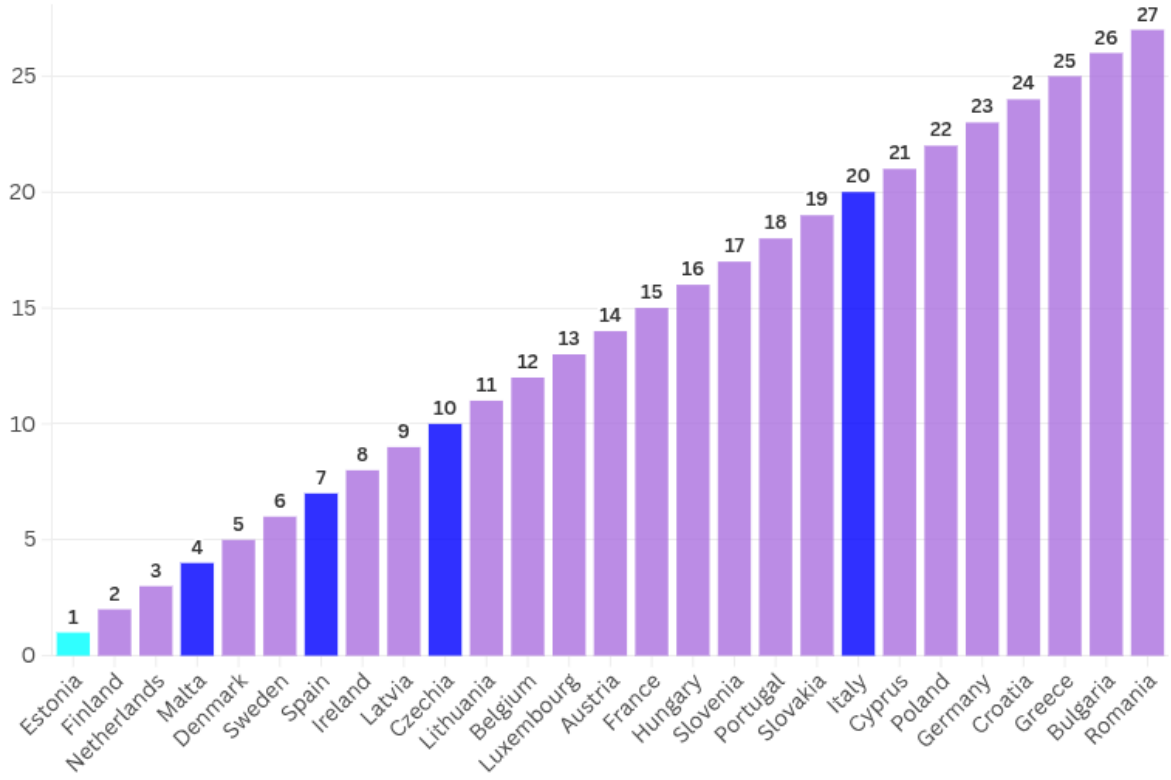
participation. This distinction highlights the existence of deeper and more complex barriers to advanced digital engagement, emphasising the need to focus resources on developing more sophisticated digital capabilities as basic access and literacy become established.

Chart 3: Use of internet among EU population (2024)



Source: [WiD Scoreboard, 2024]

The chart visually ranks 27 EU countries based on women's internet use. Estonia emerges as the leading country (ranked 1st), highlighted in yellow, indicating near-universal digital engagement among women. Other high-performing countries include Finland, Sweden, the Netherlands, and Denmark, which reflect strong digital ecosystems and inclusive access policies. The project partners' countries marked in red - Czechia (10th), Spain (7th), Malta (4th) currently exhibit higher levels of internet use among women. However, Italy (20th) is well below the EU average and lagging far behind leading countries such as the Netherlands and Finland. These rankings suggest that digital access alone does not guarantee active use, especially among women, and may reflect broader socio-cultural, educational, or policy-related barriers that require nuanced, context-specific responses.

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Use of the internet among people with disabilities

The EU does not systematically collect data on digital literacy within people with disabilities, limiting the capacity to design evidence-based inclusive policies.[29] The data from Eurostat show there are 25% of the entire EU population who are present with some form of disability.[30] In 2024, 87.2% of people with a disability in the EU had used the internet during the previous 12 months, compared to 95.2% of people without a disability.[31]

Yet, significant differences remain by severity of disability and type of activity. Among those with severe disabilities, 82.3% went online at least once in the past year, compared with 89% of people with moderate disabilities and 95.2% of those without disabilities, leaving a gap of nearly 13 percentage points between the most and least connected groups.[32]

This divide is most visible in activities such as online learning (19.5% for people with severe disabilities versus 35.8% for non-disabled users) and online banking (51% versus 69.3%). Conversely, people with disabilities are more likely to seek health information online: 50.9% (severe) and 59.1% (moderate) compared to 58.4% of non-disabled users.[33] Use of the internet for video or phone calls also lags behind, with 55.6% of those with severe disabilities engaging in this activity versus 75.3% of non-disabled people.[34]

Digital violence against women

In addition to the broader Digital Gender Gap, the Internet is used for widespread and systematic discrimination, and is an arena for multiple, recurring, and interrelated forms of gender-based violence. A specific form of exclusion affecting vulnerable groups is technology-facilitated violence. An umbrella term describing all forms of harm, abuse, or harassment enabled by digital technologies. Within this broad category, a distinction is made between digital violence in general, which may target anyone online, and technology-facilitated gender-based violence (TFGBV)[35], which specifically refers to violence rooted in gender inequalities and power imbalances. TFGBV disproportionately affects women, girls, and LGBTQI+ persons, taking forms such as image-based sexual abuse (IBSA), cyberstalking, body shaming, gendered hate speech, and other online harassment. Despite having equally severe emotional, physical, psychological, social, economic, and political impacts as offline GBV, it is often not recognised as violence. Significant gaps in access to justice leave many survivors of gender-based and online violence unwilling to report their experiences, often out of fear of

[29] Mediawijs. Mediawijs: Guiding Media Literacy in the Digital World. Brussels: Mediawijs, n.d. https://www.mediawijs.be/nl/medialiteracy

[30] Digital Inclusion Atlas. Evidence Digest: Digital Inclusion and People with Disabilities. Brussels: Digital Inclusion Atlas, March 2021. https://digitalinclusion.eu/wp-content/uploads/2021/03/Evidence-Digest-Digital-Inclusion-people-with-disabilities.pdf

[31] Eurostat. "Disability Statistics – Access to Information." Eurostat Statistics Explained. European Union, 2024. https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Disability_statistics_-_access_to_information

[32] Ibid.

[33] Luxtoday. "80% of People with Disabilities Have Used the Internet in 2024." Luxtoday, 2024. https://luxtoday.lu/en/society-en/80-of-people-with-disabilities-have-used-the-internet-in-2024

[34] European Disability Forum. Accessible Data Project. Brussels: European Disability Forum, October 2024. https://www.edf-feph.org/content/uploads/2024/10/belgium-accessible_DATA_project.pdf

[35] United Nations Population Fund (UNFPA). Technology-Facilitated Gender-Based Violence: A Growing Threat. New York: UNFPA, 2024. https://www.unfpa.org/sites/default/files/resource-pdf/TFGBV_Brochure-1000x560.pdf

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retaliation or mistrust in institutions. Those who do come forward may face further violence (for example secondary victimization), a situation worsened by the limited capacity and knowledge of legal and law enforcement professionals.[36] Private companies, particularly social media platform operators, are identified as a new form of duty bearers, with discussions focusing on their insufficient mechanisms for reporting, responding, and remedying.[37]

The impact of such violence is not evenly distributed. Individuals with lower levels of digital literacy, limited access to protective resources, or those living in restrictive social and cultural conditions face heightened risks. Women in households, particularly those balancing unpaid care work with limited digital skills or economic opportunities, are among the most vulnerable, as they may lack both the time and the tools to protect themselves online.

According to World Health Organization, one in ten women have already experienced a form of cyber violence since the age of 15[38]. Additionally, around 38% of women have personally experienced abuse, including harassment, non-consensual image sharing, or cyberstalking.[39] The report highlights that technology-facilitated gender-based violence not only causes direct harm but also has widespread indirect consequences, silencing the voices of women, LGBTQIA+ persons and other vulnerable groups and limiting their safe participation in the digital world.

Digital violence, encompassing online harassment, non-consensual image sharing, and cyberstalking, has emerged as a critical dimension of gender-based violence across the EU. Malta is among the few Member States that have explicitly legislated against cyber violence targeting women, alongside Cyprus and Romania.[40] This recognition represents progress in addressing the gendered nature of online abuse, but the country still faces major service gaps. Most notably, Malta lacks a national helpline for women victims of violence, which restricts immediate access to specialised support and leaves survivors dependent on fragmented services.[41]

In Italy, legal and policy responses have evolved to address cyber-violence explicitly: national measures recognise and criminalise multiple forms of online gender-based abuse, including image-based abuse, online harassment and cyber-stalking.[42] Italy also participates in national and international initiatives to strengthen prevention, reporting and victim support.[43] Civil-

[36] SIDA, Swedish International Development Cooperation Agency. (June 2019). Gender-Based Violence and Education. Online. https://cdn.sida.se/publications/files/sida62246en-gender-based-violence-online.pdf

[37] SIDA, Swedish International Development Cooperation Agency. (June 2019). Gender-Based Violence and Education. Online. https://cdn.sida.se/publications/files/sida62246en-gender-based-violence-online.pdf

[38] European Institute for Gender Equality. "Cyber Violence Against Women." EIGE. Last modified 2025. https://eige.europa.eu/gender-based-violence/cyber-violence-against-women?language_content_entity=en.

[39] Economist Intelligence Unit. "Measuring the Prevalence of Online Violence against Women." *EIU: Online Violence Women*, published March 1, 2021. https://onlineviolencewomen.eiu.com.

[40] European Institute for Gender Equality (EIGE). *Gender Equality Index 2024: Tackling Violence Against Women, Tackling Gender Inequalities*. Luxembourg: Publications Office of the European Union, 2025.

[41] European Institute for Gender Equality (EIGE). *Cyber Violence Against Women and Girls*. Luxembourg: Publications Office of the European Union, 2017. https://eige.europa.eu/sites/default/files/documents/2016.5486_mh0116751enn_pdfweb_20170215100603.pdf.

[42] Council of Europe. *Cyberviolence — Italy*. https://www.coe.int/en/web/cyberviolence/italy.

[43] European Institute for Gender Equality (EIGE). *Gender Equality Index 2024: Tackling Violence Against Women, Tackling Gender Inequalities*. Luxembourg: Publications Office of the European Union, 2025.

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society monitoring and media-watch initiatives, such as the Independent Observatory on Media against Toxic Narratives of Gender Violence (established 2023), complement legal measures by challenging harmful online narratives and promoting responsible reporting.[44]

In 2023, ISTAT launched an experimental study on gender-based violence in Italy, analysing over 1.2 million social media posts (Twitter, Facebook, Instagram, web articles) through machine learning. The research mapped how users react to topics like body-shaming, femicide, and sexual violence,[45] revealing that online discussions often spark both indignation and a surge in hate speech. [46] By comparing these insights with helpline data (1522), ISTAT showed how social media can either challenge or amplify gender stereotypes and violence.[47]

Violent language, while generally lower, tends to increase aggression in comments about gender violence, further highlighting an open front on which to take action. Several initiatives, both institutional and promoted by associations, are in fact moving on various fronts, prevention, education, support for victims and legislative intervention.

All aspects of human interaction online are gendered and the collection and exploitation of data by state and non-state actors are not gender neutral, exacerbating misogyny, heteropatriarchy, and gendered injustices in the digital age, including through online GBV. One example is the non-consensual distribution of photos and videos, a form of image-based sexual abuse (IBSA), which highlights the urgent need for strong consent protocols. Gendered dimensions of privacy are critical issues, and the distribution of photos and videos without consent is one form of online GBV, highlighting the need for adequate consent protocols.[48]

In Spain, the digital dimension of gender-based violence has become increasingly visible in public debates. While there is no comprehensive national legislation specifically dedicated to cyber violence against women, regional initiatives have begun to address this gap. Notably, the region of La Rioja has adopted a law recognising cyber violence as a form of gender-based violence, alongside femicide, sexual assault, harassment, and other abuses.[49] Public mobilisation, exemplified by the #SeAcabó movement in 2023, has opened space for discussions on sexism and consent, but has also provoked online backlash in the form of victim-blaming and xenophobic narratives.[50] This dual dynamic illustrates how digital platforms can amplify both feminist mobilisation and regressive responses. Spain has also developed

[44] "Nasce l'Osservatorio indipendente sui media contro la narrazione tossica della violenza di genere." *Globalist*, October 28, 2023. Accessed September 25, 2025. https://giulia.globalist.it/documenti/2023/10/28/nasce-losservatorio-indipendente-sui-media-contro-la-narrazione-tossica-della-violenza-di-genere/.

[45] United Nations Economic Commission for Europe (UNECE). Using Big Data to Study Violence Against Women and Girls. May 2023. https://unece.org/sites/default/files/2023-05/E5_WP19_Villante_EN.pdf

[46] United Nations Economic Commission for Europe (UNECE). Using Big Data to Study Violence Against Women and Girls and Its Challenges Online. Prepared by Alessandra Capobianchi, Maria Giuseppina Muratore, and Claudia Villante. Working Paper E5 WP19. Geneva: UNECE, May 2023. https://unece.org/sites/default/files/2023-05/E5_WP19_Villante_EN.pdf.

[47] Ibid.

[48] SIDA, Swedish International Development Cooperation Agency. (June 2019). Gender-Based Violence and Education. Online. https://cdn.sida.se/publications/files/sida62246en-gender-based-violence-online.pdf

[49] "Interview: La Rioja (Spain) at the Forefront to End Gender Violence," *PES Group in the European Committee of the Regions*, November 7, 2022, https://pes.cor.europa.eu/article/interview-la-rioja-spain-forefront-end-gender-violence.

[50] Itoiz Rodrigo Jusue, Katie Liston, Mark Doidge, Jack Black, and others, "SeAcabó: How a Mass-Mediated 'Social Drama' Made Visible and Confronted (Subjective and Objective) Violence in Women's Football in Spain," *Feminist Media Studies*, February 2025, https://www.researchgate.net/publication/388713481_SeAcabo_how_a_mass-mediated_social_drama_made_visible_and_confronted_subjective_and_objective_violence_in_women's_football_in_Spain.

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mechanisms such as the Women's Image Observatory, which monitors advertising and media portrayals of women, thereby addressing some of the cultural drivers that underpin online gender-based violence.[51]

In Czechia, recognition of digital violence against women remains limited. The country has not adopted specific legislation on cyber violence against women, unlike Malta, Cyprus, and Romania.[52] While prevalence rates of physical and sexual violence appear comparatively low, fewer than 25 % of women report such experiences,[53] this figure likely reflects significant underreporting. In the absence of targeted legal frameworks and specialised support, women in Czechia remain particularly vulnerable to online harassment, image-based abuse, and other forms of cyber violence.[54]

BEST PRACTISES BOX: EU policies and initiatives aimed at preventing and combating Technology Facilitated Gender Based Violence

App-Elles: A multilingual mobile application available in 12 countries that enables users to instantly alert trusted contacts, share their location in real time, and connect to emergency services in situations of danger or distress.

SHIELD: European AI-Powered Gender Based Violence Reduction Initiative, uses AI tools including a chatbot and app to help detect, prevent and provide early intervention regarding GBV among youth (16-25). Also offers training for youth workers and awareness campaigns.

GenderSAFE (Horizon / European Commission project): Supports higher education / research institutions to develop and implement policies for zero tolerance of gender-based violence, including creating monitoring instruments, capacity building, mutual learning.

Global Hub for Victims of Violence – Safe YOU / Sophia: Provides digital tools (a mobile app "Safe YOU", a multilingual app for legal & psychosocial support, secure evidence collection) and a chatbot "Sophia" to assist survivors, especially where digital technology can be misused.

[51] European Institute for Gender Equality (EIGE). *Gender Equality Index 2024: Tackling Violence Against Women, Tackling Gender Inequalities*. Luxembourg: Publications Office of the European Union, 2025.

[52] "Nenávist na internetu nebezpečně roste. Česko má nařízení o digitálních službách," *Deník.cz*, May 25, 2025, https://www.denik.cz/z_domova/nenavist-na-internetu-digital-service-act-narizeni-o-digitalnich-sluzbach.html.

[53] European Institute for Gender Equality (EIGE). *Gender Equality Index 2024: Tackling Violence Against Women, Tackling Gender Inequalities*. Luxembourg: Publications Office of the European Union, 2025.

[54] Kancelář veřejného ochránce práv, *Nenávistné projevy na internetu a rozhodování českých soudů: Výzkum veřejného ochránce práv 2020*, Sp. zn. 47/2019/DIS/PŽ, Č. j. KVOP-2720/2020, https://www.ochrance.cz/uploads-import/DISKRIMINACE/Vyzkum/47-2019-DIS-vyzkum_nenavist.pdf.

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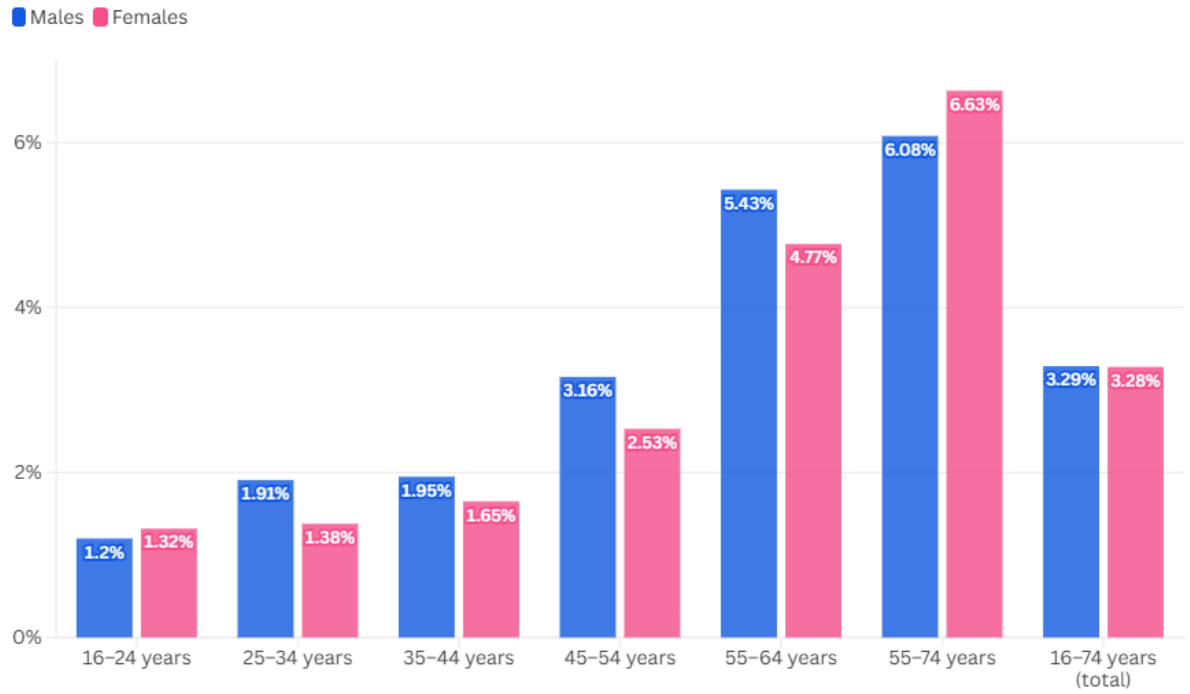
Skills Layer of the Digital Gender Gap

The landscape of digital skills[55] across the EU presents a mixed picture. While progress is being made in basic digital literacy, significant disparities persist, particularly in more advanced competencies, indicating a "digital ceiling" in skills development for women.

Chart 4: Individuals with no basic digital skills – EU-27 (2020-2024)



Source: Eurostat (2024)

When analysing the data on individuals with no basic digital skills across different age groups in the EU-27, several trends emerge. At the EU level, gender differences are generally small and fluctuate across age groups. In younger cohorts (16–24), the gap is almost negligible (–0.12), indicating near gender parity. However, the gap gradually widens with age, reaching its peak in the 55–64 age group, where 0.66 percentage points more men than women lack basic digital skills. Interestingly, in the oldest group (55–74), the trend reverses slightly (–0.55), suggesting that older women are marginally more disadvantaged in digital skills than men.

The largest gender gap is observed in Türkiye, where women without basic digital skills outnumber men by 16.8%. The opposite, though less pronounced, pattern appears in Lithuania, where the share of men with no basic digital skills exceeds that of women by 8.7 percentage points. While Italy and Spain rank among the top ten countries where a higher percentage of women than men lack basic digital skills, Czechia and Malta are both above the EU average. Malta ranks as the sixth worst-performing country in the EU, with 1.5 percentage points more men than women lacking basic digital skills.

[55] As the term digital skills is broad, in this text we adopt Eurostat's definition, which refers to five key areas: information and data literacy, communication and collaboration, digital content creation, safety, and problem-solving. A person is considered to have basic digital skills if they carried out at least one activity within the three months before the survey. https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Young_people_-_digital_world

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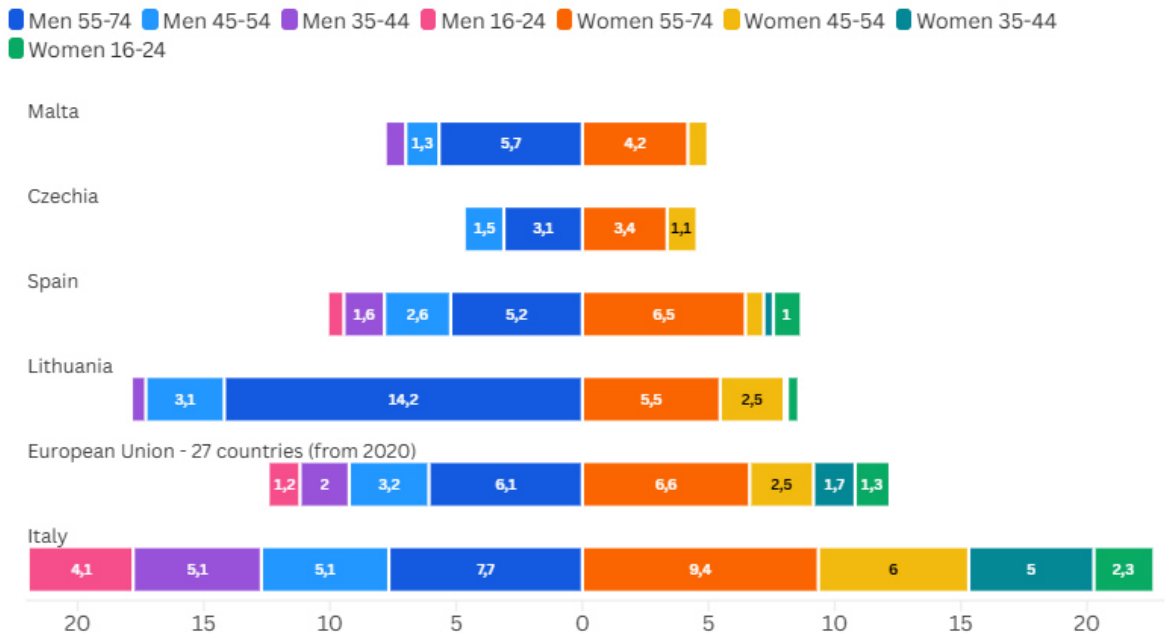
Table 3: Digital skills levels and gender gap in the EU, 2023

Skill Level	Men (% of individuals 16-74)	Women (% of individuals 16-74)
At Least Basic digital skills	56.69%	54.46%
Above-basic digital skills	29.30%	25.40%
At Least Basic Digital Content Creation Skills	69.42%	67.17%

Source: Eurostat, 2023

The Eurostat data show a clear generational and gendered divide in digital skills across the EU. In 2023, about 56% of EU adults (16–74) had at least basic digital skills.[56] Overall, 57% of men versus 54% of women had basic skills. However, this gap inverts by age: among 16–24-, 25–34-, and 35–44-year-olds more women than men report basic skills, whereas from age 45 onward men lead. For example, 72% of women versus 68% of men aged 16–24 had basic skills. While only 23% of women and 34% of men aged 65–74 did so.[57]

Chart 5: Individuals with no overal digital skill (%) 2023



[56] Eurostat. "Skills for the Digital Age." Statistics Explained. European Union, April 2024. https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Skills_for_the_digital_age
[57] Ibid.

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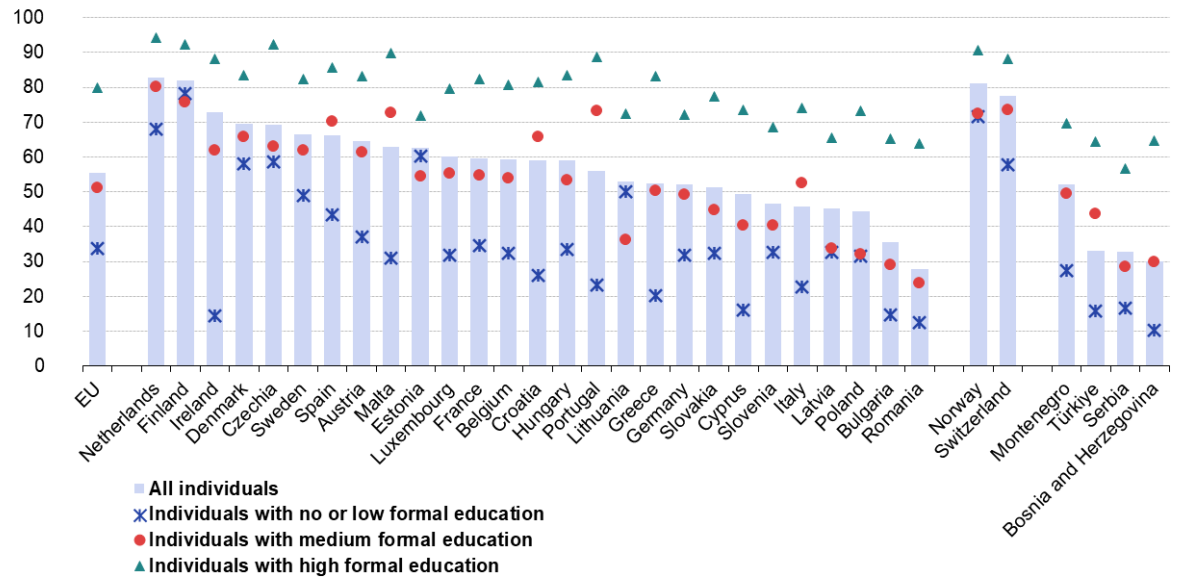
From the intersectional perspective, the largest gender gaps in the lack of basic digital skills appear in the older age groups. Among people aged 55–74, the widest gap is recorded in Lithuania with +8.7 pp, meaning significantly more men than women lack basic digital skills, while the EU average is slightly negative (–0.55 pp), indicating women are marginally worse off. Within the project countries, Malta shows one of the worst results (+6 pp), Czechia stands at +0.5 pp, while Spain (–1.68 pp) and Italy (–0.25 pp) are performing better, even below the EU average. By contrast, the extreme negative gap is observed in Türkiye (–16.84 pp), where women are far more disadvantaged. In the age group 45–54, the largest gap is in Greece (+3.7 pp) with more men lacking digital skills, while the EU average is +0.63 pp. Among project countries, Spain ranks third worst with +1.89 pp, Malta shows +0.59 pp, Czechia +0.39 pp, and Italy stands out with a reversed gap (–0.91 pp) where women are more disadvantaged. Again, Türkiye marks the most extreme case (–9.99 pp).[58]

Chart 4: Individuals with at least basic digital skills, by education level, 2023 (% of individuals aged 16-74)



Source: Eurostat (online data code: isoc_sk_dskl_i21)

eurostat

Source: Eurostat, 2023

While basic internet use is widespread, it does not equate to comprehensive digital proficiency. Digital skills encompass more than just basic internet use. They include areas such as data and information literacy, digital content creation, communication and collaboration, online safety, and problem-solving. In 2023, only 55% of EU adults aged 16 to 74 possessed at least

[58] https://ec.europa.eu/eurostat/databrowser/bookmark/8735dc86-841d-43e2-95d8-0b23fe46960f?lang=en&createdAt=2025-10-09T11:39:44Z

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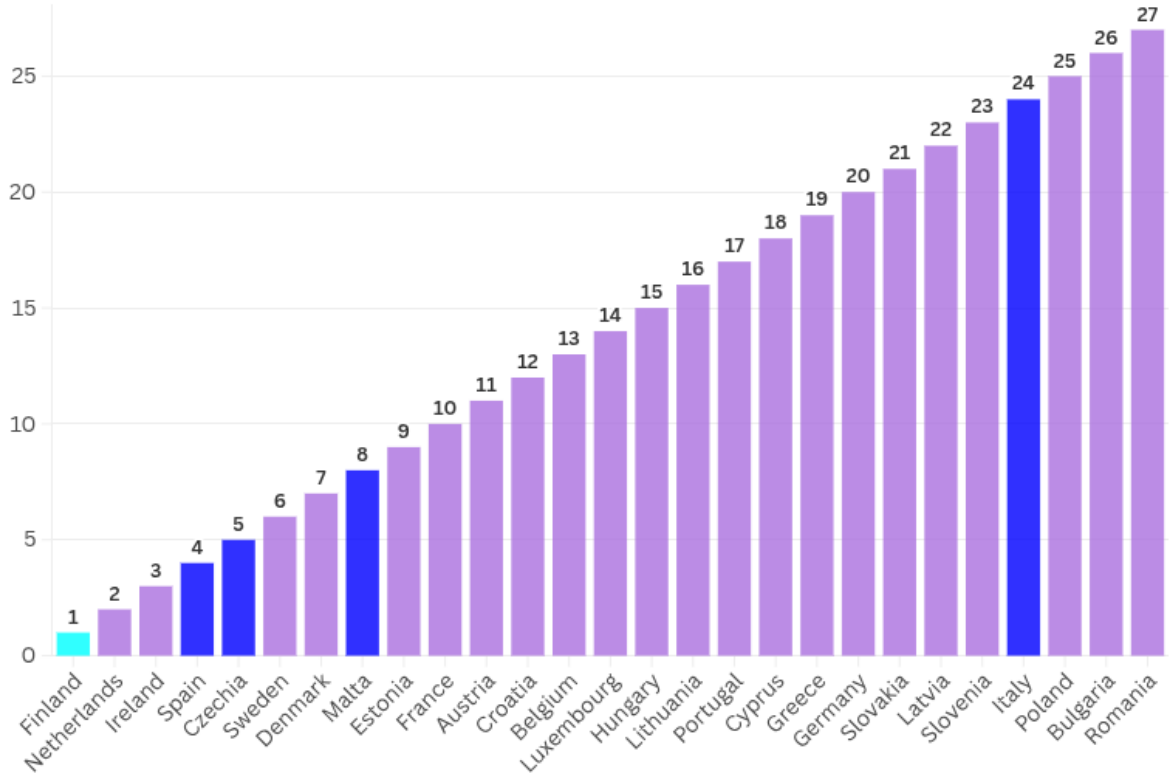
basic digital skills, which encompass proficiency across these five areas.[59] Approximately 32% of Europeans still lack these fundamental competencies altogether.[60]

Basic internet activities, such as browsing, online messaging, and using email, form the foundation of digital literacy. However, without additional skills like critically evaluating online content, managing data, collaborating online, and protecting privacy, full participation in the digital world remains unattainable.

Importantly, over 90% of jobs in Europe now require basic digital knowledge in addition to traditional literacy and numeracy skills, highlighting the urgent need to improve digital competence on a large scale.[61] Factors such as age, educational attainment, and employment status significantly affect digital skill levels, revealing persistent divides in digital access and capability despite widespread internet availability.

Chart 5: Internet user skills in EU Member States



Source: WiD Scoreboard, 2024

[59] Eurostat. "Digital Skills in 2023: Impact of Education and Age." Eurostat News, 22 February 2024. https://ec.europa.eu/eurostat/web/products-eurostat-news/w/ddn-20240222-1?utm

[60] European Data Portal. "Digital Literacy in the EU: An Overview." Data Stories, 6 December 2023. https://data.europa.eu/en/publications/datastories/digital-literacy-eu-overview

[61] ibid.

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Internet user skills in EU Member States illustrates the share of individuals with at least basic digital skills across EU countries in 2024. Czechia (5th), Malta (8th), and Spain (4th), rank among the top performers, with some of the lowest proportions of digitally unskilled individuals. This places them ahead of many traditionally strong digital economies. In contrast, Italy (24th) and countries like Romania or Bulgaria, show higher proportions of individuals without basic skills, positioning them at the bottom of the ranking. Finland, the Netherlands, and Ireland demonstrate strong digital skills across their populations, significantly outperforming most countries from Eastern Europe.[62]

Use of smart devices

Research also shows that the use of smart home technologies (SHT) is highly gendered.[63] In Denmark, where 23% of the population used SHT in 2019 (compared to 10% in Europe overall), almost two-thirds of users were men.[64] Men are typically the ones who purchase, install, and configure these devices, often framing this "digital housekeeping" as a playful or leisure activity. Women, however, remain the primary operators of everyday domestic tasks, meaning that the added complexity of interacting with smart systems often falls back on them. Since most of these technologies are designed by men, who are not usually responsible for household labour, they often fail to account for the practical realities of domestic work. This mismatch can make tasks more time-consuming rather than easier, leading many women to view SHT as frustrating or unnecessary.[65] As a result, while smart devices are promoted as labour-saving innovations, in practice they risk reinforcing gendered divisions of labour and even adding to women's workload rather than reducing it.

[62] Eurostat. "Statistics Explained." Eurostat Statistics Explained. European Union, 2024. https://ec.europa.eu/eurostat/statistics-explained/index.php/Statistics_Explained

[63] Aagaard, L. K. "When Smart Technologies Enter Household Practices." Scandinavian Journal of Sociology 59, no. 3 (2022): 345–362. https://doi.org/10.1080/14036096.2022.2094460.

[64] Ibid.

[65] Ibid.

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BEST PRACTISES BOX: EU policies and initiatives aimed at improving digital skills among women and girls.

EU Digital Education Action Plan (2021-2027) aims to improve digital literacy and increase access to digital education for women and girls through investments in programs, curriculum reforms, and training initiatives

Union of Skills package (2025) includes a STEM education strategic plan designed to address gender stereotypes, make STEM fields more appealing, and facilitate access to STEM education through mentorship and modernised interdisciplinary programs.

Girls Go Circular specifically equip schoolgirls aged 14-19 with digital and entrepreneurial skills through online learning about the circular economy.

European Digital Skills Awards (EDSA) feature a 'Women in ICT Careers' category to recognise projects that increase female ICT professionals and upskill women in the sector.

EU Code Week actively encourages girls' participation in computer programming and highlights women role models.

Digital Decade policy programme 2030 sets ambitious targets to increase the number of female ICT specialists, emphasising women's access to this field and increasing ICT graduates.

Women in Digital Declaration, where EU Member States commit to national strategies and monitoring mechanisms to reduce the gender gap in ICT.

Employment Layer of the Digital Gender Gap

The digital gender gap extends beyond access to devices and connectivity, it includes deeper structural inequalities in how different groups of people engage with, contribute to, and benefit from the digital transformation.[66] Addressing gender disparities in employment within STEM and ICT is crucial not only for equity in the labour market, but also for the quality and inclusiveness of technological outcomes. When women are not part of research, product design, or development processes, the resulting innovations may overlook or reinforce gender biases, making digital tools less relevant, usable, or safe for large parts of the population.

Women's underrepresentation is equally pronounced in Research and Development (R&D) and broader science and engineering roles. According to 2023 STEM statistics, less than 30%

[66] International Telecommunication Union (ITU). “Bridging the Gender Divide.” ITU Media Centre Backgrounder. International Telecommunication Union, n.d. https://www.itu.int/en/mediacentre/backgrounders/Pages/bridging-the-gender-divide.aspx

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of researchers worldwide are women.[67] In Europe, the average percentage of female researchers in the EU-27 was 33.7% in 2021, with minimal change noted over the past decade.[68] By 2023, women made up 41% of the workforce in science and engineering in the EU.[69] However, this percentage varies significantly by sector: while women represent 45.6% of the workforce in services, their share falls to just 22.4% in manufacturing.[70]

Care and household management responsibilities are not intrinsically linked to any gender, however, societal norms and the traditional division of labour, disproportionately assign the majority of unpaid caregiving and domestic tasks to women. Parenthood and broader caregiving duties exacerbate these pressures. The "ideal worker" standard in these sectors assumes that individuals have no significant caregiving duties, expecting long hours and constant availability.[71] This norm impacts all caregivers but is more detrimental for women, who often bear greater household and caregiving responsibilities. Consequently, they face heightened work-family conflict and burnout, leading many to consider leaving demanding careers. For instance, during the COVID-19 pandemic, women faculty in computer science were more likely than men to contemplate leaving their positions due to these challenges.[72]

The unequal burden of caregiving creates "time poverty" for women, hindering their ability to continuously upskill in the rapidly changing digital landscape.[73] This leads to a significant barrier to women's participation in innovation sectors. Moreover, AI systems risk perpetuating and amplifying existing societal biases due to biased training data and a lack of diversity within development teams.[74] This can lead to discriminatory outcomes in critical areas such as hiring and healthcare.[75] Globally, women are more likely to pause their careers for parenting (33.6% vs. 7.3% of men), and their typical breaks last longer: two years for parenting and 1.5 years for caregiving.[76] Women also tend to take breaks earlier, with a median of 8.9 years of work before their first break compared to 10.3 years for men.[77]

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[67] EU Neighbours East. “Women’s Participation in the EU’s Digital Economy: Bridging the Gap.” EU Neighbours East Blog, 8 March 2023. https://euneighbourseast.eu/young-european-ambassadors/blog/womens-participation-in-the-eus-digital-economy-bridging-the-gap/

[68] Federal Statistical Office of Germany (Destatis). “Women in Research and Development.” Science, Technology and Digital Society. Federal Statistical Office of Germany, 29 November 2024. https://www.destatis.de/Europa/EN/Topic/Science-technology-digital-society/FemaleResearchers.html

[69] Eurostat. “7.7 Million Female Scientists and Engineers in the EU.” Eurostat News, 11 February 2025. https://ec.europa.eu/eurostat/web/products-eurostat-news/w/edn-20250211-1

[70] Eurostat. “41% of People Employed as Scientists and Engineers Are Women.” Eurostat News, 12 February 2024. https://ec.europa.eu/eurostat/web/products-eurostat-news/w/ddn-20240212-1

[71] National Center for Biotechnology Information (NCBI). Bookshelf. U.S. National Library of Medicine. https://www.ncbi.nlm.nih.gov/books/

[72] Ibid.

[73] UN Women. “How AI Reinforces Gender Bias—and What We Can Do About It.” UN Women News, 5 February 2025. https://www.unwomen.org/en/news-stories/interview/2025/02/how-ai-reinforces-gender-bias-and-what-we-can-do-about-it

[74] UN Women. “How AI Reinforces Gender Bias—and What We Can Do About It.” UN Women News, 5 February 2025. https://www.unwomen.org/en/news-stories/interview/2025/02/how-ai-reinforces-gender-bias-and-what-we-can-do-about-it

[75] UN Women. “Interview: Gender Equality Is Key to a Just Renewable Energy Future.” UN Women News, 21 April 2025. https://www.unwomen.org/en/news-stories/interview/2025/04/interview-gender-equality-is-key-to-a-just-renewable-energy-future

[76] LinkedIn Economic Graph. *Global Gender Gaps in Career Breaks*. November 6, 2024. https://economicgraph.linkedin.com/content/dam/me/economicgraph/en-us/PDF/gender-gaps-in-career-breaks.pdf.

[77] Ibid.

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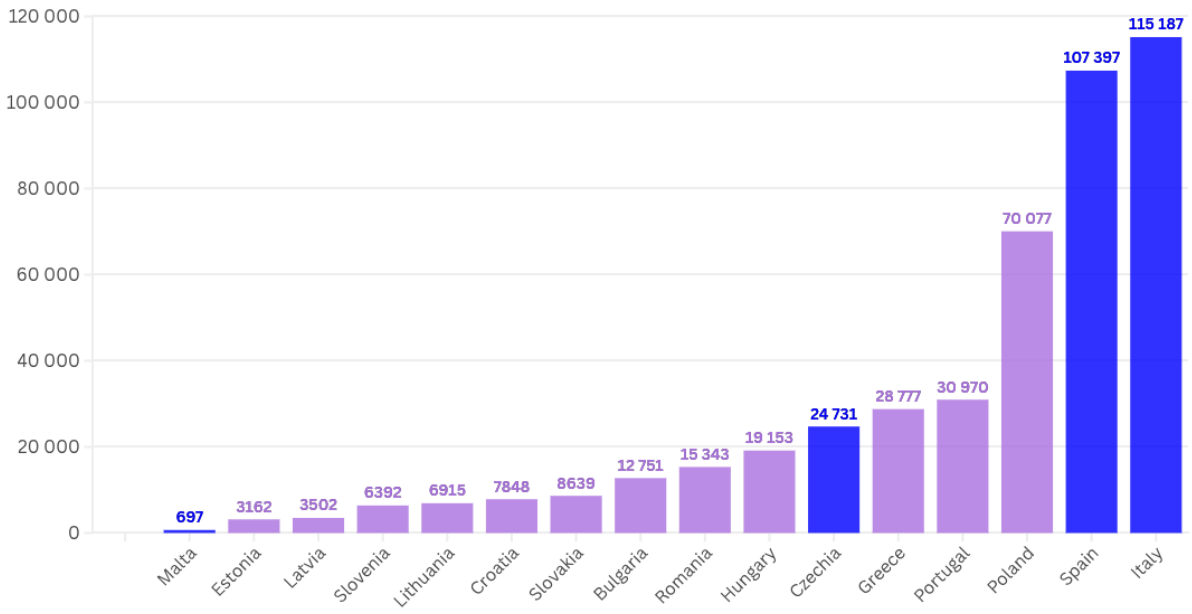
Chart 6: Women working in R&D, 2022



Source: Eurostat and OECD database, 2022
Note: For BE, DK, GE, IR, FR, CY, LU, NL, AU, FI and SU data not available.

The chart shows the number of women working in R&D across EU countries, with Italy (115,187) and France (107,397) leading in absolute numbers, followed by Spain (28,777) and Czechia (24,731). Other notable figures include Austria (70,077) and Portugal (30,970), while countries like Malta (697) and Luxembourg (3,502) have the lowest numbers.

The participation of women in ICT professions remains a critical area of gender disparity across the EU. Despite the digital economy being the fastest-growing labour sector, women continue to be significantly underrepresented, particularly in high-skill ICT roles and leadership positions.

Table 4: Women ICT specialists as % of total ICT specialists in the EU (2013-2023)

Year	Women ICT Specialists (%)	EU 2030 Target (% of total ICT Specialists)
2013	15.50%	~50% (Gender Convergence)
2016	16.50%	~50% (Gender Convergence)
2019	18%	~50% (Gender Convergence)
2023	19.40%	~50% (Gender Convergence)

Source: Eurostat, UNECE Group of Experts Meeting on Gender Statistics
Note: EU 2030 target for "gender convergence," often interpreted as near parity (e.g., 45-50%).

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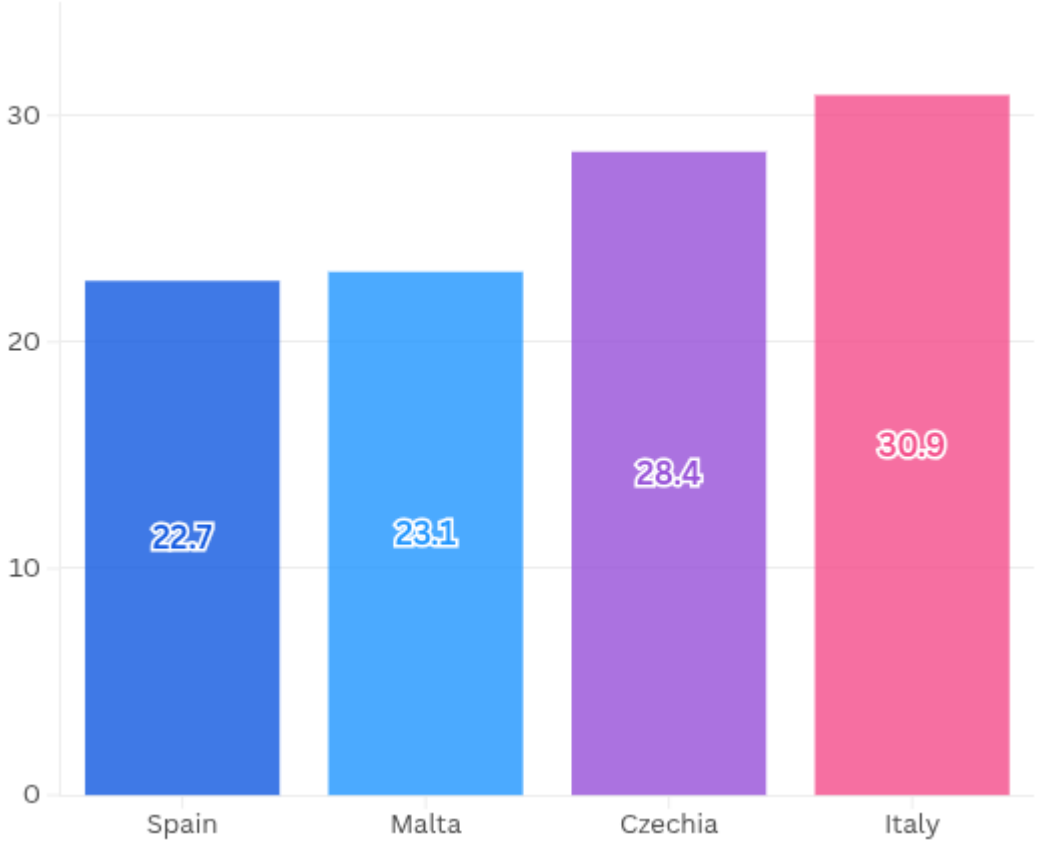
In the EU, women make up less than 20% of ICT specialists.[78] Even fewer are represented in leadership, cybersecurity, or AI-related professions.[79]

The most pronounced gender gap can be seen in AI related professions. Diversity in AI development is crucial, as these systems are far from neutral, they mirror the values, perspectives, and biases of their developers. A lack of diversity within the AI workforce directly shapes the technologies produced, often reinforcing and magnifying existing inequalities tied to gender and race. The effects of this gender gap reach well beyond the tech sector itself. Since AI increasingly influences how we interact with institutions, services, and one another, the absence of varied perspectives in its creation raises serious issues of fairness, bias, and representation.[80]

Chart 7: Comparing male vs female AI talent shares in the EU (in %)



Source: Revelio Labs, 2024

[78] European Institute for Gender Equality (EIGE). Women in the ICT Sector. European Union, n.d. https://eige.europa.eu/publications-resources/toolkits-guides/work-life-balance/women-in-ict?language_content_entity=en.
[79] Ibid.
[80] Interface Europe. AI's Missing Link: The Gender Gap in the Talent Pool. October 10, 2024. https://www.interface-eu.org/publications/ai-gender-gap#introduction

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The data on women's participation in the AI workforce show a persistent gender gap across Europe, with significant differences between countries. While some Northern and Eastern European states, such as Latvia and Finland, exceed 40% female representation, many of the larger EU countries remain far below this level. Looking specifically at Italy (30.9%), the Czech Republic (28.4%), Malta (23.1%), and Spain (22.07%), women make up less than one-third of AI professionals, highlighting their underrepresentation in critical fields driving Europe's digital and green transitions. These figures are particularly striking given the EU-wide policy focus on innovation and sustainability, where diverse perspectives are essential to avoid reinforcing existing gender and social biases in AI systems. The relatively higher shares in Italy and the Czech Republic compared to Malta and Spain suggest that structural and cultural factors play a strong role in shaping access to AI careers. Overall, the uneven distribution underscores the urgency for EU-wide and national strategies to support women in ICT and AI, addressing both systemic barriers and educational pathways that shape career choices from an early stage.

Algorithmic bias poses a significant challenge in modern job hiring, as artificial intelligence (AI) systems, often reproduce and amplify existing human prejudices.[81] The main causes are biased training datasets and design choices that reflect historical inequalities.[82]

The tangible impacts of this bias are evident in discriminatory hiring practices: gender bias has been widely observed. From downgraded female applicants, (Amazon's hiring tool 2014), to Racial bias, to sexist and racist remarks.

To mitigate these issues, a multifaceted approach is recommended. Technical solutions include constructing more unbiased datasets through methods like reconfiguring unbalanced data, using equitable data sources, integrating "small data" with "big data," and employing autonomous testing and oversampling.[83] Enhancing algorithmic transparency is also crucial to address the "algorithmic black box" dilemma, allowing for better understanding and remediation of deviant algorithms.[84] Furthermore, technological tools like Blendoor software, decoupling techniques, and bias detection tools such as Google's What-If tool and Facebook's Fairness Flow can help identify and reduce bias.[85] Finally, algorithmic literacy for both applicants and evaluators is essential to foster a critical understanding of AI's potential pitfalls and promote fair treatment and equal employment opportunities for all.

[81] Kniepkamp, Sophie, Florian Pethig, and Julia Kroenung. "Algorithmic Bias in Job Hiring." Gender Policy Report, 22 July 2024. https://genderpolicyreport.umn.edu/algorithmic-bias-in-job-hiring/

[82] Chen, Zhisheng. "Ethics and Discrimination in Artificial Intelligence-Enabled Recruitment Practices." Humanities and Social Sciences Communications 10, no. 567 (2023). https://doi.org/10.1057/s41599-023-02079-x

[83] Chen, Zhisheng. "Ethics and Discrimination in Artificial Intelligence-Enabled Recruitment Practices." Humanities and Social Sciences Communications 10 (2023), Article 567. https://doi.org/10.1057/s41599-023-02079-x

[84] Ibid.

[85] Ibid.

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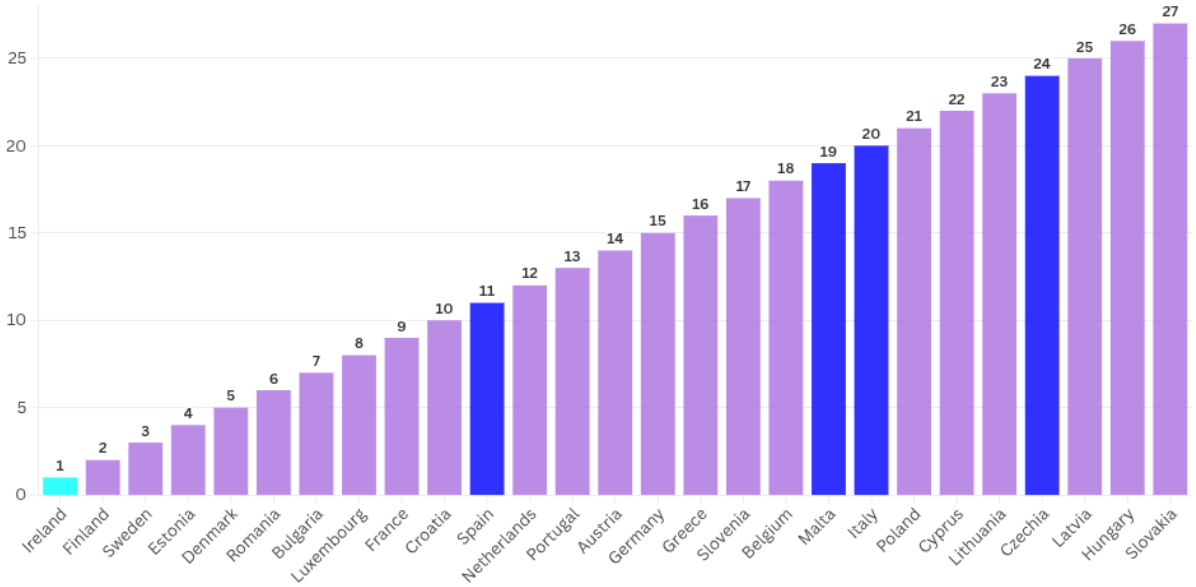
Chart 8: Specialist skills and employment



Source: WiD scoreboard, 2024

This chart compares EU countries based on their rankings in the "Specialist Skills and Employment" dimension of the Women in Digital Scoreboard 2024.[86] Ireland ranks first (1st), followed by Finland (2nd), Sweden (3rd), and Estonia (4th), confirming the strong performance of Nordic countries in fostering digital specialist skills and employment among women. At the opposite end, the worst performers in this category are Slovakia (27th), Latvia (26th), and Hungary (25th), indicating significant challenges in supporting women in digital specialist roles in these countries.

Among the partner countries, Czechia (24th) and Italy (20th) are among the lowest ranked, indicating substantial gaps in women's specialist digital skills and representation in ICT roles. Malta (19th) also performs poorly, despite often ranking better in other digital areas. Spain (11th) stands out among them with a mid-table performance. Overall, the partner countries are significantly behind the top performers, underscoring regional disparities in women's digital employment across the EU.

[86] European Commission. "Women in Digital Scoreboard 2024." *Shaping Europe's Digital Future* (news), published 12 August 2024. Accessed 8 October 2025. https://digital-strategy.ec.europa.eu/en/news/women-digital-scoreboard-2024.

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BEST PRACTISES BOX: National initiatives Encouraging women's participation in tech careers and professional development

In **Czechia**, the organization **Czechitas** was founded to empower women in technology and bridge the gender gap. It offers comprehensive IT courses and workshops, primarily delivered online to reach women across the country, including young professionals, mothers re-entering the workforce, and women from rural communities. Czechitas provides career workshops, individual consultations, and explicit support for mothers, recognising the complex nature of women's digital inclusion and work-life balance.

In **Italy**, the **IT@Ca Project**, promoted by the Fund for the Digital Republic, offers free and personalized training and job placement for 210 women, including vulnerable categories such as migrants and those excluded from the labour market. Crucially, this project provides study/work conciliation services, including baby parking and babysitting, and guarantees internships with a high conversion rate into employment, directly addressing the needs of women with caregiving responsibilities.

Ireland founded the **Women-ReBoot program** specifically targets women re-entering the tech workforce after career breaks, often due to family care demands. This initiative provides intensive training to update skills, offers paid work experience (extended to three months based on feedback), and includes one-to-one coaching, mentoring, and peer group support, demonstrating the business benefits of employing experienced women returners.

Innovation Layer of the Digital Gender Gap

Innovation, whether through launching a startup, designing new technologies, or shaping emerging markets, is a domain defined by uncertainty, high risk, competition, and rapid change. Success in this environment often requires financial capital, strong networks, and the confidence to take risks, conditions that systematically disadvantage women, particularly those facing structural barriers and gender bias relating to caregiving responsibilities, economic insecurity, or exclusion from male-dominated sectors. This gender gap in innovation is not only a matter of representation but also affects who defines the problems worth solving, whose needs are met, and who benefits from technological progress.

Women are significantly underrepresented in innovation ecosystems. Only 9% of inventors in the EU are women, according to 2018–2021 patent data, a figure that has remained stagnant over the past decade. Over 90% of patent applications are submitted by all-male or male-majority teams, while only 4% are submitted by all-female teams and a further 5% by gender-balanced teams (She Figures 2024).[87]

[87] Directorate-General for Research and Innovation, European Commission. She Figures 2024: Gender in Research and Innovation. Luxembourg: Publications Office of the European Union, 2025. South EU Neighbours. "She Figures 2024 —

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The gender imbalance is similarly striking in digital entrepreneurship. Globally, men are five to ten times more likely than women to be founders of tech-driven enterprises.[88] According to the EU Start-up Monitor, in Europe, only 7% of startups are founded by all-female teams, compared to 64% by all-male teams.[89] Overall, just 14.8% of startup founders in the EU are women, and only 6% of European women engage in early-stage entrepreneurship, the lowest female participation rate globally in 2016.[90]

Table 5: Women's vs. men's representation in EU digital leadership and start-ups

Year	Metric	Women	Men
2024	% of All-Women Tech Startup Teams	69,000+, with $309 billion raised since inception	-
2024	% Global share of Venture Capital	2.3% (~$6.7 bn)	83.6% (~$241.9 bn)
2024	Average deal size	~$5.2 m	~$11.7 m
2023	% representation on tech position	25%, 5% in leadership roles	-
2022	% share of deep tech start-up founders	14% (women-led only teams)	76% (men-led only teams)

Source: Europe Commission, SciencesPo-Women in Business, SISTA BCG, Founders Forum Group

This underrepresentation is rooted in a complex web of gendered and intersectional barriers, including bias in funding processes, exclusion from high-growth sectors, inflexible business environments, and persistent stereotypes about caregiving roles and leadership capabilities.[91] These systemic constraints do not affect all women equally: young mothers, women from marginalised communities, and those without financial safety nets are disproportionately excluded from innovation spaces.

A particularly significant obstacle is women's limited access to financial capital. According to surveys, 75% of women entrepreneurs rely on personal savings, 24% on help from family and friends, but only 27% manage to secure bank loans, and fewer than 3% obtain venture capital or angel investment.[92] This lack of access persists despite evidence showing that women-led

Compressed PDF." February 2025. https://south.euneighbours.eu/wp-content/uploads/2025/02/she-figures-2024-KI0924566ENN_compressed.pdf

[88] SPF (Social & Public Services Foundation). "SPF Gender News: 8 December 2023." SPF, December 8, 2023. https://www.spf.org/en/gender/news/20231208.html

[89] Young European Ambassadors. "Women's Participation in the EU's Digital Economy: Bridging the Gap." EU Neighbours East, December 2024. https://euneighbourseast.eu/young-european-ambassadors/blog/womens-participation-in-the-eus-digital-economy-bridging-the-gap/

[90] Gender STI. Women in the Digital Age. December 12, 2024. https://www.gender-sti.org/wp-content/uploads/2024/12/Women-in-the-digital-age.pdf

[91] European Commission, Directorate-General for Research and Innovation. She Figures 2024: Gender in Research and Innovation – Statistics and Indicators. Publications Office of the European Union, 2025. https://op.europa.eu/en/publication-detail/-/publication/7646222f-e82b-11ef-b5e9-01aa75ed71a1/language-en

[92] Eurochambres & UN Women (Europe and Central Asia Regional Office). Eurochambres Women Entrepreneurs Survey 2025: Unveiling Insights from the Women Entrepreneurs. Brussels: Eurochambres / UN Women, April 2025. https://www.eurochambres.eu/wp-content/uploads/2025/04/Eurochambres-Women-Entrepreneurs-survey-2025-Unveiling-insights-from-the-women-entrepreneurs.pdf

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businesses have equal or better loan repayment rates than male-led ones. One-third of women report facing discriminatory attitudes from investors, who often perceive their ventures as hobbies rather than legitimate businesses. This undermines women's credibility and hinders their "limit the initial scale and growth potential of the business, since women may invest only what they can afford to risk."[93] Moreover, women are more likely to operate "micro-enterprises" with fewer resources and smaller teams, which may limit their growth potential and visibility in innovation spaces.[94]

This issue is further compounded by the digital capabilities and technological adoption rates within businesses, particularly for smaller enterprises. Digital transformation is a key priority for the EU, aimed at enabling businesses to improve their products and services and gain competitiveness, often by shifting sales online.[95] The EU has set ambitious targets for this, including that over 90% of small and medium-sized enterprises (SMEs) should achieve at least a basic level of digital intensity by 2030.[96] However, current data indicate a significant gap. In 2024, while 74% of all EU businesses had reached a basic level of digital intensity, the share for SMEs was 73%, falling approximately 20 percentage points below the 2030 target. In stark contrast, large businesses achieved 98%. This disparity is even more pronounced when examining higher levels of digital intensity, where large businesses had significantly greater shares (41% for very high, 46% for highdigital intensity) compared to SMEs (6% for very high, nearly 27% for high). Most SMEs recorded low (40%) or very low (27%) digital intensity levels.[97]

This digital gap extends to the adoption of specific technologies crucial for modern business growth and visibility:

- Cloud services: In 2023, 78% of large businesses purchased cloud services, whereas only 44% of SMEs did.
- Artificial Intelligence (AI): In 2024, 41% of large businesses used AI, compared to only 13% of SMEs.
- Social media for business: While 61% of all EU businesses used social media in 2023, 86% of large businesses did so, compared to 60% of SMEs.
- E-sales: In 2024, 46% of large businesses conducted e-sales, more than double the rate of SMEs (23%). Consequently, e-sales accounted for 24% of the total turnover for large businesses, but only 12% for SMEs.

Given that women are more likely to operate "micro-enterprises," which fall within the SME category, these businesses inherently face challenges in achieving high digital intensity.[98]

[93] Ibid.

[94] Ibid.

[95] Eurostat. Digitalisation in Europe – 2025 Edition. Interactive Publication. Luxembourg: Publications Office of the European Union, April 29, 2025. https://ec.europa.eu/eurostat/web/interactive-publications/digitalisation-2025#e-government

[96] Ibid.

[97] Eurostat (European Commission). Digitalisation in Europe – 2025 Edition. Interactive Publication. Luxembourg: Publications Office of the European Union, April 29, 2025. ISBN 978-92-68-23626-0; ISSN 2600-3368; DOI: 10.2785/3102705. https://ec.europa.eu/eurostat/web/interactive-publications/digitalisation-2025#e-government

[98] Eurochambres & UN Women (Europe and Central Asia). Eurochambres Women Entrepreneurs Survey 2025: Unveiling Insights from the Women Entrepreneurs. Brussels: Eurochambres / UN Women, April 15,

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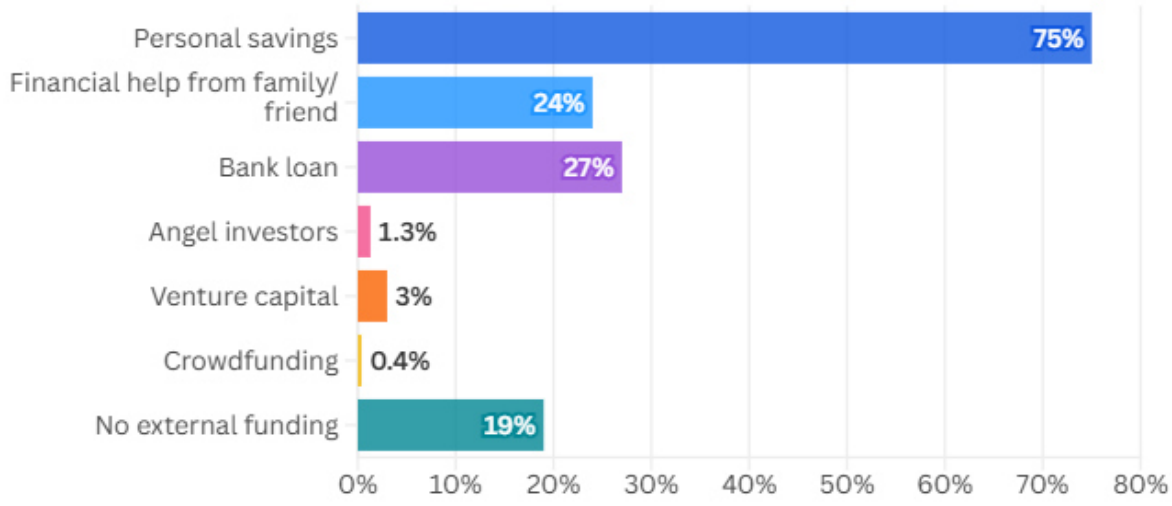
Their lower adoption of crucial digital technologies such as cloud computing, AI, and strategic use of social media directly limits their capacity to innovate, reach broader online markets, enhancing its profit (which makes it more stable) and enhance efficiency. This digital disadvantage can indeed "limit the initial scale and growth potential of the business" and restrict their "visibility in innovation spaces," as they are less equipped to compete effectively in the increasingly digitalised European economy.[99]

Chart 9: Sources of financing used by respondents (women entrepreneurs) to get their business started.



Source: Eurochambers, 2025

The consequences of these biases are reflected in earnings and leadership positions. Women working in startups earn less than their male counterparts and more than double the EU's average gender pay gap[100]. Women are also significantly underrepresented in strategic roles, holding only 13% of C-suite positions in European tech firms. This disparity starts early: women are often offered lower starting salaries, and gender bias in negotiations persists regardless of experience or promotion rates.[101]

Another critical issue is sectoral segregation. Women-led businesses are typically concentrated in service-oriented sectors such as retail, education, or healthcare, while they remain underrepresented in STEM and high-tech innovation. This reduces their access to fast-growing, high-profit sectors and the networks where innovation is most rewarded. In male-dominated fields like IT, women report greater pressure to prove their competence and higher pressure to appear "professional."[102]

2025. https://www.eurochambres.eu/wp-content/uploads/2025/04/Eurochambres-Women-Entrepreneurs-survey-2025-Unveiling-insights-from-the-women-entrepreneurs.pdf

[99] Ibid.

[100] Figures.hr. "Gender Pay Gap in European Startups: How To Reduce It?" Figures.hr, 24 June 2022. https://figures.hr/post/the-gender-pay-gap-in-european-startups

[101] Sifted. "How to Fix Gender Pay Gap." Sifted, 9 March 2023. https://sifted.eu/articles/how-to-fix-gender-pay-gap

[102] Eurochambres & UN Women (Europe and Central Asia). Eurochambres Women Entrepreneurs Survey 2025: Unveiling Insights from the Women Entrepreneurs. Brussels: Eurochambres / UN Women, April 15, 2025. https://www.eurochambres.eu/wp-content/uploads/2025/04/Eurochambres-Women-Entrepreneurs-survey-2025-Unveiling-insights-from-the-women-entrepreneurs.pdf

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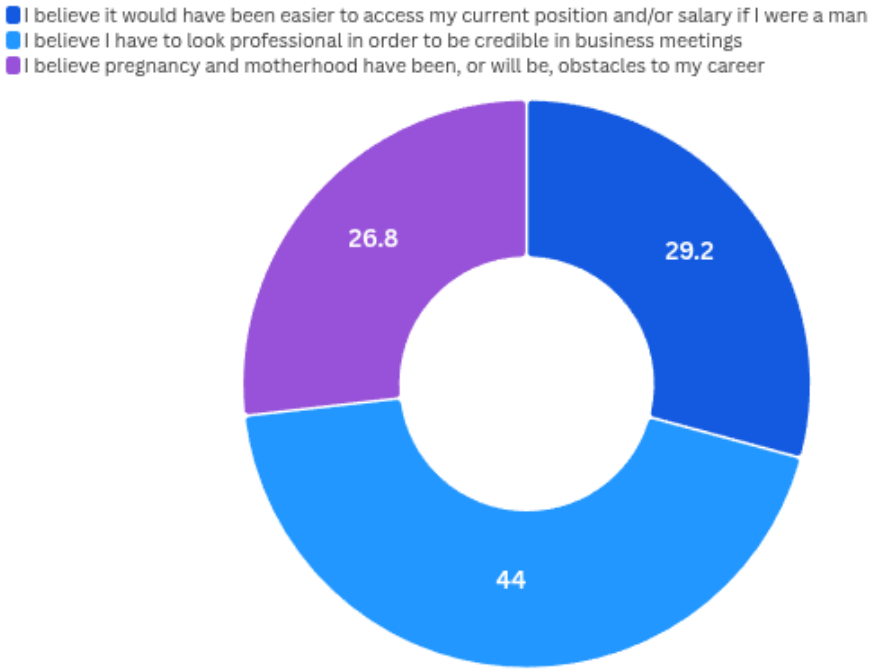
Chart 10: Women entrepreneurs indicated how much they agree with these sentences linked with gender perception (In percents %)



Source: Eurochambers, 2025

Research by Women Founders in European Deep Tech (WIDT) shows that "having a woman in the founding team leads to lower funding and valuation, a significant drag for a startup" but this "disadvantage stems from private sources of funding".[103] This highlights how implicit bias continues to shape investment decisions.[104]

While entrepreneurship is often assumed to be driven by financial necessity, most women in Europe enter it not out of desperation, but by choice, motivated by the pursuit of flexibility, independence, and personal fulfilment.[105] Only a small share of women cite lack of other employment options as their reason for starting a business.[106] However, this masks a deeper inequality: the women who would benefit most from entrepreneurial autonomy, those in precarious economic positions, are also those least able to access it, due to limited capital, lack of networks, and inadequate institutional support. Internalized gender norms further compound the problem, contributing to a persistent confidence gap. International data show that nearly half of women in the EU and OECD report that fear of failure discourages them

[103] European Institute of Innovation & Technology (EIT), European Investment Fund (EIF), and European Investment Bank (EIB) Advisory Services. Women Founders in European Deep Tech Startups: Main Findings Report. November 2024. https://supernovas.eitcommunity.eu/wp-content/uploads/2024/11/Executive_Summary_Supernovas_Digital_FV.pdf
[104] Ibid.
[105] Eurochambres & UN Women (Europe and Central Asia). Eurochambres Women Entrepreneurs Survey 2025: Unveiling Insights from the Women Entrepreneurs. Brussels: Eurochambres / UN Women, April 15, 2025. https://www.eurochambres.eu/wp-content/uploads/2025/04/Eurochambres-Women-Entrepreneurs-survey-2025-Unveiling-insights-from-the-women-entrepreneurs.pdf
[106] Ibid.

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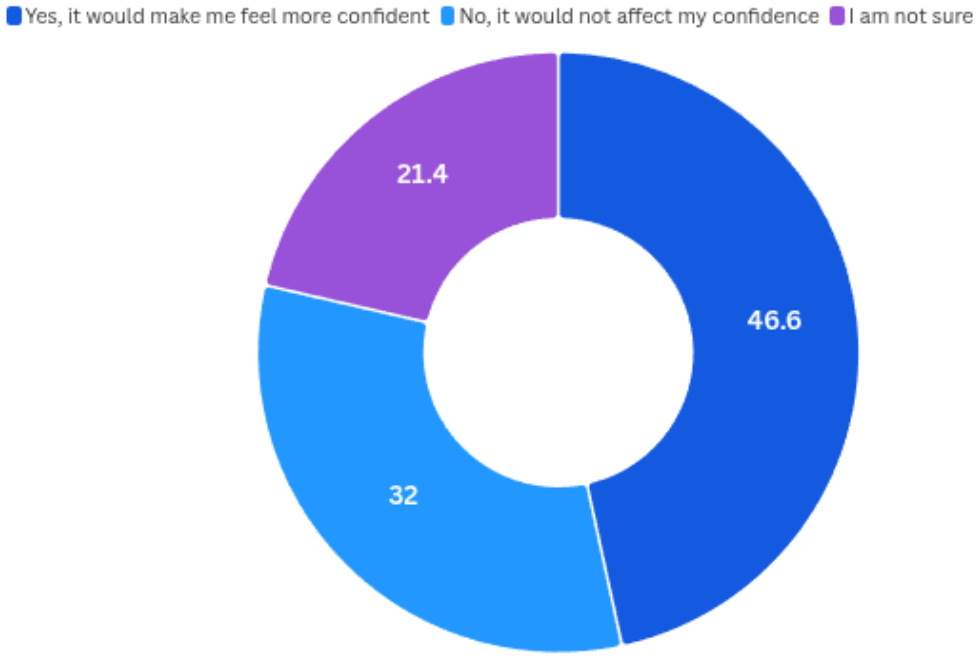
from entrepreneurship, and they are only 75% as likely as men to believe they have the necessary skills.[107] This indicates “actual skills gaps and differences in self-confidence”.[108]

Yet this barrier appears to shift once women are already engaged in business. For example, in a survey focused on women entrepreneurs, only 7.5% cited fear of failure or uncertain return on investment as a major barrier to adopting new technologies.[109] Instead, they pointed to concrete systemic challenges such as administrative burden (43%), acquiring customers (43%), balancing work and care duties (41%), liquidity constraints (36%), and lack of time for skill development (25%).[110] This suggests that fear of failure plays a more significant role in the entry phase, whereas structural obstacles dominate once entrepreneurship is underway. The “double burden”, where women are expected to manage both professional and domestic responsibilities, significantly affects their capacity to fully participate in innovation as 41% of women entrepreneurs cite work-life balance as a persistent challenge.[111] The lack of affordable childcare and prevailing norms around motherhood reduce women’s time, energy, and flexibility for business development. As a possible result, women are more likely to lead micro-enterprises with limited resources and visibility.[112]

Chart 11: Impact on confidence of the introduction of women-focused financial institutions or investors (In percents %).



Source: Eurochambers, 2025

[107] The New European. “6 Numbers to Understand Women’s Barriers to Entrepreneurship.” The New European, n.d. https://www.theneweuropean.eu/archives/6-numbers-to-understand-womens-barriers-to-entrepreneuship.
[108] Ibid.
[109] Eurochambres & UN Women (Europe and Central Asia). Eurochambres Women Entrepreneurs Survey 2025: Unveiling Insights from the Women Entrepreneurs. Brussels: Eurochambres / UN Women, April 15, 2025. https://www.eurochambres.eu/wp-content/uploads/2025/04/Eurochambres-Women-Entrepreneurs-survey-2025-Unveiling-insights-from-the-women-entrepreneurs.pdf
[110] Ibid.
[111] Ibid.
[112] Ibid.

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According to surveys, 46% of women would feel more confident seeking funding if more financial institutions or investors specifically focused on supporting women-led ventures. This highlights the empowering role that gender-sensitive financing ecosystems can play.[113]

Digital proficiency is another barrier. Although nearly all women entrepreneurs recognise the importance of technology for business growth, over half report insufficient digital skills and training. The cost of tech tools and time poverty due to caregiving duties make it difficult for women to upskill, hindering their ability to thrive in fast-moving tech domains.[114]

Finally, the "investment paradox" reveals a stark contradiction. Despite data showing that female-led startups perform 63% better than male-led ones, they receive far less funding.[115] In 2019, 93% of all capital invested in European startups went to all-male founding teams[116], and 92 out of every 100 investor dollars flowed to men.[117] These statistics show not only a market inefficiency, but also a missed opportunity for innovation and inclusive economic growth.

[113] Ibid.

[114] Ibid.

[115] European Parliament, Directorate-General for Parliamentary Research Services. Women in the Digital Sector. Study / Analytical service, ATAG (Legislative Train), EPRS, 2023. https://www.europarl.europa.eu/RegData/etudes/ATAG/2023/739380/EPRS_ATA(2023)739380_EN.pdf

[116] Ibid.

[117] Alexandra Geese, MEP. "#EUDigitalManifesto – Closing the Digital Gender Gap." Event page. March 4, 2025. Accessed September 21, 2025. https://en.alexandrageese.eu/events/eudigitalmanifesto-closing-the-digital-gender-gap/

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BEST PRACTISES BOX: Policies supporting female entrepreneurship, promoting gender equality in digital jobs and tech careers.

The **European Innovation Council's Women Leadership Programme** offer specialised coaching, networking opportunities, and business scaling support to help female entrepreneurs grow their digital ventures.

Women TechEU initiative provides targeted funding and mentoring specifically for female-led deep-tech startups, aiming to boost their growth and success.

EU Gender Equality Strategy 2020-2025 actively promotes gender balance in STEM fields and enhances opportunities for women in tech through policy recommendations and dedicated funding for gender-equality projects.

Digital4Her initiative encourages female leadership in the digital sector by organising mentorship programs and networking events.

Gender Balance on Corporate Boards Directive mandates gender quotas for board representation in large companies to address systemic issues in the workplace.

Equal Pay Initiatives across EU Member States establish policy frameworks for equal pay audits and salary transparency, all contributing to a more equitable digital professional landscape.

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Identified Gaps

The European Union has commendably prioritised gender equality in its digital transformation agenda, outlining ambitious strategies and launching numerous initiatives aimed at creating an inclusive digital society. From the comprehensive EU Gender Equality Strategy 2020-2025 to the specific goals of the Digital Decade policy program 2030, these frameworks demonstrate a strong political commitment to bridging the digital gender divide. However, despite these efforts and the many programs designed to bridge the digital gender gap a closer examination reveals that significant, often deep-rooted inequalities across all five levels of digital inclusion persist. While policies exist, their effectiveness in truly dismantling structural barriers and addressing the specific challenges faced by diverse digital minorities remains a pressing concern. In this analysis we specifically focus on women and their position in the digital gender gap from the intersectional perspective, because as various research suggests, the digital world can reinforce already existing inequalities.

As AI becomes increasingly embedded in digital systems, it not only reflects but also reinforces existing power structures. While often presented as neutral and objective, AI systems are shaped by the data they are trained on, the people who design them, and the institutional priorities they serve. Without active intervention, this leads to biased outcomes that perpetuate inequalities across gender, race, class, disability, and other axes of identity. To build inclusive digital futures, AI must be critically examined across all layers of the digital gender gap. The current normative framework, such as the EU's AI Act, focuses largely on technical and product safety risks. This approach assumes a default user who is male, white, and able-bodied, marginalising the lived experiences of many others. To ensure AI serves all people equally, it is essential to incorporate Gender Impact Assessments (GIAs) into risk management and fundamental rights evaluations. GIAs examine how AI systems reinforce or challenge gender and intersecting inequalities, enabling more just and inclusive digital governance. They assess gender-differentiated impacts including intersectional dimensions such as race, class, age, and disability, AI's role in reproducing or transforming discriminatory patterns, rely on gender-disaggregated data and gender-sensitive indicators (e.g. in health, labour, or social protection).[118]

Without such integration, risk assessments risk reproducing systems that protect only the interests of dominant groups. Inclusive AI governance is central to achieving digital justice for all.

Policymaking, regulation, and governance in digital and data domains must actively include women, gender experts, and women-led organisations, including community networks and focus groups. This ensures that digital transformation does not reinforce existing inequalities by overlooking the needs of those underrepresented or invisible in data sets. Inclusive

[118] Karagianni, Anastasia. The EU Artificial Intelligence Act through a Gender Lens. Brussels: Friedrich-Ebert-Stiftung, 2025. https://library.fes.de/pdf-files/bueros/bruessel/21887-20250304.pdf

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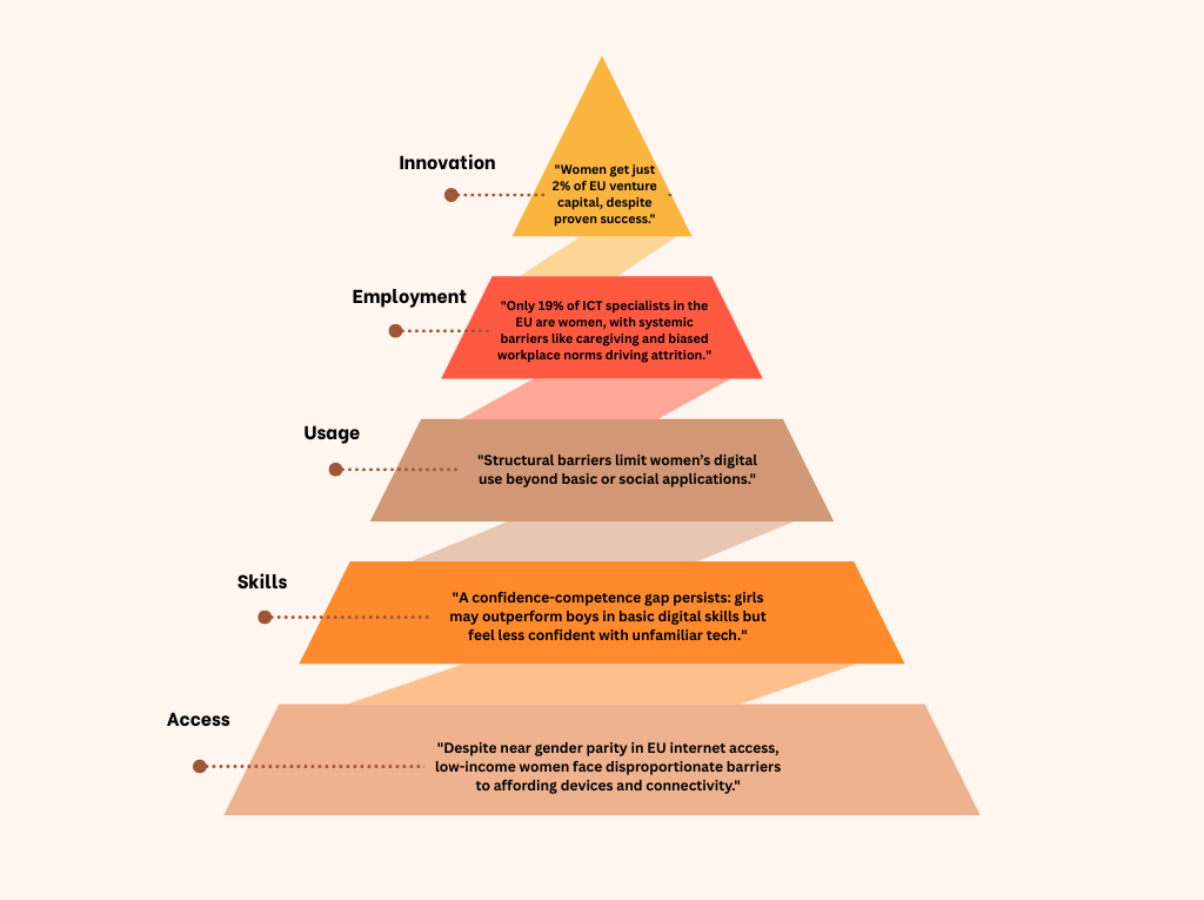
processes are essential to develop fairer and more effective policies that reflect the realities of diverse populations.[119]

To be more concrete, this part highlights the main ongoing gaps that emphasise the need for more targeted, intersectional, and rigorously implemented interventions to ensure that the EU's digital future truly leaves no one behind.

Image 2: The layered analytical framework gaps



Source: Own work

[119] UN Women. Innovation and Technological Change, and Education in the Digital Age for Achieving Gender Equality and the Empowerment of All Women and Girls: Expert Guidance and Substantive Inputs to Preparations for the 67th Session of the Commission on the Status of Women. New York: UN Women, 2023. https://www.unwomen.org/sites/default/files/2023-02/230213%20BLS22613%20UNW%20CSW67.v04%20%282%29.pdf

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Access layer

While internet access in the EU is generally similar for men and women, significant disparities still exist among specific groups.[120] Women, especially those with lower incomes, face greater challenges in affording essential digital devices and internet services.[121] These issues are worsened by ongoing socio-economic inequalities and the gender pay gap. Additionally, substantial infrastructure gaps in rural areas limit access for women, largely due to their geographic distribution and roles in "invisible labour" within households.[122] There is also a noticeable lack of detailed EU-level data on personal mobile phone and smartphone ownership broken down by gender, which hinders a comprehensive understanding of the barriers to device access.[123]

Skills layer

Young women in the EU have shown higher basic digital skills than young men; however, a "confidence-competence gap" exists, where girls tend to feel less confident with unfamiliar digital devices.[124] This gap is especially pronounced in advanced digital skills, as women are less likely to engage in activities such as programming, digital content creation, or using mobile internet for professional purposes.[125] Deep-rooted gender stereotypes, which associate STEM fields with masculine traits, actively discourage girls from pursuing careers in ICT.[126][127] Furthermore, caregiving responsibilities disproportionately result in "time poverty" for women, limiting their ability to acquire and update digital skills and often excluding them from structured learning opportunities.[128] [129]

Usage

Women often use digital tools primarily for less complex tasks and are less likely than men to participate in economically empowering activities such as internet banking or selling goods

[120] Eurostat. "EU Employment and Digital Economy Statistics." Eurostat News, August 1, 2023. https://ec.europa.eu/eurostat/web/products-eurostat-news/w/edn-20230801-1.
[121] Streger, Gustavo. "What's the Gender Digital Divide?" Internet Society Foundation, October 30, 2024. https://www.isocfoundation.org/2024/10/whats-the-gender-digital-divide/.
[122] Broadband Commission. "Advocacy Target 7: Equality." Broadband Commission, 2025. https://www.broadbandcommission.org/advocacy-targets/7-equality/.
[123] GSMA. "Digital Inclusion: Reducing the Usage Gap." GSMA, June 13, 2025. https://www.gsma.com/solutions-and-impact/connectivity-for-good/external-affairs/uncategorised/digital-inclusion-reducing-the-usage-gap/.
[124] Eurostat. "Digital Economy and Society Statistics – Households and Individuals." Eurostat, 2024. https://ec.europa.eu/eurostat/statistics-explained/SEPDF/cache/39761.pdf.
[125] EU Neighbours East. "Young European Ambassadors." EU Neighbours East. https://euneighbourseast.eu/young-european-ambassadors.
[126] Gradiant. "Tech Talks: Women's Leadership in Technology." Gradiant, February 25, 2025. https://gradiant.org/en/news/tech-talks-womens-leadership-in-technology/.
[127] Kovacic, Matija, and Cristina Elisa Orso. "The Gender Gap in STEM: Norms or Cognition or Both?" LSE Inequalities Blog, December 4, 2024. https://blogs.lse.ac.uk/inequalities/2024/12/04/the-gender-gap-in-stem/.
[128] European Parliament. "The Underlying Causes of the Digital Gender Gap and Possible Solutions for Enhanced Digital Inclusion of Women and Girls." European Parliament, 2018. https://www.europarl.europa.eu/RegData/etudes/IPOL_STU(2018)604940_EN.pdf.
[129] National Center for Biotechnology Information. "Digital Inclusion." NCBI Bookshelf. https://www.ncbi.nlm.nih.gov/books/NBK604123/.

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online.[130] This "usage divide" is rooted in structural inequalities, including patriarchal control over internet access and a lack of relevant, women-centred content and communities. Many women with limited digital skills tend to confine their mobile usage to specific platforms, like social media, and find it challenging to adapt their skills to new applications.[131] Additionally, women, especially older ones, those in caregiving roles or living in rural areas, are often overlooked in the design of digital policies.[132][133] As a result, their needs go unaddressed in terms of digital opportunities and online safety measures.

Employment

Women are significantly underrepresented in ICT specialist roles, making up only 19% of these positions. In STEM professions, their representation is also low, with just 22% in manufacturing.[134] [135] This disparity extends to tech leadership roles as well.[136] The "leaky pipeline" effect is apparent, as only a small percentage of female graduates in ICT-related fields actually enter the sector, and fewer women with ICT degrees are working in digital jobs.[137] In the ICT sector, women tend to occupy lower-status positions.[138] The demanding "ideal worker" norm in STEM fields disproportionately affects women who have caregiving responsibilities, often resulting in career breaks and burnout.[139] Additionally, a persistent gender pay gap (20% in scientific R&D) underscores the issue of pay inequality.[140] [141]

Innovation

Women are significantly underrepresented in R&D roles, comprising less than 30% of researchers, and they make up only 9% of patent applicants.[142] [143] Most patent applications

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[130] EIGE on Gender Mainstreaming in Digital Agenda:
European Institute for Gender Equality. "Gender Mainstreaming in the Digital Agenda." EIGE. https://eige.europa.eu/gender-mainstreaming/policy-areas/digital-agenda.

[131] UN Women. "Innovation and Technological Change, and Education in the Digital Age for Achieving Gender Equality and the Empowerment of All Women and Girls: Expert Guidance and Substantive Inputs to Preparations for the 67th Session of the Commission on the Status of Women." UN Women, February 2023. https://www.unwomen.org/sites/default/files/2023-02/230213%20BLS22616.pdf.

[132] ResearchGate. "Barriers to Digital Inclusion." ResearchGate, 2025. https://www.researchgate.net/publication/371178730_Barriers_to_Digital_Inclusion.

[133] Streger, Gustavo. "What's the Gender Digital Divide?" Internet Society Foundation, October 30, 2024. https://www.isocfoundation.org/2024/10/whats-the-gender-digital-divide/.

[134] DisCo. "Digital Empowerment for Inclusive Education." DisCo, 2025. https://project-disco.org/european.

[135] EU Neighbours East. "Young European Ambassadors." EU Neighbours East. https://euneighbourseast.eu/young-european-ambassadors.

[136] Gradiant. "Tech Talks: Women's Leadership in Technology." Gradiant, February 25, 2025. https://gradiant.org/en/news/tech-talks-womens-leadership-in-technology/.

[137] Reddit. "Share of Women Scientists and Engineers." Reddit, 2023. https://www.reddit.com/r/eutech/comments/1inks7t/share_of_women_scientists_and_engineers.

[138] European Institute for Gender Equality. "Gender Mainstreaming in the Digital Agenda." EIGE. https://eige.europa.eu/gender-mainstreaming/policy-areas/digital-agenda.

[139] National Center for Biotechnology Information. "Digital Inclusion." NCBI Bookshelf. https://www.ncbi.nlm.nih.gov/books/NBK604123/.

[140] European Commission. "EU Support to Strengthen Gender Equality in STEM." European Commission, 2025. https://op.europa.eu/en/publication-detail/-/publication/7646222f.

[141] Eurostat. "Gender Statistics." Eurostat, 2025. https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Gender_statistics.

[142] Society of Women Engineers. "Global STEM Workplace 2025." Society of Women Engineers, 2025. https://swe.org/research/2025/global-stem-workplace/.

[143] European Commission. "EU Support to Strengthen Gender Equality in STEM." European Commission, 2025. https://op.europa.eu/en/publication-detail/-/publication/7646222f.

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come from all-male teams.[144] There is also a notable "investment paradox," where all-female startup teams receive just 2% of total venture capital in Europe, despite showing higher success rates and delivering better investment returns.[145] Moreover, AI systems risk perpetuating and amplifying existing societal biases due to biased training data and a lack of diversity within development teams.[146] This can lead to discriminatory outcomes in critical areas such as hiring and healthcare.[147] Although the EU AI Act is a pioneering regulatory effort, it has been criticised for its predominantly gender-neutral language and insufficient intersectional safeguards.[148] This oversight may neglect the unique challenges faced by marginalised women and does not provide clear mechanisms for addressing algorithmic bias.[149] [150]

Despite the clear benefits of mentorship and professional networks, access remains uneven. Most women entrepreneurs do not have access to any form of mentorship or peer network (⅓) or do not find a suitable group or program (26%). This gap contributes to isolation, making customer acquisition a top-cited challenge even harder. Existing programs often lack gender-specific design and outreach, resulting in many women being excluded from both informal and formal business circles.[151]

[144] Ibid.

[145] Taylor & Francis. "Gender and Technology: A Critical Review." Journal of Technology Studies, 2025. https://www.tandfonline.com/doi/full/10.1080/13691066.2025.2493049.

[146] UN Women. "How AI Reinforces Gender Bias." UN Women, February 2025. https://www.unwomen.org/en/news-stories/interview/2025/02/how-ai-reinforces-gender-bias.

[147] UN Women. "Interview on Gender Equality." UN Women, 2025. https://www.unwomen.org/en/news-stories/interview/2025.

[148] Karagianni, Anastasia. The EU Artificial Intelligence Act through a Gender Lens. Brussels: Friedrich-Ebert-Stiftung, 2025. https://library.fes.de/pdf-files/bueros/bruessel/21887-20250304.pdf.

[149] Babl AI. "EU Grapples with Algorithmic Discrimination Under AI Act and GDPR." Babl AI, February 28, 2025. https://babl.ai/eu-grapples-with-algorithmic-discrimination-under-ai-act-and-gdpr/.

[150] Kundu, Anamika. "The AI Act's Gender Gap: When Algorithms Get It Wrong." Internet Policy Review, March 11, 2024. https://policyreview.info/articles/news/ai-acts-gender-gap-when-algorithms-get-it-wrong/1743.

[151] Eurochambres. Women Entrepreneurs Survey 2025: Unveiling Insights from the Women Entrepreneurs. Brussels: Eurochambres, April 15, 2025. https://www.eurochambres.eu/wp-content/uploads/2025/04/Eurochambres-Women-Entrepreneurs-survey-2025-Unveiling-insights-from-the-women-entrepreneurs.pdf.

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Barriers, Opportunities, and Policies: A Cross-Country Analysis

Czech Republic

Context

The Czech Republic has a strong foundation in digital literacy and internet usage, with a large proportion of its adult population regularly online and minimal gender disparity in general internet access. The country has made significant progress toward achieving the EU's 2030 targets for basic digital skill coverage. Over 87% of adults use the internet regularly, with virtually no gender gap (87.4% of women vs 88.1% of men).[152] The country has already achieved over 86% of the EU's 2030 target for basic digital skill coverage.[153] However, despite having comprehensive policy frameworks like the Digital Literacy Strategy for adults and the Education Policy 2030+, which emphasises lifelong learning and digital skills[154], a significant challenge persists: low participation of adults in further education compared to OECD countries. This trend has notably decreased since 2017, with the Czech Republic reporting a higher proportion of people not engaged in education or planning to pursue further education at all: 84% compared to 78% in the EU.[155]

While there are policy provisions for adult digital education, ongoing challenges with engaging adult learners remain. These challenges may stem from factors such as limited awareness of available programs, perceived irrelevance of educational offerings, time constraints for working individuals, financial disincentives, or a general lack of motivation to reskill or upskill.[156] This continued low participation adversely affects the country's ability to adapt its workforce to the evolving digital economy and meet ambitious digital skills targets, exacerbating the existing shortage of skilled ICT labour and increasing the risk of digital exclusion for certain segments of the adult population, particularly those in traditional industries or older demographics.[157]

Moreover, although basic digital engagement is high, a significant digital gender divide persists in advanced digital skills, specialised ICT professions, and leadership roles, with women in the Czech Republic being significantly underrepresented in technical fields and decision-making positions. Only 19% of Czech women possess above-basic digital skills compared to

[152] Eurostat. Internet Use by Individuals (isoc_ci_ifp_iu). Brussels: European Commission, 2023. https://ec.europa.eu/eurostat

[153] European Commission. Women in Digital (WiD) Scoreboard 2024. Luxembourg: Publications Office of the European Union, 2024. https://digital-strategy.ec.europa.eu/en/library/women-digital-wid-scoreboard-2024

[154] Ministry of Education, Youth and Sports of the Czech Republic. Strategy for the Education Policy of the Czech Republic until 2030+. Prague: MEYS, 2020. https://www.msmt.cz/

[155] OECD. Education at a Glance 2021: OECD Indicators. Paris: OECD Publishing, 2021. https://www.oecd.org/education/education-at-a-glance-2021-0b8b1e4e-en.htm

[156] OECD. Getting Skills Right: Future-Ready Adult Learning Systems. Paris: OECD Publishing, 2019. https://www.oecd.org/education/getting-skills-right-3c8f6e48-en.htm

[157] Government of the Czech Republic. The Path to Europe's Digital Decade: Strategic Plan for the Digitalisation of Czechia by 2030. Prague: Office of the Government, 2023. https://www.vlada.cz/ (if applicable).

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31% of men, and just 10% of ICT specialists in employment are women, one of the lowest shares in the EU.[158] Czech women remain underrepresented in ICT education, comprising only 18% of ICT students at the university level.[159] The Women in Digital (WiD) Scoreboard 2024 confirms these gaps, showing Czechia performing well above the EU average in women's internet use but below average in "Specialist Skills & Employment."[160]

Access Layer of the Digital Gender Gap

The Czech Republic exhibits a high level of basic digital literacy and internet usage across its population, with over 87% of adults regularly using the internet and a minimal gender gap in general access, showing approximately 87.4% of women and 88.1% of men online.[161] This indicates near parity in basic internet connectivity for the general population. In 2023, 79.9% of women and 80.1% of men reported daily or almost daily internet use.[162] Notably, women homemakers in the Czech Republic show exceptionally high internet engagement, with 98.1% reporting daily or almost daily internet use in 2023, suggesting widespread basic access and regular use for this specific group.[163]

Table 6: Daily use of internet and smartphones in Czechia in %

Year	Metric	Women	Men
2023	Internet use (daily or almost daily)	79.9	80.1
2023	Internet use (daily or almost daily) - women homemakers	98.1	-
2024	A smartphone use (including phones without an operating system)	84.9	83.6
2024	A smartphone use (including phones without an operating system) - women homemakers	98.0	-
2024	Social networks use	76.1	67.8

Source: Czech Statistical Office, 2023-2024

However, a closer look reveals significant challenges in access and device ownership, particularly for vulnerable groups. In 2024, 84.9% of women and 83.6% of men in Czechia

[158] Eurostat. Individuals' Level of Digital Skills (isoc_sk_dskl_i). Brussels: European Commission, 2023. https://ec.europa.eu/eurostat

[159] Eurostat. Tertiary Education Students by Field of Education and Sex (educ_uoe_enrt03). Brussels: European Commission, 2022. https://ec.europa.eu/eurostat.

[160] European Commission. Women in Digital (WiD) Scoreboard 2024. Luxembourg: Publications Office of the European Union, 2024. https://digital-strategy.ec.europa.eu/en/library/women-digital-wid-scoreboard-2024.

[161] Eurostat. Individuals – Internet Use by Sex and Age (isoc_ci_ifp_iu). Brussels: European Commission, 2023. https://ec.europa.eu/eurostat.

[162] Czech Statistical Office. ICT in Households and Users. https://csu.gov.cz/ict-v-domacnostech-a-uzivatele.

[163] Ibid.

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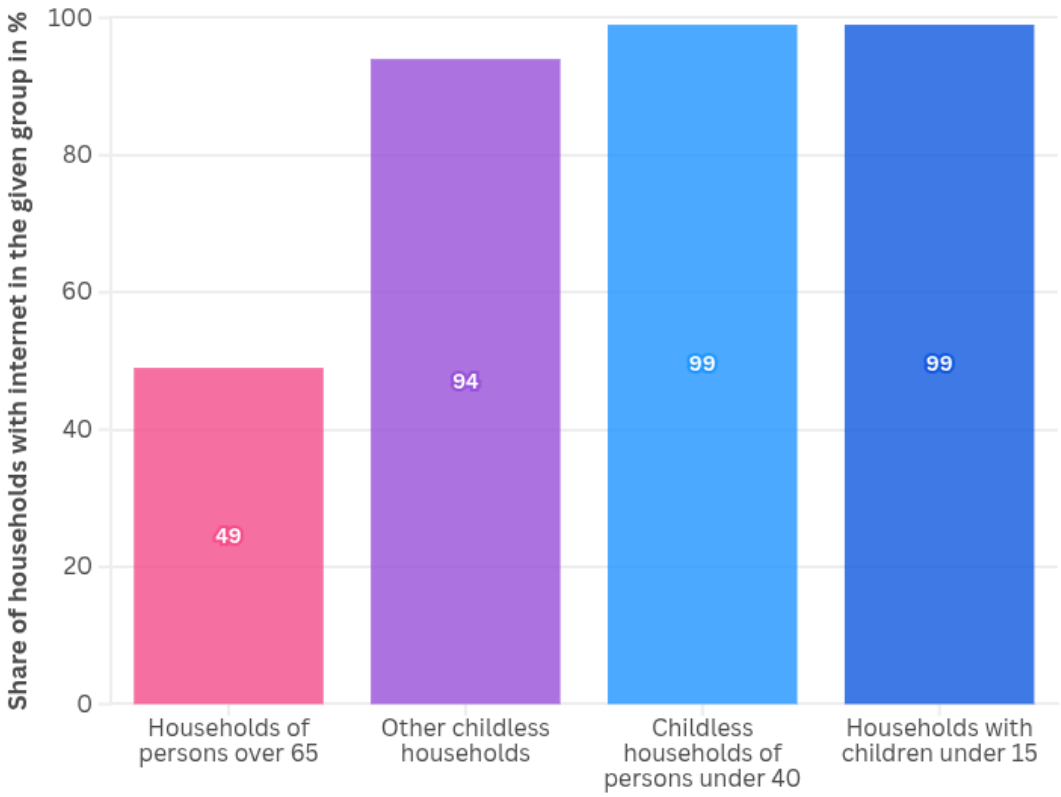
used smartphones, with 98% usage among women homemakers.[164] Despite this high ownership, disparities exist in device quality and consistent access. For instance, those in social housing and people from disadvantaged backgrounds may have a phone for calls but lack internet access, relying on social workers or public libraries for online tasks.[165] Many of them own smartphones but have no home internet, purchasing mobile data only when affordable or using public Wi-Fi.[166] Depleting mobile credit and dependence on public Wi-Fi reveal their precarious connectivity and put them at greater risk, as public networks often lack encryption and security, increasing their exposure to data theft, surveillance, and online harassment.[167]

Older individuals often remain digitally excluded, preferring older phones without a connection to the internet and relying on family for support.[168] Others access the internet only weekly at libraries, with rising costs making home internet unaffordable.[169] These examples illustrate that having a device does not guarantee consistent or meaningful digital access.

Chart 12: Internet access by the type of households (2022)



Source: [Europe in data, Access to Internet, 2022]

[164] Czech Statistical Office. ICT in Households and Users – ICT Subcategories. https://csu.gov.cz/ict-v-domacnostech-a-uzivatele-ict?pocet=10&start=0&podskupiny=402&razeni.
[165] Česko.Digital. Digitální inkluze. https://www.cesko.digital/projekty/digitalni-inkluze/home.
[166] Ibid.
[167] Ibid.
[168] Ibid.
[169] Ibid.

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Households with children under 15 and childless households with individuals under 40 have the highest internet connectivity rates, both at 99%. This reflects the widespread reliance on digital technologies among younger individuals and families.[170] Other childless households also show a high level of internet usage, with 94% connected. In stark contrast, only 49% of households consisting of individuals over 65 have internet access, highlighting a significant digital divide.[171] Internet adoption has grown overall in recent years; however, older age groups still lag behind, often due to a lack of digital skills or motivation to engage with online services.[172] While overall internet affordability in the EU is high, Czechia stands out in the EU for its gender gap in internet affordability. In 2024, 1.2% of women reported being unable to afford an internet connection, compared to 0.7% of men, highlighting economic barriers affecting women disproportionately.[173]

The Czech Republic's "National Plan for the Development of Very High-Capacity Networks" (VHCN), approved in March 2021, aims to enhance electronic communications infrastructure, providing high-speed internet (minimum 100 Mbps) in both rural and urban areas, along with supporting 5G networks.[174] However, the VHCN plan reveals a CZK 15.3 billion (approximately EUR 0.58 billion) investment gap for backhaul and access networks. This gap depends on various EU funding programs, making the achievement of universal high-speed connectivity targets vulnerable to changes in financing dynamics, which could exacerbate the digital divide between urban and rural areas.

[170] Czech Statistical Office. ICT in Households and ICT Users. https://csu.gov.cz/ict-v-domacnostech-a-uzivatele-ict?pocet=10&start=0&podskupiny=402&razeni=-datumVydani.
[171] Ibid.
[172] Evropa v datech. Pokrytí internetem. https://www.evropavdatech.cz/clanek/104-pokryti-internetem/#:~:text=Mezi%20lety.
[173] Czech Statistical Office. ICT in Households and ICT Users. https://csu.gov.cz/ict-v-domacnostech-a-uzivatele-ict?pocet=10&start=0&podskupiny=402&razeni=-datumVydani.
[174] Government of the Czech Republic. The Path to Europe's Digital Decade: Strategic Plan for the Digitalisation of Czechia by 2030. https://digitalnicesko.gov.cz/media/files/The_Path_to_Europes_Digital_Decade_The_Strategic_Plan_for_the_Digitalisation_of_Czechia_by_2030_oOROu6l.pdf.

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BEST PRACTISES BOX: **Czech digital policies and strategies** to drive its digital transformation and address the digital gender gap.

The Strategic Plan for the Digitalization of Czechia by 2030 (Digitální Česko): the Czech national roadmap , mapping how Czechia will meet EU targets in digital skills, infrastructure, business transformation, and e-government by 2030. It sets concrete national targets, like boosting basic digital skills to 80 %, expanding 5G and very high-capacity networks, increasing SME uptake of cloud/AI, and improving online public services.

The National Artificial Intelligence Strategy (NAIS) aims to position the Czech Republic as a European leader in safe and responsible AI deployment, fostering economic growth and improving public services.

The National Plan for the Development of Very High-Capacity Networks (VHCN) approved in 2021, specifically targets the expansion of high-speed internet infrastructure across both rural and urban areas, though it identifies a significant investment gap largely reliant on EU funding.

The Strategy for the Education Policy of the Czech Republic up to 2030+ seeks to modernize the education system, equipping individuals with 21st-century competencies and promoting digital literacy among adults, despite ongoing challenges with low participation in further education.

The Gender Equality Strategy for 2021–2030: a broader governmental framework to foster a society where all individuals can thrive, explicitly intersecting with digital inclusion, skills development, and addressing cyber violence.

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Usage Layer of the Digital Gender Gap

The Usage Layer of the Digital Gender Gap reveals qualitative disparities. While women excel in digital communication and online shopping, men lead in active digital entertainment like gaming and formal online services. Key barriers include time poverty, shared household devices, and negative online experiences, which disproportionately affect women and vulnerable groups. Intergenerational learning is a vital informal inclusion mechanism. True digital inclusion requires addressing these usage gaps, fostering safer online environments, and developing practical digital skills tailored to diverse needs, ensuring technology empowers rather than merely facilitates passive consumption.

In 2024, 87.7% of Czechs aged 16+ used the internet in the last three months, with 80.0% using it daily.[175] The gender gap in overall internet usage has narrowed significantly, from 77.9% for men vs. 73.5% for women in 2015 to 88.1% for men vs. 87.4% for women in 2024.[176] Mobile internet usage has surged to 80.9% in 2024, with women (81.6%) slightly surpassing men (80.2%), a reversal from 2015.[177] This highlights mobile devices as a primary gateway for women, especially those with caregiving responsibilities. Younger age groups (16-44) show near-universal adoption, while older demographics (65-74 and 75+) have seen substantial growth in both internet and mobile internet usage.[178] Women homemakers show particularly high digital engagement, with 99.1% using the internet and 96.4% using mobile internet daily.[179] 77.0% of Czechs aged 16+ used internet/mobile banking, and 67.7% shopped online. Women slightly lead in both (77.3% vs. 76.8% for men in banking; 68.4% vs. 67.0% for men in shopping), suggesting high perceived usefulness for household management.[180] However, men are significantly more likely to arrange formal paid services online, such as insurance (22.1% vs. 13.8% for women), energy contracts (9.4% vs. 5.2%), and mobile/internet tariffs (8.8% vs. 5.8%).[181] Adoption of Smart Home Appliances and IoT devices remains low (15.5% of households), especially in older (3.2% for 65+) and lower-income households, indicating barriers beyond basic access.[182]

[175] Czech Statistical Office. Využívání informačních a komunikačních technologií. https://csu.gov.cz/produkty/vyuzivani-informacnich-a-komunikacnich-technologii.
[176] Czech Statistical Office. Využívání informačních a komunikačních technologií.. https://csu.gov.cz/produkty/vyuzivani-informacnich-a-komunikacnich-technologii.
[177] Czech Statistical Office. ICT in Households and ICT Users. https://csu.gov.cz/ict-v-domacnostech-a-uzivatele-ict?pocet=10&start=0&podskupiny=402&razeni=-datumVydani.
[178] Czech Statistical Office. Statistická ročenka Jihomoravského kraje. https://csu.gov.cz/docs/107508/7b31b02c-b150-93fb-1094-39cfccf234b7/33010324.pdf?version=1.9.
[179] Ibid.
[180] Czech Statistical Office. Information Society in Figures 2024. https://csu.gov.cz/docs/107508/4461642f-dcde-2459-101e-38ef225c9278/06100524.pdf?version=1.0.
[181] Czech Statistical Office. Annual Report 2024. https://csu.gov.cz/docs/107516/35ef138e-746b-fdf7-15aa-e26e8a9f787e/vz_2024_en.pdf?version=1.0.
[182] Ibid.

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Table 7: Purpose and Patterns of Digital Engagement in CZ (2024)

Activity Category	Women %	Men %
Communication		
Using Email	83.3	82.9
Sending Messages (e.g., WhatsApp)	80.4	76.3
Internet Calling (e.g., Skype)	67.5	61.2
Information Seeking		
Seeking Info on Goods/Services	81.3	78.1
Seeking Health Information	52.8	74.2
Seeking Travel Information	58.2	64.3
Entertainment		
Watching Videos (e.g., YouTube)	68.2	67.6
Listening to Music	58.4	59.2
Playing Games	25.7	40.4
Using Social Networks	66.5	59.7

Source: Czech Statistical Office, 2024

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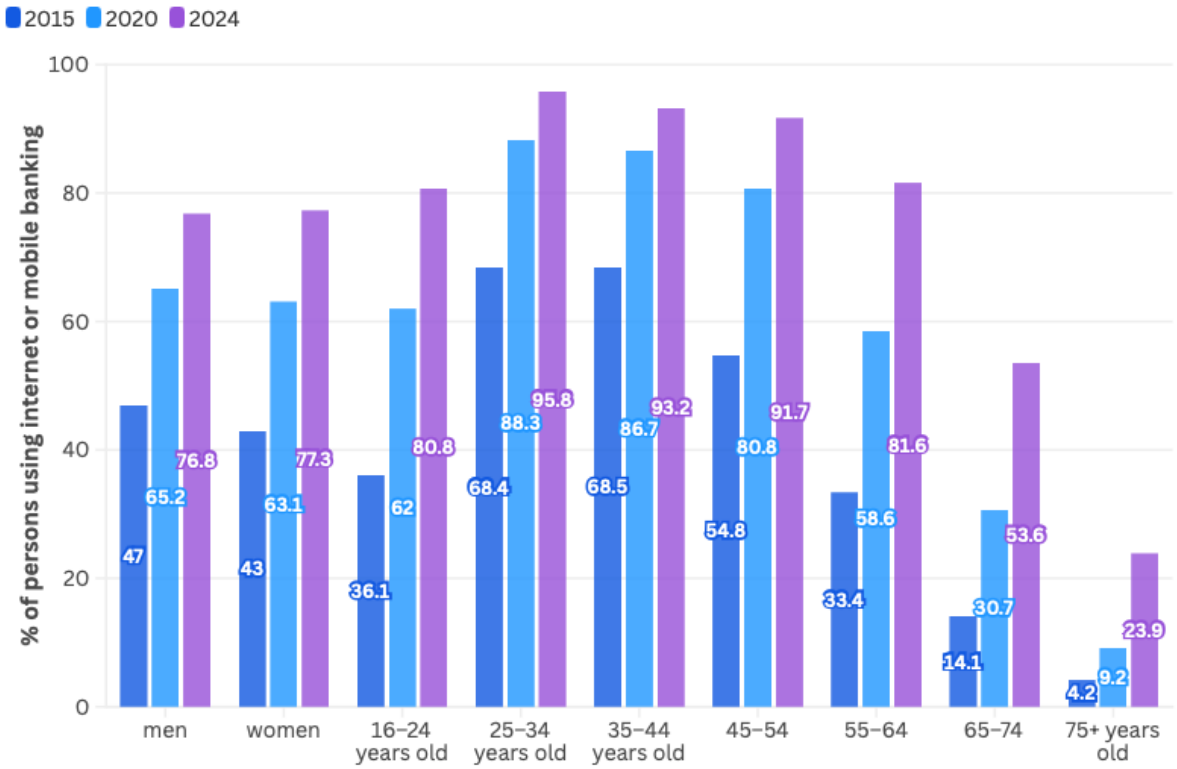
Chart 13: (%) of People in the Czech Republic using internet or mobile banking, 2015-2024



Source: Czech Statistical Office, 2024

Usage patterns among socioeconomically disadvantaged groups reveal significant privacy and security concerns. Research by DigiČesko shows that individuals from low-income households often rely on a single, older device shared with multiple family members.[183] This limits safe and private engagement online, restricts data storage, and creates unstable digital spaces.

Caregiving responsibilities, especially for women, lead to time poverty. A respondent from DigiČesko research – a mother housekeeper – mentioned that she "doesn't have time at all" for the family computer, limiting her digital exploration.[184] Digital safety concerns, including cyber violence and privacy breaches, influence women's digital usage. AI systems can mirror societal biases, potentially creating unwelcoming online environments. Negative online experiences can also deter deeper engagement. Especially older users are prone to online scams and hackers, limiting their active content creation.[185] These factors reinforce existing gender roles, creating a "digital housekeeping gap" where digital tools become burdens rather than enablers.

[183] Evropa v datech. Pokrytí internetem. https://www.evropavdatech.cz/clanek/104-pokryti-internetem/.
[184] Ibid.
[185] Ibid.

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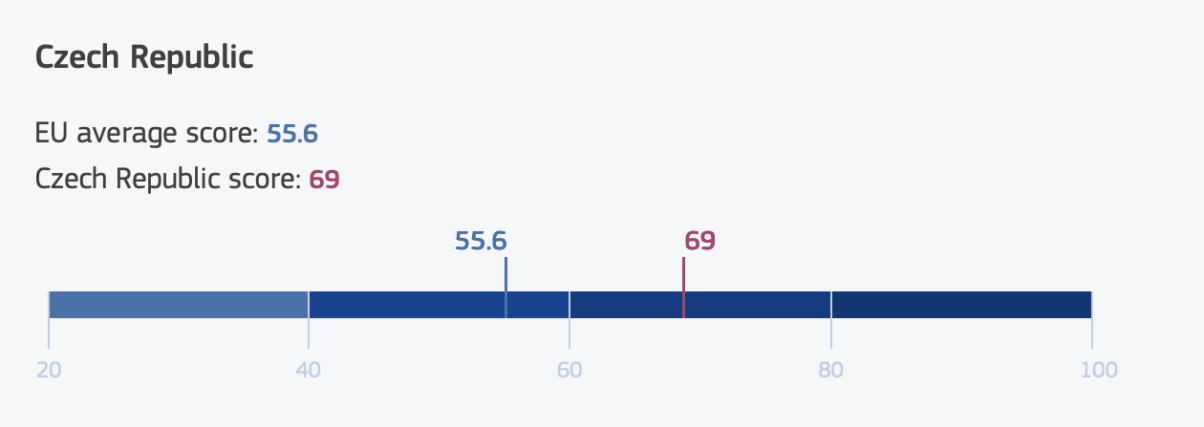
Skills Layer of the Digital Gender Gap

The Czech Republic has established a strong foundation in basic digital literacy, with approximately two-thirds of its population possessing at least basic digital skills, a figure well above the EU average (69.1% in Czechia vs. 55.6% EU).[186] The country has already achieved over 86% of the EU's 2030 target for basic digital skill coverage, indicating widespread foundational digital engagement.[187] Beyond foundational competence, the Czech Republic also exhibits a higher percentage of its population with an advanced level of digital skills, reaching 35% compared to the EU27 average of 27%.[188] This indicates not just widespread basic digital engagement but also a notable proportion of the population capable of performing more complex digital tasks.

Figure 1. At least basic digital skills (% of individuals aged 16-74)



Source: [EU Digital skills & jobs platform]

The Czech Republic ranks 5th out of the 27 EU Member States in the DESI dashboard for the Digital Decade for the 'At least basic digital skills' indicator, with 69.1% of its population possessing at least basic digital skills.[189]

[186] Digital Skills and Jobs Platform. European Interactive Map: Czech Republic. https://digital-skills-jobs.europa.eu/en/european-interactive-map/czech-republic.
[187] Ibid.
[188] Digital Skills and Jobs Platform. Czech Republic Snapshot: Digital Skills. https://digital-skills-jobs.europa.eu/en/latest/briefs/czech-republic-snapshot-digital-skills.
[189] European Commission. DESI Dashboard for the Digital Decade (2023 onwards). https://digital-decade-desi.digital-strategy.ec.europa.eu/datasets/desi/charts

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Table 8: Digital Skills of Czech individuals, 2023

Metric	Women %	Men %
Individuals with at least basic overall digital skills (age 16–74) – share of population with basic or above-basic overall digital skills	68,7%	69,5%
Programming skills (able to write code)	3,2%	8,6%
Editing photos, videos or audio	27,5%	26,4%
Installing software and change of software settings	25%	35,5%
Verifying unreliable information from the internet	20,5%	23,1%
Verifying unreliable information from the internet - women housemakers	26,6%	N/A

Source: Czech Statistical Office

Qualitative insights further illuminate the nuances of these skill gaps, especially among vulnerable groups. Individuals living in social housing or shelters, and some elderly, may struggle with basic digital literacy, such as managing passwords, and often rely on social workers or public libraries for online tasks, indicating a lack of independent digital problem-solving skills.[190] Similarly, while women homemakers show exceptionally high daily internet use (98.1% in 2023), their digital engagement often leans towards passive consumption (e.g., social media, videos) rather than empowering activities like online banking or official communication[191]. Many express a desire to learn more practical skills but face time constraints due to caregiving responsibilities.[192] Young Romani girls, often sharing older devices and accounts with family, experience unstable personal digital spaces, limiting their ability to develop advanced skills or engage in private online activities beyond basic consumption.[193] Even among children with regular internet access, while they may learn practical skills like document and image editing in school, more complex tasks like programming are perceived as difficult.[194] Seniors, particularly irregular users, often lack awareness of the full potential of digital services for personal development or practical tasks, preferring traditional in-person interactions.[195]

[190] Česko.Digital. Digitální inkluze. 2025. https://www.cesko.digital/projekty/digitalni-inkluze/home

[191] Czech Statistical Office. Využívání informačních a komunikačních technologií. https://csu.gov.cz/produkty/vyuzivani-informacnich-a-komunikacnich-technologii

[192] Česko.Digital. Digitální inkluze. 2025. https://www.cesko.digital/projekty/digitalni-inkluze/home

[193] Ibid.

[194] IRTIS (Interdisciplinární výzkum internetu a společnosti, Masaryk University). "Studie: Digitální dovednosti dětí pozitivně ovlivňují jejich výsledky při učení." Aktuality, November 12, 2020. https://irtis.muni.cz/cs/aktuality/novinky-a-clanky/yskills-digitalni-dovednosti-deti-pozitivne-ovlivnuji

[195] Czech Statistical Office. Senioři v datech: Aktivity na internetu. https://csu.gov.cz/seniori-v-datech/aktivity-na-internetu.

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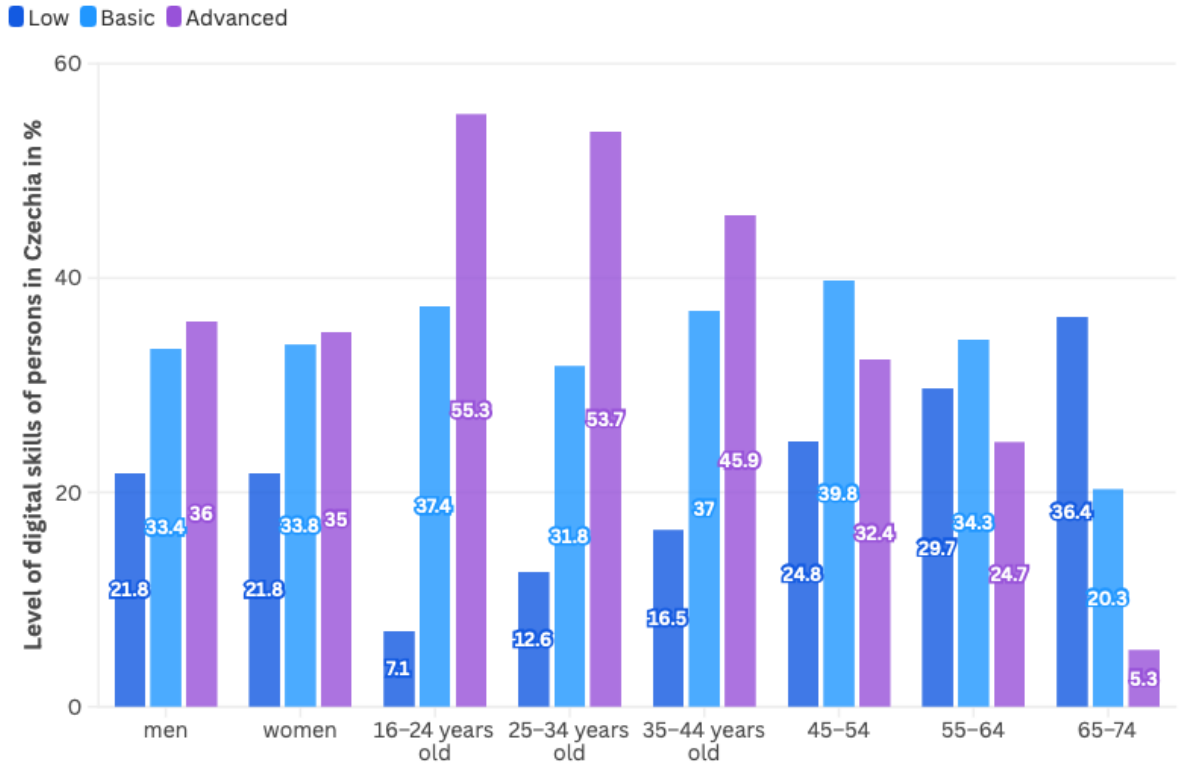
Chart 14. Level of digital skills of persons in Czechia, 2023



Source: [Czech Statistical Office]

At an aggregated level, the overall digital skill levels for men and women aged 16-74 in the Czech Republic appear remarkably similar, suggesting a general parity in broad digital competence.[196] For individuals with low digital skills, both men and women recorded an identical 21.8%.[197] In the category of basic skills, women slightly exceeded men (33.8% compared to 33.4%), while for advanced skills, men held a marginal lead (36.0% compared to 35.0%).[198] This apparent parity in aggregate digital skills, however, may obscure underlying functional disparities. Digital skills, particularly advanced ones, show a strong inverse correlation with age across the entire population, including women. For instance, 55.3% of individuals aged 16-24 possess advanced digital skills.[199] This figure dramatically declines to just 5.3% for those aged 65-74.[200] This trend holds true for basic and low skill levels as well, with older age groups showing a higher prevalence of low digital skills.

[196] Czech Statistical Office. ICT in Households and ICT Users. https://csu.gov.cz/ict-v-domacnostech-a-uzivatele-ict?pocet=10&start=0&podskupiny.
[197] Ibid.
[198] Ibid.
[199] Ibid.
[200] Ibid.

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Employment Level of the Digital Gender Gap

Women's participation in ICT education and subsequent careers in the Czech Republic remains significantly below that of men, indicative of a substantial and persistent gender gap.[201] This disparity is particularly pronounced in the educational pipeline, where in 2023, only 2.6% of female university students were enrolled in ICT fields, a stark contrast to 14.6% of male students.[202] This highlights a critical "leaky pipeline" phenomenon, where early educational choices severely limit the pool of female talent entering the ICT sector. This educational imbalance directly translates into a significant underrepresentation in the workforce. As of 2023, women constitute a mere 12.4% of all ICT specialists in the workforce, while men comprise 87.6%.[203] This figure is among the lowest in the European Union, falling significantly below the EU average of approximately 19% female representation in ICT specialist roles.[204]

Table 9: Women's Representation in Czech ICT Sector, (2019-2023)

Year	Metric	Women %	Men %	EU average (ICT Specialists) (%)
2023	Female ICT Students at University	2.6	14.6	N/A
2023	Female ICT Specialists in Workforce	12.4	87.6	19.4
2022	Female Share in R&D Employment	28.7	71.3	N/A
2019	Female Share in Tech Roles (employment)	10	90	N/A

Source: Czech Statistical Office

The severity of this gap is further underscored by the Czech Republic's ranking in the WiD Scoreboard. In 2022, the country recorded the second-lowest score across the entire EU in the "Specialist Skills and Employment" dimension, with a value of just 31.5, indicating a considerable challenge in ensuring women's participation and skill development in specialized digital fields.[205] The continued low participation of women in ICT adversely affects the Czech Republic's capacity to adapt its workforce to the evolving digital economy and meet its ambitious digital skills targets, while also contributing to the existing shortage of skilled ICT labour. This situation demonstrates that efforts to increase female representation in the digital labour market must extend beyond adult upskilling programs. While such programs are necessary for immediate impact, sustainable systemic change requires significant, long-term

[201] Tesena. "Zastoupení žen v IT: Česko je na evropském dně." https://www.tesena.com/zastoupeni-zen-v-it-cesko-je-na-evropskem-dne-zeny.
[202] Czech Statistical Office. ICT specialistky berou o 16 tisíc méně než muži. https://csu.gov.cz/produkty/ict-specialistky-berou-o-16-tisic-mene-nez-muzi.
[203] Ibid.
[204] European Institute for Gender Equality. Work-Life Balance in the ICT Sector: Toolkit. https://eige.europa.eu/publications-resources/toolkits-guides/work-life-balance/women.
[205] European Commission. DESI: Digital Economy and Society Index. https://digital-strategy.ec.europa.eu/en/policies/desi.

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investment in early education (e.g., promoting STEM for girls, challenging gender stereotypes in schools) to expand the pool of female talent entering the ICT pipeline from the ground up.

Beyond issues of representation, a notable wage disparity persists within the Czech ICT sector, indicating that even when women enter these professions, they often face economic disadvantages. In 2024, the average gross monthly wage for all ICT specialists and technicians was 64,999 CZK for women, compared to 73,480 CZK for men.[206]

Table 10: Average Gross Monthly Wages for ICT Professionals by Gender (Czech Republic, 2024)

Category of ICT Professional	Average Gross Monthly Wage for Women (CZK)	Average Gross Monthly Wage for Men (CZK)	Wage Gap (%)
Overall ICT specialists and technicians	64,999	73,480	11.54%
ICT specialists (CZ-ISCO 25)	71,957	87,829	18.1%
ICT technicians (CZ-ISCO 35)	50,456	53,918	**6.42%**

Source: Czech Statistical Office

A survey exploring experiences and pathways into IT in the Czech Republic[207] provides valuable qualitative insights into the challenges and facilitating factors. A significant portion of respondents (58%) entered IT through a career change, indicating that direct IT education from the outset is not the sole pathway. This suggests an openness in the sector for those seeking a new career direction later in life.

For juniors entering the IT field, the most substantial obstacle identified by 82% of respondents is the lack of practical experience.[208] Other significant challenges include demanding interviews (31%), insufficient support from colleagues or mentors (24%), and the rapid evolution of technologies requiring continuous learning (13%).[209] When the lack of practical experience is combined with the finding that women particularly benefit from access to real projects and mentoring to gain confidence, a gendered dimension of this barrier becomes apparent. If women, due to societal factors, educational pathways, or lack of early opportunities, have fewer avenues for gaining hands-on practical experience or accessing informal networks for mentorship, this "experience barrier" could disproportionately affect their entry and progression in IT, further entrenching existing disparities.

[206] Czech Statistical Office. ICT odborníci a jejich mzdy. https://csu.gov.cz/ict-odbornici-a-jejich-mzdy?pocet=10&start=0.
[207] RMOL.cz. Kompletní výsledky průzkumu. https://www.rmol.cz/sites/default/files/prilohy/kompletni_vysledky_pruzkumu.pdf.
[208] Ibid.
[209] Ibid.

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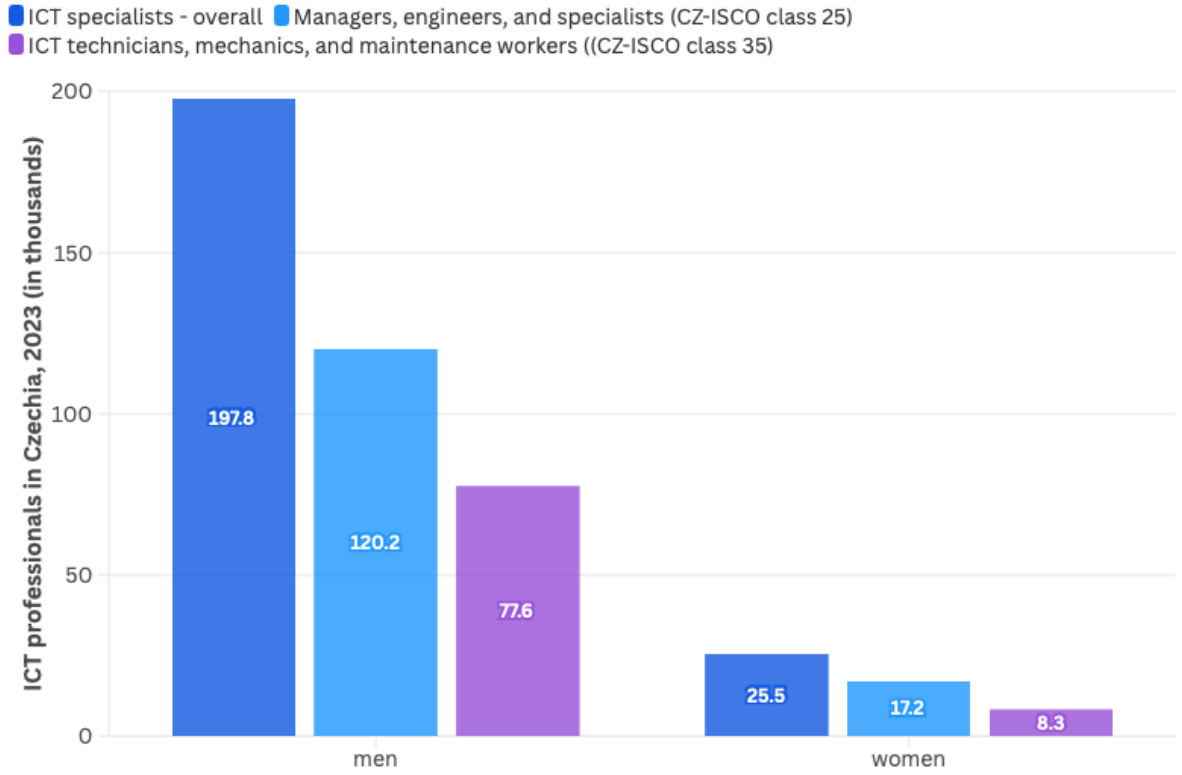
Key factors cited for successfully securing a first IT position include gaining practical experience through projects, internships, or independent programming; developing strong soft skills such as communication and teamwork; and engaging in self-study and specialized courses (e.g., online platforms, academies, or bootcamps).[210] Crucially, for women specifically, the survey highlights the vital role of a supportive community, access to real projects, and comprehensive technical and career mentoring. These elements are instrumental in helping women overcome initial fears and build the confidence necessary to progress in the IT field.

Chart 15: ICT professionals in the Czech Republic in 2023 (in thousands)



Source: Czech Statistical Office, 2023

Innovation Level of the Digital Gender Gap

The Czech Republic's innovation and R&D sectors, while demonstrating rapid acceleration and significant activity within the Central and Eastern European region, exhibit persistent and profound gender disparities. The nation consistently ranks among the lowest in the European Union for female representation in both startup founding and research roles, particularly in

[210] Ibid.

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leadership positions.[211] In R&D, women constitute a mere 28.7% of the total workforce, the lowest in the EU, with severe underrepresentation in the business enterprise sector and senior roles.[212]
The nation consistently registers low scores and rankings in critical dimensions pertinent to innovation. These include research participation (25th), research sectors (27th), and decision-making roles (20th).[213] Such low standings across multiple indicators suggest that the gender gap is not an isolated issue but rather a deeply embedded systemic challenge within the Czech innovation and R&D framework.

The simultaneous existence of a "rapidly accelerating" and "booming" innovation ecosystem[214] alongside a stagnant or slow-improving gender equality index[215] presents a notable paradox. This situation suggests that the economic and technological advancements within the Czech Republic are not inherently translating into a more equitable distribution of opportunities or outcomes for women in innovation and R&D. The growth appears to be occurring within existing, unequal structures, which may limit the full realisation of the country's innovation potential. This observation implies that market forces alone are insufficient to close the gender gap.

The presence of female startup founders in the Czech Republic is remarkably low. Only about 5% of Czech startups are founded by women, and these ventures receive a disproportionately low share of funding, with as little as 1% of Central and Eastern Europe (CEE) investments going to exclusively female-led companies..[216] This figure is notably below the average for the broader CEE region, where women establish 13% of startups.[217] Within the wider IT workforce in Czechia, women constitute only about 10% of employees, positioning the country among the lowest in European rankings.[218]

On a European level, only one in ten companies founded in 2022 was exclusively led by women[219] , indicating a pervasive regional challenge, yet Czechia's figures are even more pronounced, highlighting a particular national concern. The funding landscape for female-led

[211] Fraňková, Ruth. “Czechia Has Lowest Representation of Women in Science Among EU Countries, Report Finds.” Radio Prague International. https://english.radio.cz/czechia-has-lowest-representation-women-science-among-eu-countries-report-finds-8836733.
[212] PitchBook. Europe Female Founder Deals Map. “Lithuania, Ireland stand out for Europe’s female founders.” https://pitchbook.com/news/articles/europe-female-founder-deals-map.
[213] European Commission. She Figures 2024: Czechia Fiche. https://ec.europa.eu/assets/rtd/shefigures/2024/files/shefigures2024fiche-cz.pdf.
[214] Therecursive. “Who Are the Czech Women in Tech: A Map With Top 10 Female Founders.” The Recursive, 20 March 2023. https://therecursive.com/czech-women-in-tech-female-founders/.
[215] GLOBSEC. CEEHER Report3: Zooming in on Austria, the Czech Republic and Slovakia. https://www.globsec.org/sites/default/files/2022-12/CEEHER%20report3-final.pdf.
[216] Therecursive. “Who Are the Czech Women in Tech: A Map With Top 10 Female Founders.” The Recursive, 20 March 2023. https://therecursive.com/czech-women-in-tech-female-founders/.
[217] GLOBSEC. CEEHER Report3: Zooming in on Austria, the Czech Republic and Slovakia. https://www.globsec.org/sites/default/files/2022-12/CEEHER%20report3-final.pdf.
[218] Diverzita.cz. Aktualita. https://diverzita.cz/en/aktualita/.
[219] HICEE (Hungarian International Conference on Economics and Education). Female-Founded Companies. https://hicee.eu/article/female-founded-companies.

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startups in Czechia is particularly challenging. Since 2017, the country has recorded the lowest proportions of Venture Capital (VC) deals involving female founders within the CEE region.[220] Across CEE, a stark imbalance in investment distribution is evident: a staggering 94% of investments are directed towards male-led companies, with merely 1% of funding allocated to exclusively female-founded companies and 5% to those with mixed-gender management teams.[221] Other studies corroborate this trend, showing that women-led startups in the CEE region have garnered no more than 2% of funding in recent years.[222]

Table 11: Key Statistics on Women in Czech Startups

Metric	Value
The proportion of women among the founders of Czech funded startups (2023)	8%
VC Deals Involving Female Founders	12,9%
Time to Secure First Term Sheet for Women-Led Tech Businesses	6 months longer than male-fronted businesses
Funding Received by Women-Led Tech Businesses (2014-2024)	1.8 times less funding than male-led businesses

Source: Czech Crunch, PitchBook

Women in Czech Research and Development (R&D)

Czechia exhibits the lowest representation of women in science among all EU countries.[223] Women constitute only 28.7% of the total Research and Development (R&D) workforce in 2022.[224] This figure has remained largely stagnant at around 24% since 2005[225], demonstrating a persistent lack of progress over nearly two decades, and stands significantly below the EU average of 52%.[226] A review of sectoral representation highlights significant gender disparities in various research environments. In the Higher Education Sector (HES), women made up 36% of researchers in 2021, remaining stable since 2013 and below the EU 27 average of 40.7%.[227] The Government Sector (GOV) had a higher representation of women at 41%, aligning closely with the EU-27 average of 41.6%.[228]

[220] Therecursive. "Who Are the Czech Women in Tech: A Map With Top 10 Female Founders." The Recursive, 20 March 2023. https://therecursive.com/czech-women-in-tech-female-founders/.
[221] HICEE. Addressing the Investment Gap in Central Eastern Europe: Female-Founded Companies. https://hicee.eu/article/female-founded-companies.
[222] GLOBSEC. Women in the Digital Space (and AI): Looking into Central Europe, Cases Austria, Czechia. https://www.globsec.org/what-we-do/publications/women-digital-space-and-ai-looking-central-europe-cases-austria-czechia.
[223] Radio Prague International. Czechia. https://english.radio.cz/czechia.
[224] Ibid.
[225] Fraňková, Ruth. "What's Behind Czechia's Lowest Representation of Women in Science?" Radio Prague International, December 27, 2024. https://english.radio.cz/whats-behind-czechias-lowest-representation-women-science-8838242.
[226] Radio Prague International. Czechia. https://english.radio.cz/czechia.
[227] European Commission. She Figures 2024: Czechia Fiche. https://ec.europa.eu/assets/rtd/shefigures/2024/files/shefigures2024fiche-cz.pdf.
[228] Ibid.

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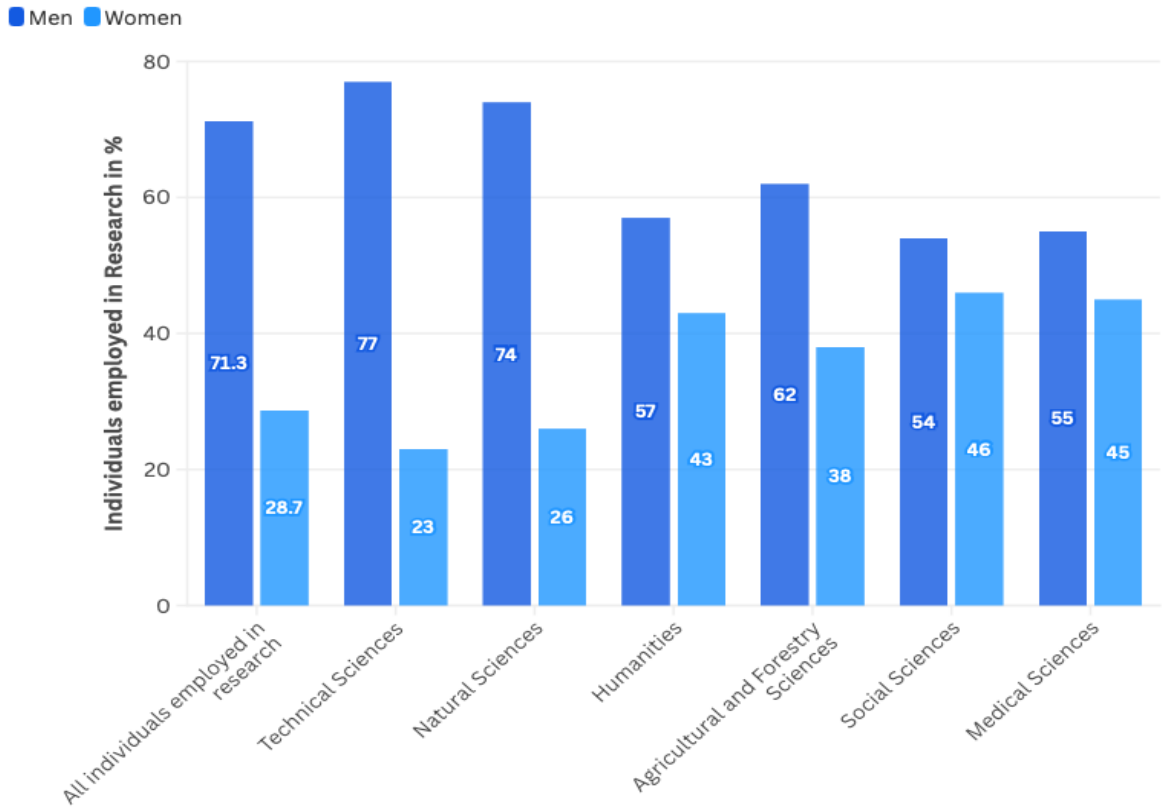
In contrast, the Business Enterprise Sector (BES) shows the most severe gender gap, with women representing only 14% of researchers in 2021, unchanged despite a doubling of the sector's R&D workforce.[229] This figure is well below the EU-27 average of 22.4% and highlights systemic barriers in the private sector. The underrepresentation of women in BES, where innovation is commercialised, reflects structural challenges rooted in industry culture and biases in hiring and advancement.[230] On the other side, there is relatively balanced gender composition at the doctoral level. In 2021, women made up 44% of doctoral graduates in Czechia, indicating near gender balance at this level, yet the country ranks 25th among EU nations in this regard.[231] Despite a decent number of women earning PhDs, their progression and retention within the research workforce remain concerning.[232]

Chart 16: Czech Individuals (%) employed in research by field, 2022



Source: Women in Science

Despite a growing number of people working in research, the proportion of women has stagnated or declined. In 2022, a total of 86,125 people were employed in research and

[229] Ibid.

[230] Fraňková, Ruth. "What's Behind Czechia's Lowest Representation of Women in Science?" Radio Prague International, December 27, 2024. https://english.radio.cz/whats-behind-czechias-lowest-representation-women-science-8838242.

[231] European Commission. She Figures 2024: Czechia Fiche. https://ec.europa.eu/assets/rtd/shefigures/2024/files/shefigures2024fiche-cz.pdf.

[232] Ibid.

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development in the Czech Republic. Men outnumbered women in all research roles, and while the number of women has been growing slightly since 2018, their overall representation remains low. Women made up only 28.7% of all R&D employees.[233]

In a European comparison, the Czech Republic had the lowest share of female researchers in the EU at 24.2%, well below the EU average of 41%.[234] This has been the case since data collection began in 2000. Most researchers in the Czech Republic work in technical (41.4%) and natural sciences (38.1%), fields where women are least represented, and participation has even declined slightly over time.[235] The most gender-balanced field remains medical sciences.

As of 2022, women held only 13.5% of top positions in research and academic institutions, highlighting significant underrepresentation in leadership roles.[236] Their representation in decision-making bodies stood at 22.6% and at 25.7% in advisory bodies, indicating limited influence in strategic decisions.[237] Additionally, women comprised only 17% of board members and 29% of leaders in research institutions, both below the EU-27 averages.[238] Discrepancies exist in data regarding women's leadership in private corporations, but the overall trend shows pervasive underrepresentation.

In the higher education sector, women led just 19% of institutions, further indicating gender disparity. The transition from a balanced pool of doctoral graduates to a low female presence in research roles (27%) and top positions suggests a "glass ceiling" effect, with many qualified women unable to advance, especially in natural sciences where half of all women PhD holders do not pursue research careers.[239] The underrepresentation of women in research extends beyond workforce participation to tangible innovation outputs. Between 2018 and 2022, women accounted for only 30% of authors on research publications in Czechia, which is below the EU-27 average of 34%, placing the country 24th among EU member states for this indicator.[240] A similar pattern emerges in patent activity: from 2018 to 2021, just 7.3% of patent applications in Czechia were submitted by women, compared to an EU-27 average of 9.4%, ranking Czechia 23rd in this regard.[241] These figures indicate that even among women who are active in research, their contributions to formalised innovation, whether through publishing or patenting, are disproportionately low.

[233] NKC – gender a věda. Postavení žen v české vědě: Monitorovací zpráva za rok 2022. https://genderaveda.cz/wp-content/uploads/2024/10/Postaveni-zen-v-ceske-vede-2022-CZ.pdf.
[234] Ibid.
[235] NKC – gender a věda. Ženy ve vědě: Data. https://genderaveda.cz/zeny-ve-vede.
[236] Fraňková, Ruth. "What's Behind Czechia's Lowest Representation of Women in Science?" Radio Prague International, December 27, 2024. https://english.radio.cz/whats-behind-czechias-lowest-representation-women-science-8838242.
[237] Ibid.
[238] European Commission. She Figures 2024: Czechia Fiche. https://ec.europa.eu/assets/rtd/shefigures/2024/files/shefigures2024fiche-cz.pdf.
[239] Ibid.
[240] Ibid.
[241] Ibid.

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Women Entrepreneurs

Specific difficulties for women entrepreneurs often revolve around balancing work and extensive caregiving responsibilities, which frequently delay their entry into the business arena.[242] They also report perceiving lower prestige in running a business compared to men and express a greater need for public support.[243] Prejudice and insufficient initial support are identified as major barriers.[244] Recruitment processes, for instance, often feature gendered-biased language[245] and requirements, such as an emphasis on "high performance, full dedication, or extreme time flexibility", which can inadvertently discourage women from applying, as they may not apply unless they meet all listed criteria.[246] Cultural stereotypes about women's leadership and caregiving roles create hidden biases that limit women's access to funding and opportunities.

The challenges faced by women entrepreneurs extend beyond mere financial or logistical hurdles. The very motivation for starting a business, often driven by a desire for independence, suggests a reaction to existing structural rigidities in the labour market. The pervasive "prejudice," "male-oriented requirements," and "paternalism"[247] indicate that even when women venture into entrepreneurship, they are met with an environment steeped in unconscious bias. This is compounded by the disproportionate burden of "caregiving responsibilities"[248], which limits their capacity to engage fully in the demanding startup ecosystem.

[242] Strive Czechia. Strive Czechia: Empowering Small Entrepreneurs in the Digital Economy. https://strivecommunity.org/programs/strive-czechia.
[243] Ibid.
[244] Diverzita.cz. V Česku je stále nedostatek žen v technologických oborech. Pomůže umělá inteligence? November 26, 2024. https://diverzita.cz/en/aktualita/v-cesku-je-stale-nedostatek-zen-v-technologickych-oborech-pomuze-umela-inteligence.
[245] Gender-biased language either implicitly or explicitly favours one gender over another and is a form of gender-discriminatory language.
[246] Diverzita.cz. V Česku je stále nedostatek žen v technologických oborech. Pomůže umělá inteligence? November 26, 2024. https://diverzita.cz/en/aktualita/v-cesku-je-stale-nedostatek-zen-v-technologickych-oborech-pomuze-umela-inteligence.
[247] Ibid.
[248] TechRepublic. Gender Bias in Deep Tech: Europe's €198.8 Billion Opportunity. https://www.techrepublic.com/article/gender-bias-deep-tech-europe/.

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BEST PRACTISES BOX: Notable Female Tech Entrepreneurs

Despite the challenging landscape and low overall numbers, the Czech Republic boasts several prominent female founders who have achieved significant success across diverse tech sectors. These individuals serve as crucial role models, demonstrating the high capability and potential of Czech women in tech entrepreneurship. Examples include:

Simona Kijonková: Founder of Zásilkovna, a logistics platform operating under Packeta Group, which ships goods from e-shops to customers across 6 countries and delivers to 34. She is recognised as one of Forbes' 150 most influential women in the Czech Republic.

Klára Losert: Co-founder of Talkbase, a community operations platform that automates workflows for community and event builders. Her startup raised a $2.1 million venture round. She also founded CzechCrunch Shine, a startup community.

Karin Fuentesová: Founder of Digitoo, an AI-powered accounting platform aimed at automating invoicing processes.

Eva Hlavsová: Founder of Fondee, an online investment startup offering transparent investment solutions.

Jana Večerková: Co-founder of BrikkApp, a real estate micro-investment platform, and a seasoned entrepreneur in FinTech and EdTech.

Key Insights & Trends

Access and affordability:

- The Czech Republic has achieved near-universal internet access, with over 87% of adults online and minimal gender disparity in general and daily usage. However, this national success masks a significant affordability gap; in 2024, the Czech Republic had the largest gender gap in the EU, with 1.2% of women reporting an inability to afford internet access compared to 0.7% of men. Infrastructure gaps also persist between urban and rural areas, disproportionately affecting women in low-income and rural communities.

Digital skills and specialisation:

- While overall basic digital skills are high for both genders, a clear pattern of specialisation exists. Women are more likely to engage in online learning and use advanced functions of office software. In contrast, men show higher proficiency in fundamental technical skills like file management and are significantly more likely to be able to program. This specialization contributes to women's underrepresentation in the tech workforce.

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Gendered usage patterns:

- The gender gap has evolved from one of access to one of use and purpose. Women's digital engagement is often more passive, focused on consuming content and messaging, and centered on social connections, health information, and online shopping. Men, on the other hand, are more likely to engage in active, "empowering" activities like content creation, coding, and arranging paid services. This difference in usage is reinforced by a lack of perceived relevance and low self-confidence among women, particularly older women.

Workforce and leadership gap:

- A profound gender gap is evident in the digital labor market. Women make up only a small fraction of the ICT workforce and are severely underrepresented in STEM fields. For example, only 2.6% of female university students pursue ICT fields, compared to 14.6% of male students. This disparity extends to leadership, with women holding a disproportionately low number of leadership roles and startup founder positions. Women-led ventures receive a minimal share of venture capital funding.

Innovation and R&D disparity:

- The Czech Republic has the lowest rate of female participation in the R&D workforce in the EU (28.7%). This gap is also reflected in formal innovation outputs, with women accounting for just 30% of authors on research publications and a mere 7.3% of patent applications. Systemic biases and gendered language in recruitment processes, coupled with family-related time poverty, create significant obstacles for women seeking to advance in these fields.

Online threats and social barriers:

- For women, a specific form of digital exclusion is linked to technology-facilitated gender-based violence, such as cyberstalking and gender hate speech. Digitally illiterate or disadvantaged women are particularly vulnerable. Additionally, societal biases and the unequal distribution of caregiving responsibilities contribute to a "digital housekeeping gap," where women's domestic roles limit their time for professional digital upskilling.

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Italy

Context

Italy has achieved 45.8% basic digital skills coverage, compared to the EU average of 55.56%.[249] According to the Digital Decade report 2025, the percentage of ICT specialists in employment has decreased from 4.1% in 2024 to 4% in 2025 compared to the recent EU average of 5%.[250] The share of female specialists in 2024 was 17.1%. Italy has made remarkable progress in digital infrastructure and digital public services but continues to face challenges in AI adoption and startup growth, while having a leading role in strategic technologies, such as quantum and semiconductors.

The gender gap in access to digital skills, ranging from basic to professional levels, has been a persistent challenge for companies and governments for approximately a decade. Despite significant advancements in the digital sector, women continue to face limitations and obstacles regarding education and career opportunities.

However, amidst these challenges, there are also encouraging signs of progress and proactive efforts to promote digital inclusion. For instance, companies and governments have been implementing solutions and initiatives for about ten years to bridge the digital divide and enhance digital skills among women. A notable emergence of women in tech is changing the landscape, as they bring diverse perspectives and innovative solutions to tackle real-world problems, going beyond mere technological tools.[251] Furthermore, Italy's National Coalition for digital skills and jobs, part of 'Repubblica Digitale', promotes digital skills, uniting over 180 organisations.[252] The Italian Strategy for Digital Skills focuses on bridging digital divides, boosting e-skills in education, developing key competences, and increasing ICT specialists in emerging technologies.[253] Goals by 2025 include equipping 70% of the population with basic digital skills, doubling advanced digital skills in various groups, and enhancing public digital service usage to 64%, including older citizens.

Initiatives such as the Amazon Women in Innovation scholarship and the AWS re/Start training programs actively support young women pursuing careers in STEM fields.[254] Furthermore, the phenomenon of Women Startups (WSU) is expanding in Italy, with a nearly uniform geographical distribution across the country, indicating a positive trend in female digital entrepreneurship.[255]

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[249] Digital Skills and Jobs Platform – European Union. Italy: European Interactive Map. https://digital-skills-jobs.europa.eu/en/european-interactive-map/italy.

[250] Digital Skills and Jobs Platform – European Union. Italy: Snapshot of Digital Skills. https://digital-skills-jobs.europa.eu/en/latest/briefs/italy-snapshot-digital-skills.

[251] Futuroprossimo. “Italy Calls Mars: ASI-SpaceX Agreement for Scientific Experiments.” Futuroprossimo, August 8, 2025. https://en.futuroprossimo.it/2025/08/italia-chiama-marte-patto-asi-spacex-per-esperimenti-scientifici/.

[252] Repubblica Digitale. Portale. https://repubblicadigitale.gov.it/portale/.

[253] Digital Skills and Jobs Platform – European Union. Digital Skills and Jobs Platform. https://digital-skills-jobs.europa.eu/en/.

[254] Amazon EU. “Women + STEM in Italy: The Formula for a More Equitable Community.” Amazon EU, March 1, 2024. https://www.aboutamazon.eu/news/aws/women-stem-in-italy.

[255] MDPI. “Exploring the Role of Socially Responsible Marketing in Fostering Diversity, Equity, and Inclusion.” Administrative Sciences 8, no. 4 (December 2018): 66. https://www.mdpi.com/2076-3387/8/4/66.

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The national strategy for gender equality (2021-2026) explicitly aims to create a fairer work environment, increase women's employment, enhance their skills, and eliminate cultural barriers and gender stereotypes in STEM fields.[256] Italy's specific socio-cultural context, which is marked by deeply ingrained gender stereotypes, traditional roles (such as those of housewives), and notable regional disparities, significantly influences the presence and persistence of the digital gender gap.

Importantly, the focus on unpaid domestic workers and homemakers as a particularly excluded group highlights a crucial, yet often overlooked, dimension of digital inequality.[257] This group disproportionately bears the burden of household and caregiving tasks, leading to "time poverty" that severely restricts their discretionary time for acquiring digital skills and engaging with technology. Consequently, their digital needs and potential contributions often remain largely invisible in mainstream digital policies and AI designs, deepening their exclusion rather than fostering their inclusion.[258]

Access Layer of the Digital Gender Gap

Italy has seen a notable increase in internet coverage by technology over recent years. In 2019, 76% of Italian families had internet access from home.[259] More recently, individual internet use has accelerated, with 84% of individuals in Italy using the internet in 2023, rising to 87% by January 2024.[260] This indicates that a substantial majority of the population is now online.

Despite this progress, a segment of the population remains offline. At the start of 2024, 7.22 million people in Italy did not use the internet, representing 12.3% of the total population.[261] This figure was slightly higher in 2023, with 8.17 million people (13.9% of the population) remaining offline.[262] While general household internet access data for Italy in 2024 is not explicitly provided in the same comprehensive manner as for the EU average (94% of EU households in 2024),[263] regional data for Insular Italy shows 90.30% of households had internet access in 2023, projected to increase to 92.14% in 2024.[264]

While the overall internet penetration has grown, a gender gap in access persists. In 2023, 84% of Italian women and 87% of men were regular internet users (defined as using the

[256] European Institute for Gender Equality (EIGE). "Gender Mainstreaming Approach – Italy." Last modified June 2025. https://eige.europa.eu/gender-mainstreaming/countries/italy.
[257] Ibid.
[258] Ibid.
[259] Istituto Nazionale di Statistica (ISTAT). "Broadband". https://www.istat.it/en/tag/broadband/.
[260] Datareportal. "Digital 2024: Italy." Published February 21, 2024. https://datareportal.com/reports/digital-2024-italy.
[261] Ibid.
[262] Datareportal. Digital 2023: Italy. February 9, 2023. https://datareportal.com/reports/digital-2023-italy.
[263] Eurostat. Statistics Explained. https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Main_Page.
[264] ReportLinker. Forecast: Households With Internet Access at Home in Insular Italy. https://www.reportlinker.com/dataset/c651f971f249de6b6a1836c37d89ca6adea3b290.

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internet at least once a week).[265] This represents a 3% point gap in favour of men. Furthermore, a higher percentage of women reported never having used the internet compared to men. In 2023, 10% of Italian women and 8% of men stated they had never used the internet.[266] This indicates a persistent segment of the female population remains entirely disconnected from the digital world. Interestingly, Italy has the highest number of people who have never used the internet and is also the only country among our project countries where a higher share of women than men report never having used it. The persistence of a gender gap in internet non-use in Italy can be attributed to generational disparities. While younger age groups exhibit nearly universal usage and minimal gender differences, older cohorts reveal a pronounced and enduring divide. According to ISTAT, in 2022, 78.7% of men aged 11 and over reported regular internet use, compared to 72.8% of women, yielding a 5-percentage-point gap. Notably, this gender gap disappears entirely among people aged 20–54 but resurfaces among the elderly: those aged 65 and above experience a female disadvantage of approximately 10 percentage points.[267]

While affordability is a global barrier to internet access, its role in Italy is nuanced. In 2019, 16.5% of individuals who did not use the internet in Italy cited economic reasons.[268] However, in 2024, Italy was the only country among those analysed where men (2.1%) were slightly more affected than women (2%) by the inability to afford an internet connection.[269] Only 22.2% of Italian households have one device per person (dropping to 14.1% in Southern Italy), while 12.3% of households with school-aged children have no PC/tablet, and only 6.1% of children have a dedicated personal computer.[270] Regional divides persist, with internet use at 79% in the North and just 71% in the South, disproportionately affecting women in Southern areas.[271]

Although Italy enjoys broad internet freedom with minimal censorship,[272] the Repubblica Digitale initiative launched in 2019 seeks to raise digital literacy and reduce the digital divide, supported by the massive PNRR (Recovery and Resilience Plan), which dedicates over 25% of its €194 billion budget to digital transition, including major infrastructure programs like Italia a 1 Giga.

[265] Statista. “Internet Penetration Rate by Gender in Italy.” https://www.statista.com/statistics/736954/internet-penetration-rate-by-gender-in-italy/.
[266] United Nations Economic Commission for Europe (UNECE). “The Digital Divide in Italy: A Gender and Territorial Problem.” April 2023. https://unece.org/statistics/documents/2023/04/digital-divide-italy-gender-and-territorial-problem-istat.
[267] UNECE. “B2_WP06_Bologna_EN_rev.pdf.” April 19, 2023. https://unece.org/sites/default/files/2023-04/B2_WP06_Bologna_EN_rev.pdf.
[268] Istituto Nazionale di Statistica (ISTAT). “Broadband.” https://www.istat.it/en/tag/broadband/.
[269] Freedom House. “Italy: Freedom on the Net 2024.” https://freedomhouse.org/country/italy/freedom-net/2024.
[270] Ibid.
[271] UNECE. “Digital Divide in Italy: A Gender and Territorial Problem.” April 2023. https://unece.org/statistics/documents/2023/.
[272] Freedom House. “Italy: Freedom on the Net 2024.” https://freedomhouse.org/country/italy/freedom-net/2024.

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Table 12: Key statistics on internet / device access in Italy, 2019

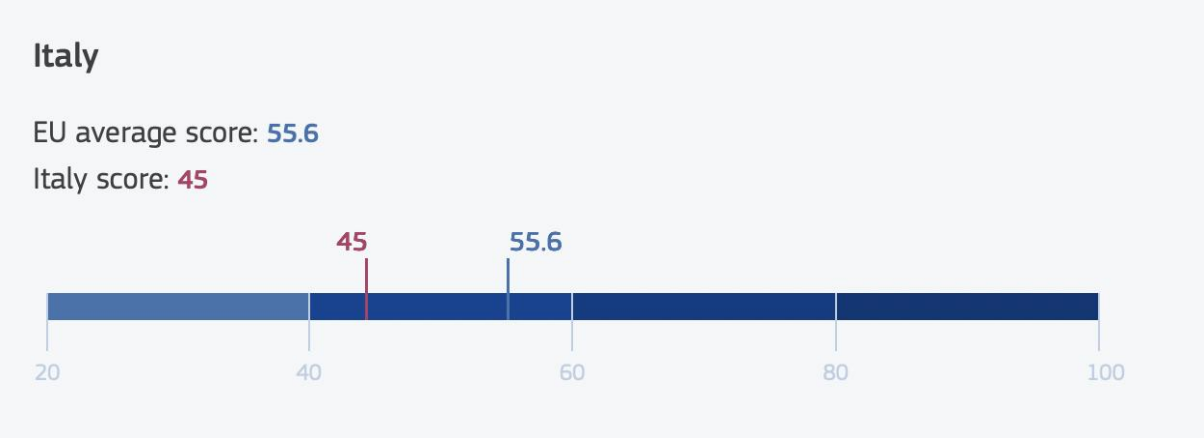
Metric	Value
Households with Internet Access (All, 2019)	76,1%
Households with Broadband Connection (All, 2019)	74,7%
Households with Broadband (with at least one minor)	95.1%
Households with Broadband (people over 65y/o)	34%
Households with One Digital Device per Person	22,2%
Households with No PC/Tablet (Families with Children 6–17 y/o)	12.3%

Source: ISTAT, 2019

Skills Layer of the Digital Gender Gap

Contrasting with the higher-ranked countries, Italy has a higher proportion of individuals without basic digital skills. This could be one of the reasons behind slow adoption of e-government services usage among its population, as statistics show for Italy (37%).[273] As of 2023, only 45.8% of Italians aged 16–74 possessed at least basic digital skills, well below the EU average of 55.6%.[274] Progress has been stagnant since 2021. This deficit affects not only employability and productivity but also access to public services and civic participation.

Figure 2: At least basic digital skills (% of individuals aged 16-74)



Source: EU Digital skills & jobs platform

[273] Euronews. "Digitalisation." Accessed September 21, 2025. https://www.euronews.com/tag/digitalisation.

[274] European Commission. "Women in Digital Scoreboard 2024." Accessed September 21, 2025. https://digital-strategy.ec.europa.eu/en/news/women-digital-scoreboard-2024.

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Italy ranks 23rd out of the 27 EU Member States in the DESI dashboard for the Digital Decade for the 'At least basic digital skills' indicator, with 45.8% of its population possessing at least basic digital skills.[275]

Educational attainment is a major driver of digital skills. Individuals with tertiary education exhibit a 76% basic digital skills rate, while those with only primary education drop to 22%.[276] Unfortunately, women remain underrepresented in higher education, particularly in STEM fields and ICT. According to data released by the World Economic Forum in its Global Gender Gap Report 2024,[277] in Italy the percentage of women with a degree in ICT technologies is 1.7%, compared to 8.2% of men, and among all STEM subjects in general the lowest share concerns ICT technologies, with only 16% of ICT specialists in Italy being female.[278]

Gender stereotypes and cultural barriers that limit women's access and professional growth in the digital sector persist, and girls continue to exclude themselves from the so-called STEM (Science, Technology, Engineering, and Mathematics) paths because they too often identify with stereotypes that see them as distant from science and more oriented towards humanities. In 2022, only 18% of Italian women obtained a degree in scientific subjects, below the European standard of 26%[279]: the increase in Internet use – a reliable indicator of basic digital skills – was greatest among the youngest (6-14 years) and, subsequently, in the 55-74 age group. However, the differences by age remain enormous, ranging from almost 90 % among those under 44 to 32.8 % for people aged 65 and over. Gender differences (76.5% for males and 70.4% for females) are concentrated in the 55 and over age group, while regular use of the web reaches very high levels among graduates (92.5%), and is halved (45%) among those with a middle school diploma or less.

In 2019, ISTAT photographed a situation in which in Italy, a country in which almost the entire population has the possibility of using the internet (76% of Italian families can use it from home and only 16.5% of the total non-users have economic reasons), belonging to a social category is an indicator of whether or not they use the internet and consequently of digital competence. This graph re-elaborates ISTAT and INPS data updated to 2023 regarding digital skills, showing how those who belong to a low economic level are significantly more disadvantaged in this area:

[275] European Commission. “Digital Decade DESI Dashboard (2023 Onwards).” Accessed September 21, 2025. https://digital-decade-desi.digital-strategy.ec.europa.eu/datasets/desi/charts.
[276] European Commission. “Digital Economy and Society Index (DESI) – Italy.” Accessed September 21, 2025. https://digital-strategy.ec.europa.eu/en/policies/desi-italy.
[277] World Economic Forum. Global Gender Gap Report 2024. June 11, 2024. https://www.weforum.org/publications/global-gender-gap-report-2024/.
[278] European Commission. Digital Economy and Society Index (DESI) – Italy. September 27, 2023. https://digital-strategy.ec.europa.eu/en/policies/desi-italy.
[279] Istituto Nazionale di Statistica (ISTAT). Rapporto Annuale 2022: La Situazione del Paese. July 8, 2022. https://www.istat.it/it/files/2022/07/Pillole-RAPPORTO-ANNUALE-2022-2.pdf.

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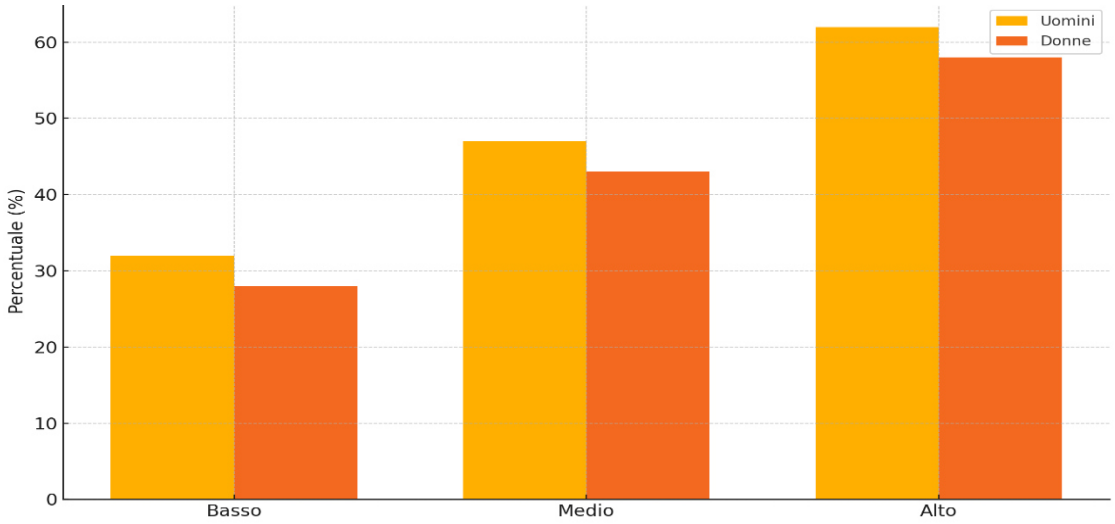
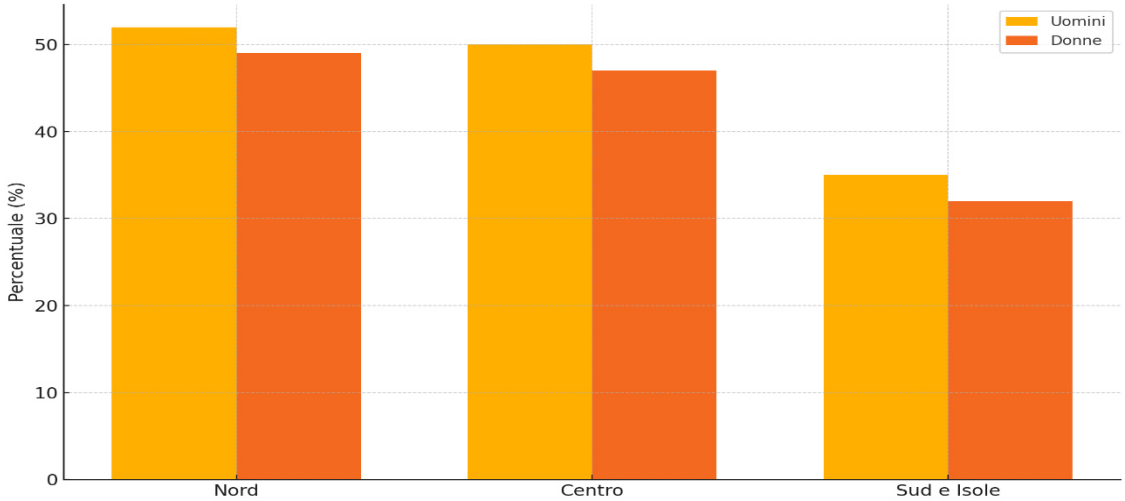
Chart 17: Level of digital competencies according to gender



Source: ISTAT, 2023

According to ISTAT data from 2021, at least basic digital skills present a strong territorial gap in Italy. The regions with the greatest diffusion are Lazio (52.9%), Friuli-Venezia Giulia (52.3%) and the Autonomous Province of Trento (51.7%). On the contrary, regions in Southern Italy such as Calabria (33.8%), Sicily (34%) and Campania (34.2%) record significantly lower percentages. The gender gap is constant and favourable to men in every area, and presents worse data for women in the South. Similarly, advanced digital skills like online content creation or cybersecurity awareness are prevalent in the North (87%) but much lower in the South (74%).[280]

Chart 18: Level of digital competencies according to gender and geographical scope



Source: ISTAT, 2023

[280] European Commission. Women in Digital Scoreboard 2024. August 12, 2024. https://digital-strategy.ec.europa.eu/en/news/women-digital-scoreboard-2024.

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Household composition also influences digital literacy. Families with children report higher digital skills (64%) than those without (53%), possibly due to increased use of digital tools for education and parenting.[281] Among housewives and older women, digital exclusion is shaped less by income and more by cultural factors, such as fear, lack of interest, or perceived complexity, limiting engagement with ICT even when smartphones are available.[282]

Furthermore, women have fewer advanced digital/IT skills and a higher share without digital skills than men, which is particularly evident in the age segment of 30 and above (paradoxically, in adolescence in Italy the female target is more operational in digital than their male peers, something that is lost during growth and the constraint of the social roles that are imposed):

Table 13: Level of digital skills

Digital skills	Men	Women
None	31.3%	35.8%
Low	23.5%	24.6%
Basic	21.6%	21.2%
Advanced	23.6%	18.4%

Source: ISTAT, 2023

Regarding participation in online courses to improve digital skills, women's involvement is always lower than men of the same age group:

Table 14: Participation in digital skills courses by gender

Year	Men (%)	Women (%)	gap
2019	45.3	39.6	5.7
2020	49.5	44.1	5.4
2021	50.7	45.6	5.1
2023	45.2	39.6	5.6

Source: ISTAT, 2023

Given the extent of the phenomenon and the progressive awareness of all European societies, for about a decade solutions and initiatives have been implemented to limit the digital divide and promote the increase of digital skills in the female sphere. It should be noted that although numerous funding programs exist, their accessibility and continuity over time still represent an obstacle for many companies and organisations that want to implement equal opportunity

[281] Secondo Welfare. "Jobs and Digital Skills, the Situation in Italy." October 25, 2023. https://www.secondowelfare.it/primo-welfare/lavoro/jobs-and-digital-skills-the-situation-in-italy/.
[282] Bocconi University. "Technology Is Still a Boy's Game: Italy Is 25th Out of 28 for Digital Gender Equality." March 4, 2021. https://www.unibocconi.it/en/news/technology-still-boy-game-italy-25th-out-28-digital-gender-equality.

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policies in the digital sector and demonstrate the need to further affirm the commitment to solving this problem at a political, social, private and cultural level.

Nationally, Italy is addressing this gap with the National Strategy for Digital Skills, which aims to reach 70% digital literacy by 2026. The Repubblica Digitale fund (€350M, 2022–2026) targets women, youth, and vulnerable populations. AI-assisted learning pilots and corporate-led academies also seek to raise competence and employability, particularly in underserved Southern regions. The analysis of active policies on equal opportunities and digital resilience plays a central role in defining an inclusive and innovative ecosystem in Italy and across Europe, and several public and private best practices have been implemented with the aim of bridging the digital divide and promoting social equity.

Usage Layer of the Digital Gender Gap

In Italy, gender disparities in digital engagement extend beyond mere access to the internet and devices, manifesting strongly in frequency, purpose, and depth of use, while DESI and ISTAT data confirm that men and women are increasingly connected (78.7% of men and 72.8% of women used the internet regularly in 2022).[283] [284] Significant differences emerge in how digital tools are used, and in the meaningfulness of that use.

Regular internet use is common among younger women and men alike, but older women, particularly those over 65, use digital tools much less frequently. Among this group, 94% never use a PC and only 1.7% use one daily. The reliance on smartphones as the sole device is especially prevalent among housewives, low-income women, and those without tertiary education, limiting the complexity of tasks they can perform online.

Table 15: Daily Internet use by gender (16 – 74 years)

Type	% Daily Internet Users
Men	80.2%
Women	74.7%

Source: ISTAT, 2023

Women are approximately 5.5 percentage points behind men in their daily use of the Internet, with a gap that has tended to reduce over the years, also thanks to greater awareness already underway throughout Europe and in Italy and to a more widespread diffusion of hardware and connectivity technologies in previously more isolated areas:

[283] European Commission. Digital Economy and Society Index (DESI) 2022: Italy. July 28, 2022. https://www.astrid-online.it/static/upload/desi/desi_2022__italy__eng.pdf.

[284] United Nations Economic Commission for Europe (UNECE). Statistics Publications. Accessed September 21, 2025. https://unece.org/publications/statistics.

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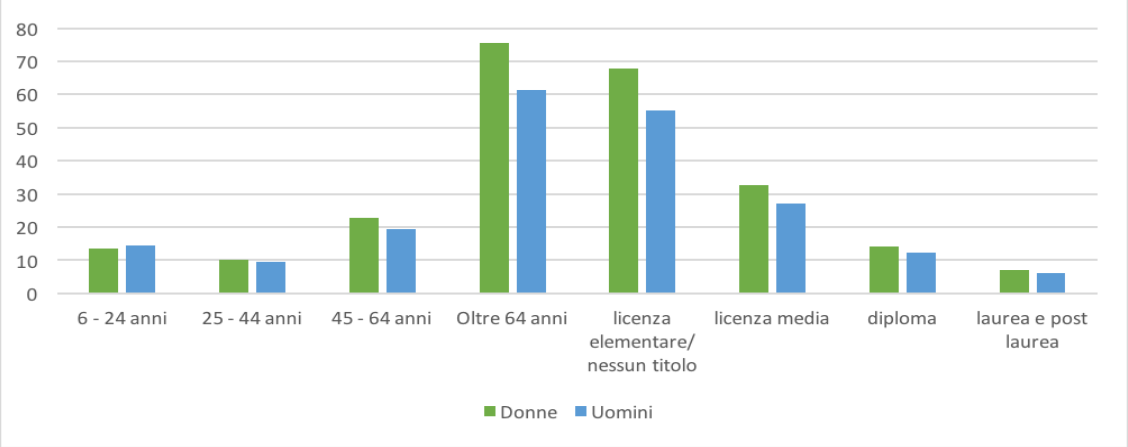
Table 16: Gender gap in (16 – 74 years) in 2018 - 2023

Year	Men (%)	Women (%)	Gap (points)
2018	71.8	63.1	8.7
2019	74.2	66.8	7.4
2020	77.0	71.3	5.7
2021	78.6	73.5	5.1
2023	80.2	74.7	5.5

Source: ISTAT

Women are more likely than men to engage in passive online activities, such as browsing, consuming content, or communicating via messaging apps, while men more often report active or creative digital tasks, including online content creation, coding, or configuring digital services.[285]

Chart 19: Usage of internet by gender, age and education level



Source: ISTAT, 2021

The majority of those over 64 and those with at most an elementary school education never used the internet in 2019. These two categories are also the ones with the greatest gap between men and women: 14.2% for the former and 12.5% for the latter, both in favour of men.

Women, particularly those outside the formal labour force, tend to use ICT for personal communication, family coordination, and social networking, but are less engaged in job search, online learning, and e-government services. For instance, 15.2% of women participated in online training in 2023 compared to 18.9% of men. Men are more likely to use ICT for information searches, problem-solving, and transactional purposes, which are activities associated with economic and professional empowerment. This difference is

[285] Dondena Centre for Research on Social Dynamics and Public Policy. The Gender Digital Divide. November 30, 2020. https://dondena.unibocconi.eu/sites/default/files/media/attach/The-gender-digital-divide_20201130.pdf.

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especially visible in marginalised groups: unemployed women, rural residents, and older housewives report low confidence in using ICT for tasks such as online banking, applying for benefits, or creating professional content.[286]

The meaningfulness of digital use is a central issue in the gender gap. Passive use consumption without interaction or creation is common among women with lower digital skills, while active use, such as producing content, contributing to online forums, or using advanced workplace tools, is less common. Women's engagement in advanced tasks like editing websites, programming, or managing online sales is significantly lower than men's, even among younger cohorts.[287] This is compounded by the self-perception gap: many women underestimate their abilities, leading to avoidance of more complex or unfamiliar tools.

Intersectional analysis highlights that older, low-educated women in Southern Italy form the group most excluded from meaningful digital engagement. Barriers are not purely technological but also cultural, including perceptions that technology is "not for them," fear of making mistakes, and entrenched gender norms assigning ICT tasks to men in the household.

Housewives and caregivers face time poverty and often have sporadic, task-specific digital use, such as messaging relatives or searching for recipes, without engaging in broader online opportunities for education, civic participation, or income generation. Even when devices are available, the absence of targeted, confidence-building training prevents these women from moving from passive to active use.

Employment Layer of the Digital Gender Gap

Women remain significantly underrepresented in Italy's digital employment sector, particularly within ICT roles and STEM fields. This disparity is evident across various indicators, from specialist positions to graduate rates.

In 2022, women constituted a mere 1.5% of total employment as ICT specialists in Italy, a figure starkly contrasted by 5.7% for men.[288] This places Italian women at rank 21 among EU countries for this indicator. A slightly broader perspective from 2021 indicates that female ICT specialists represented 16% of all ICT specialists in Italy, which, while still low, was only slightly below the EU average of 19%.[289] This suggests that within the existing pool of ICT specialists, women's representation is closer to the EU average, but the overall number of ICT specialists in Italy (for both genders) is low compared to the EU.

The pipeline for digital talent reveals significant gender imbalances starting at the educational level. In 2021, there were 15 female STEM graduates per 1000 individuals aged 20-29 in Italy,

[286] Ibid.

[287] European Commission. Digital Economy and Society Index (DESI) 2022: Italy. July 28, 2022. https://www.astrid-online.it/static/upload/desi/desi_2022__italy__eng.pdf.

[288] Dondena Centre for Research on Social Dynamics and Public Policy. The Gender Digital Divide. November 30, 2020. https://dondena.unibocconi.eu/sites/default/files/media/attach/The-gender-digital-divide_20201130.pdf.

[289] Ibid.

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compared to 22 men.[290] Italy ranked 11th for women in this category. The disparity becomes even more pronounced when focusing specifically on ICT degrees. In 2021, only 0.3% of women obtained an ICT degree, in stark contrast to 1.2% of men. This places Italy at the very bottom (rank 27) for women in this category among EU countries.[291] The Global Gender Gap Report 2024 further underscores this, reporting 1.7% of women with ICT degrees compared to 8.2% of men.[292] This indicates a severe bottleneck in the educational pipeline, where very few women pursue ICT-specific higher education.

Table 16: Women's Representation in Digital and STEM Employment in Italy

Metric	Year	Women	Men
ICT Specialists (% of total employment)	2022	1,5%	5,7%
STEM Graduates (per 1000 individuals aged 20-29)	2021	15%	22%
ICT Graduates (% of individuals with ICT degree)	2021	0,3%	1,2%

Source: University Bocconi, 2020, WE Forum, 2024

Even for women who pursue STEM degrees, challenges persist in the workplace. Five years after obtaining a STEM master's degree, 85% of women were employed compared to 92.5% of men. The disparity is starker for stable jobs, with only 45.1% of women having stable employment compared to 62.5% of men.[293] The gender pay gap in Italy in 2022 was 15%.[294] While this figure is below the EU average of 19%[295] , the available data does not specifically break down this pay gap for the ICT sector alone. Furthermore, male STEM graduates earn, on average, 23.6% more than their female counterparts five years post-graduation, partly due to women being more likely to work part-time.[296]

However, the digital gender gap in Italy extends beyond issues of representation, significantly shaping access to leadership roles and employment in high-demand ICT sectors. In 2020, data on specific professional clusters revealed pronounced gender segregation within the country's digital workforce, particularly in occupations requiring advanced digital competencies. For instance, women accounted for only 17% of positions in cloud computing, compared with 83% held by men.[297] Similarly, in engineering, women represented merely 19% of the workforce, with men occupying the remaining 81%.[298] Even in the comparatively more

[290] Ibid.
[291] Ibid.
[292] World Economic Forum. Global Gender Gap Report 2024. June 11, 2024. https://www.weforum.org/publications/global-gender-gap-report-2024/.
[293] Ibid.
[294] Dondena Centre for Research on Social Dynamics and Public Policy. The Gender Digital Divide. November 30, 2020. https://dondena.unibocconi.eu/sites/default/files/media/attach/The-gender-digital-divide_20201130.pdf.
[295] Ibid.
[296] Ibid.
[297] Ibid
[298] Ibid.

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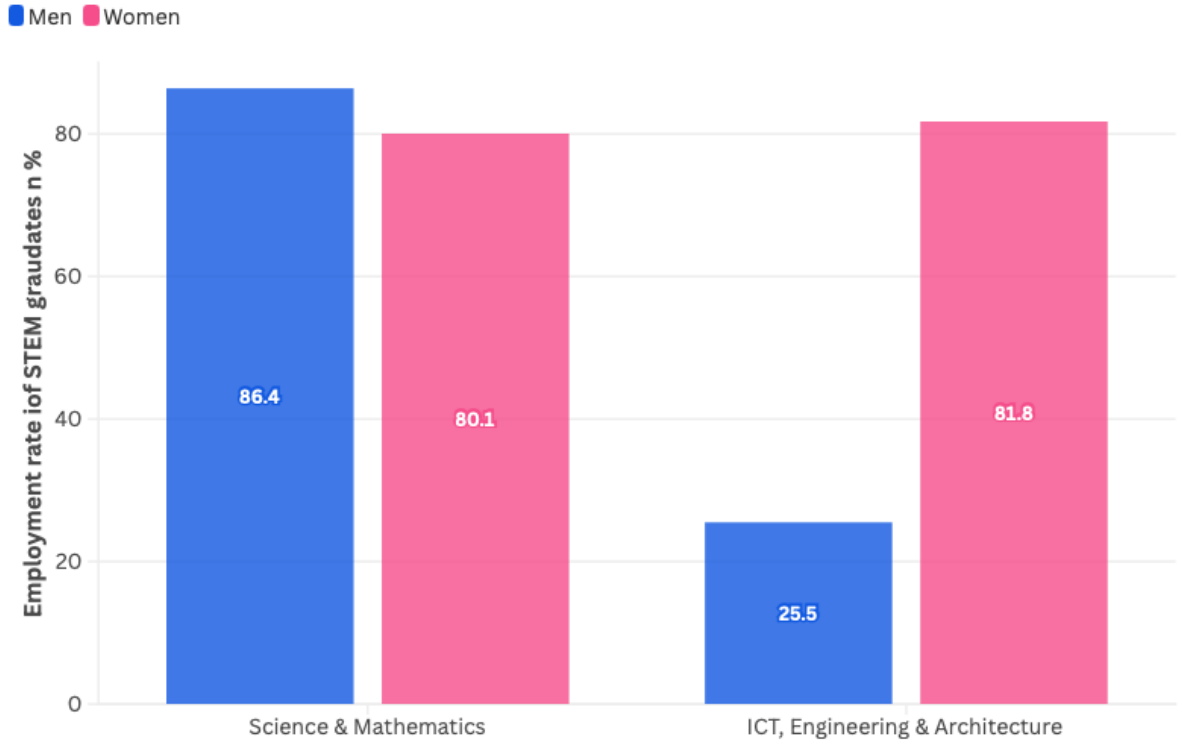
gender-balanced field of data and artificial intelligence, women's share stood at 31%, while men dominated with 69%.[299]

The digital divide is rooted in stereotypes that reinforce the perception of technology as a male domain. This begins in childhood, with gender-differentiated marketing of tech toys predominantly to boys, leading to lower interest and even anxiety among girls regarding technology.[300] In educational settings, teachers have been observed to exhibit gender biases in grading STEM subjects, leading to lower expectations for girls, even high-performing ones.[301] This directly contributes to girls opting out of STEM training, as evidenced by only 32% of science graduates being women in Italy in 2016.[302]

Chart 20: Employment Rate of STEM Graduates by Gender and Discipline (Ages 25–64), 2023



Source: ISTAT 2023

Women in leadership and management positions

Women continue to be significantly underrepresented in leadership and management roles within Italian businesses. In 2022, women constituted only 23.1% of individuals employed in senior and middle management positions, placing Italy in the second quintile globally for this

299 Ibid.
300 Ibid.
301 Ibid.
302 Ibid.

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metric.[303] This low representation extends to unlisted companies, where only 14% have a woman at the top, and Italy ranks 29th in terms of the number of women on the boards of directors of listed companies.[304] This disparity is also evident within the venture capital and banking sectors, where women are notably underrepresented among those who allocate capital.[305] This limited presence in decision-making roles within financial institutions can inadvertently perpetuate the challenges women entrepreneurs face in securing funding.

The underrepresentation of women in leadership and specialised ICT roles, coupled with the persistent challenges in career progression, creates a self-perpetuating cycle. Fewer female role models in leadership positions can deter younger women from entering or staying in these fields. The economic consequences, including lower pay and less stable employment, further disincentivise women from pursuing digital careers, reinforcing existing gender inequalities in the labour market.

BEST PRACTISES BOX: Targeted Initiatives for Housewives

"Digital skills for housewives" project (PA Social + Formez + Regions): some individual regions (e.g. Puglia, Sicily, Emilia-Romagna) have started basic training courses on the use of PCs, smartphones, SPID, email, safe browsing, with a focus also on tools for home and family management (e.g. online shopping, utility management, digital payments)

Women and Digital – Google Italy Program: aimed at women seeking re-entry into the world of work, including housewives. Includes courses on entrepreneurship, digital marketing, Google tools (Gmail, Drive, Meet, etc.)

She Means Business – Meta and Fondazione Mondo Digitale: free training aimed at women (large number of housewives involved) who want to transform a passion (e.g. cooking, sewing, crafts) into an online business

Digital Libraries and Civic Centers: Many public libraries across the country have activated “Digital Facilitation Points” where basic courses, SPID assistance, and PC use support are offered, especially to housewives.

[303] World Bank. Gender Data Portal: Italy. Accessed September 21, 2025. https://genderdata.worldbank.org/en/economies/italy.
[304] S-Peek. “Female Entrepreneurship in Italy: Let the Data Speak for Themselves.” March 8, 2022. https://blog.s-peek.com/en/posts/female-entrepreneurship-in-italy-let-the-data-speak-for-themselves-d830094d7c57.
[305] Lived Places Publishing. Can Social Entrepreneurship Work in the Rust Belt? 2022. https://livedplacespublishing.com/book/isbn/9781916704114.

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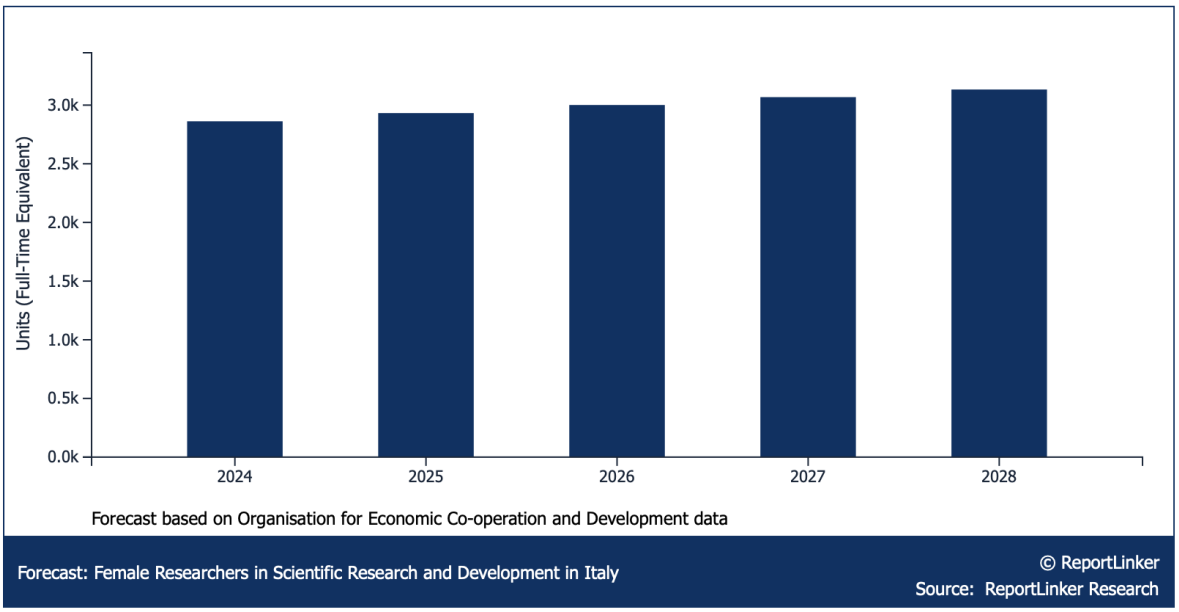
Innovation Layer of the Digital Gender Gap

Italy's R&D sector is a critical component of its digital transformation, with strong research communities focusing on advanced areas such as Artificial Intelligence, High Performance Computing, and quantum technologies.[306] A positive trend is projected for female researchers in scientific R&D, with an estimated annual increase expected to reach 3.13 thousand by 2028, reflecting a compound annual growth rate (CAGR) of approximately 2.3% from 2024.[307]

Chart 21: Female researchers in scientific research and development in Italy, forecast 2024-2028



Source: ReportLinker Research

Despite these encouraging trends, a significant gender gap persists across various segments of Italy's R&D landscape. In 2021, women represented 50% of research personnel in the government sector (up from 47% in 2013) and 42% in the higher education sector (up from 40% in 2013). However, in the business enterprise sector, women constituted only 24% of research personnel in 2021, a modest increase from 22% in 2013.[308] While Italy performs above the EU-27 average for female researchers in the government and business enterprise sectors, it remains below the EU average for the higher education sector.[309] The proportion of women among Doctoral graduates in Italy saw a slight decrease from 52% in 2013 to 49% in 2021.[310] Overall, women employed in scientific fields in Italy account for 34% (approximately

[306] European Commission. Digital Economy and Society Index (DESI) – Italy. https://digital-strategy.ec.europa.eu/en/policies/desi-italy.
[307] ReportLinker. Forecast: Female Researchers in Scientific Research and Development in Italy. https://www.reportlinker.com/dataset/9694dc662c6bd8dbbd355f8dc39efe28d0d463f0.
[308] European Commission. She Figures 2024: Gender Equality in Research and Innovation – Italy. 2024. https://ec.europa.eu/assets/rtd/shefigures/2024/files/shefigures2024fiche-it.pdf
[309] Ibid.
[310] Ibid.

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400,000 female scientists and engineers), which is nearly half the number of their male colleagues (760,000).[311] This disparity extends to the financial realm, with a 15% wage gap in STEM fields in Italy, compared to a global average of 20%.[312] In terms of innovation output, women were involved in only 23% of international patent applications between 1999 and 2020, representing 13% of all listed inventors. Although this participation increased to 31% of applications and 16% of inventors by 2020, achieving gender parity in patenting is not projected until around 2061 based on current trends.[313]

Women entrepreneurs

In Italy, female-led companies constitute a significant segment of the overall business landscape. In 2023, approximately 22.2% of all businesses were led by women, a figure that, while substantial, remains slightly below the European average of 32%.[314] This translates to over 845,000 companies under female leadership and more than one million enterprises where women hold directorial positions.[315]

The economic contribution of these women-led enterprises is noteworthy. They generate approximately 21% of Italy's GDP[316], a figure that closely aligns with their 22.6% representation among total enterprises.[317] This near-proportional contribution to the national economy, despite their lower overall numbers compared to male-led businesses, indicates that women-led businesses are highly efficient and productive. This efficiency suggests that if the quantitative representation of women in entrepreneurship were to increase, their contribution to Italy's GDP could grow substantially, highlighting an underutilised economic resource.

Supporting female entrepreneurship, therefore, is not merely a matter of social equity but a strategic economic lever for Italy to enhance its overall productivity and foster greater national growth.

[311] University of Trieste. "Women and Girls in Science: How UniTS Champions Its Importance." February 9, 2024. https://portale.units.it/en/news/women-and-girls-science-how-units-champions-its-importance.
[312] Ibid.
[313] World Intellectual Property Organization (WIPO). Digital Access to Knowledge and Women in Science. 2025. https://www.wipo.int/edocs/pubdocs/en/wipo-pub-econstat-wp-88-en-digital-access-to-knowledge-and-women-in-science.pdf.
[314] De Rosa, Serena. "Public Financing to Support Female Entrepreneurship in Italy." Rivista Piccola Impresa/Small Business 1 (2025): 151–170. https://journals.uniurb.it/index.php/piccola/article/view/4723/4489.
[315] S-Peek. "Female Entrepreneurship in Italy: Let the Data Speak for Themselves." March 8, 2022. https://blog.s-peek.com/en/posts/female-entrepreneurship-in-italy-let-the-data-speak-for-themselves-d830094d7c57.
[316] Ibid.
[317] Ibid.

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Table 17: Female Entrepreneurship in Italy (2022/2023)

Metric	Year	Value
Female-led businesses (% of total)	2023	22.2%
Startups with female prevalence	2023	13.7%
Women in senior and middle management	2022	23,1%
Contribution of women's enterprises to Italian GDP	2022	21%

Sources: Picolla Impresa; S-PEEK; Intesa Sanpaolo Innovation Center; World Bank Group

A positive trend is emerging among innovative startups. As of the first quarter of 2023, startups with female majority ownership (those with women holding the majority of shares and administrative roles) totalled 1,924, representing 13.7% of the 14,029 innovative startups.[318] This marks a striking 40% increase (+576) over the past two years.[319] Notably, these startups are thriving in high-value sectors like artificial intelligence, edutech, food-tech, sustainable tourism, and fintech, indicating a shift from traditional roles in less capital-intensive industries.

Interestingly, women entrepreneurs in Italy face substantial structural and cultural challenges when seeking traditional financing.[320] Empirical evidence indicates that women are charged more for credit facilities. Specifically, women in Italy pay approximately 29 basis points more than men for overdraft facilities, a differential that persists even after accounting for various business, borrower, and market characteristics.[321]

This observation provides compelling empirical proof of taste-based discrimination. Studies explicitly state that women are not inherently riskier borrowers; in fact, they exhibit lower bankruptcy rates and a better credit history.[322] This contradicts the notion of "statistical discrimination," which would imply differential rates based on objective risk assessment. The most striking evidence supporting taste-based discrimination is the impact of a guarantor's gender: a female borrower with a male guarantor benefit from lower rates, whereas with a female guarantor, her interest rate is significantly higher. In such cases, a female borrower guaranteed by a woman is perceived by banks as the "absolute worst possible borrower".[323] This strongly suggests that lenders are charging more due to a bias against women, rather than an objective evaluation of risk. This bias is likely rooted in persistent cultural stereotypes prevalent in Italy that traditionally link entrepreneurship to masculine traits and often confine

[318] Intesa Sanpaolo Innovation Center. “Female Entrepreneurship in Italy and Worldwide.” October 17, 2023. https://www.intesasanpaoloinnovationcenter.com/en/news-and-events/news/2023/10/female-entrepreneurship-italy-world-innovators/.
[319] Ibid.
[320] Alesina, Alberto F., Francesca Lotti, and Paolo Emilio Mistrulli. “Do Women Pay More for Credit? Evidence from Italy.” NBER Working Paper No. 14202. July 2008. https://www.nber.org/system/files/working_papers/w14202/w14202.pdf.
[321] Alesina, Alberto F., Francesca Lotti, and Paolo Emilio Mistrulli. “Do Women Pay More for Credit? Evidence from Italy.” NBER Working Paper No. 14202. July 2008. https://www.nber.org/system/files/working_papers/w14202/w14202.pdf.
[322] Ibid
[323] Ibid.

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women to domestic roles.[324] This situation highlights that general financial literacy programs or risk-mitigation strategies alone will not resolve this financing gap. Instead, direct interventions aimed at challenging and eliminating gender bias within financial institutions are necessary, alongside policies that actively promote gender diversity on bank boards.

Furthermore, a "persistent credit crunch" on female entrepreneurship was observed, which exacerbated economic challenges during the COVID-19 pandemic.[325] A significant majority of women-led businesses, approximately 76%, operate as sole proprietorships, a structure that often presents inherent challenges in accessing adequate growth capital and broader development opportunities.[326]

To address the funding disparities, Italy has implemented a robust policy framework to support female entrepreneurship. The National Recovery and Resilience Plan (NRRP), which is the largest in the EU, allocates a substantial EUR 48 billion (25.1% of its total budget) to digital transition initiatives. A key focus of this allocation is to reduce the gender gap in the STEM sector and to provide direct support for women-led enterprises.[327] Specifically, Mission 5 of the NRRP, focused on "Inclusion and cohesion," aims to finance at least 2,400 women-led enterprises by 2026, with 700 of these planned for 2023 alone.[328]

Beyond direct funding, policy interventions are also targeting systemic financing disparities. The new Italian Budget Law has allocated a fund of €20 million specifically to encourage female entrepreneurship.[329] Public financial tools have been identified as crucial in supporting women entrepreneurs, with a systematic overview of existing opportunities spanning from 1992 to 2024 highlighting their importance.[330] Furthermore, the European Union's AI Regulation is cited as a legislative precedent that imposes obligations on suppliers and deployers of AI technologies to actively address AI-related risks, including bias and discrimination, which could impact financial access in digital contexts.[331]

[324] De Rosa, Serena. "Public Financing to Support Female Entrepreneurship in Italy." Rivista Piccola Impresa/Small Business 1 (2025): 151–170. https://journals.uniurb.it/index.php/piccola/article/view/4723/4489.
[325] S-Peek. "Female Entrepreneurship in Italy: Let the Data Speak for Themselves." March 8, 2022. https://blog.s-peek.com/en/posts/female-entrepreneurship-in-italy-let-the-data-speak-for-themselves-d830094d7c57.
[326] De Rosa, Serena. "Public Financing to Support Female Entrepreneurship in Italy." Rivista Piccola Impresa/Small Business 1 (2025): 151–170. https://journals.uniurb.it/index.php/piccola/article/view/4723/4489.
[327] Intesa Sanpaolo Innovation Center. "Female Entrepreneurship in Italy and Worldwide." October 17, 2023. https://www.intesasanpaoloinnovationcenter.com/en/news-and-events/news/2023/10/female-entrepreneurship-italy-world-innovators/.
[328] European Commission. Digital Economy and Society Index (DESI) 2022: Italy. July 28, 2022. https://www.astrid-online.it/static/upload/desi/desi_2022__italy__eng.pdf.
[329] S-Peek. "Female Entrepreneurship in Italy: Let the Data Speak for Themselves." March 8, 2022. https://blog.s-peek.com/en/posts/female-entrepreneurship-in-italy-let-the-data-speak-for-themselves-d830094d7c57.
[330] De Rosa, Serena. "Public Financing to Support Female Entrepreneurship in Italy." Rivista Piccola Impresa/Small Business 1 (2025): 151–170. https://journals.uniurb.it/index.php/piccola/article/view/4723/4489.
[331] Ibid.

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BEST PRACTISES BOX: Notable Female Tech Entrepreneurs

Italy's entrepreneurial landscape is increasingly shaped by innovative women, particularly in the tech and research and development sectors. Examples include:

Sonia Longo Sormani: Founder of Aileens Pharma, Founder of a biotech company focused on developing solutions for inflammatory skin conditions.

Stefania De Roberto: Co-founder of Filo, a company developing IoT technology, including Bluetooth trackers and car seat alarm systems.

Mirna Pacchetti and Marzia Di Meo: co-founders of Intribe, an innovative startup utilising AI and gamification for real-time market surveys.

Rebecca Zaccarini: Founder of a sustainable startup RECUP+ combating food waste by recycling edible food into pet food flour.

Caterina Siclari: Senior Partner and Head of the Startup Recovery Fund, with a background in venture capital and space technology.

Isabelle Andrieu: Co-founder and Chairwoman of Translated, and CEO of Pi School, impacting technology and education sectors through innovation.

Diana Saraceni: Co-founder and General Partner of a venture capital firm Panakes Partners focused on nurturing innovative early-stage medical companies.

Key insights & Trends

Access and Affordability:

- Italy ranks low in the EU for basic digital skills, with only 45.8% of the population possessing them, a figure that has been stagnant since 2021. A persistent access gap is evident, with 10% of women reporting they have never used the internet, compared to 8% of men, and this disparity is particularly pronounced among older women (65+) and those in Southern Italy. While affordability is a barrier, Italy is an outlier where a slightly higher percentage of men (2.1%) report being unable to afford an internet connection compared to women (2%).

Digital Skills and Education:

- The digital skills deficit is a major challenge in Italy. The gender gap in skills is most pronounced among individuals over the age of 55, even though, anecdotally, girls in adolescence may be more digitally active than their male peers. This trend reverses with age, as women face barriers rooted in societal roles and a lack of perceived

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relevance of technology. Education is a critical factor, with a major gap in higher education. Only 1.7% of women hold an ICT degree, compared to 8.2% of men, placing Italy last (27th) among EU countries for female ICT graduates.

Gendered Usage Patterns:

- Disparities in how digital tools are used are a central issue. Women are more likely to engage in passive online activities like consuming content and communicating via messaging apps, while men tend to perform more active or creative tasks, such as content creation, coding, or managing digital services. This "usage divide" is especially pronounced among marginalized women—including the unemployed, rural residents, and older homemakers—who often lack the confidence to use ICT for empowering tasks like online banking or job searches.

Workforce and Leadership:

- Women are severely underrepresented in Italy's digital labor market. They constitute only 16% of all ICT specialists and 19% of engineering roles. This imbalance is further pronounced in leadership, where women hold only 23.1% of senior and middle management positions, and their representation in advanced digital roles like cloud computing and data science is also very low.

Innovation and Entrepreneurship:

- Women-led businesses are a vital part of Italy's economy, making up 22.2% of all businesses and contributing 21% of the national GDP. A positive trend is the 40% increase in the number of women-led innovative startups in the last two years. However, a significant "taste-based discrimination" exists in funding, where women are charged higher interest rates for credit despite having lower bankruptcy rates and better credit histories than men. This bias is so pronounced that a female borrower with a female guarantor is perceived as the "absolute worst possible borrower."

Digital Violence:

- A specific form of digital exclusion in Italy is linked to technology-facilitated gender-based violence (TFGBV), which includes cyberstalking and gender hate speech. Women, particularly those who are digitally illiterate or socially disadvantaged, are more vulnerable to this abuse, as they are less equipped to recognise, manage, or report online harassment.

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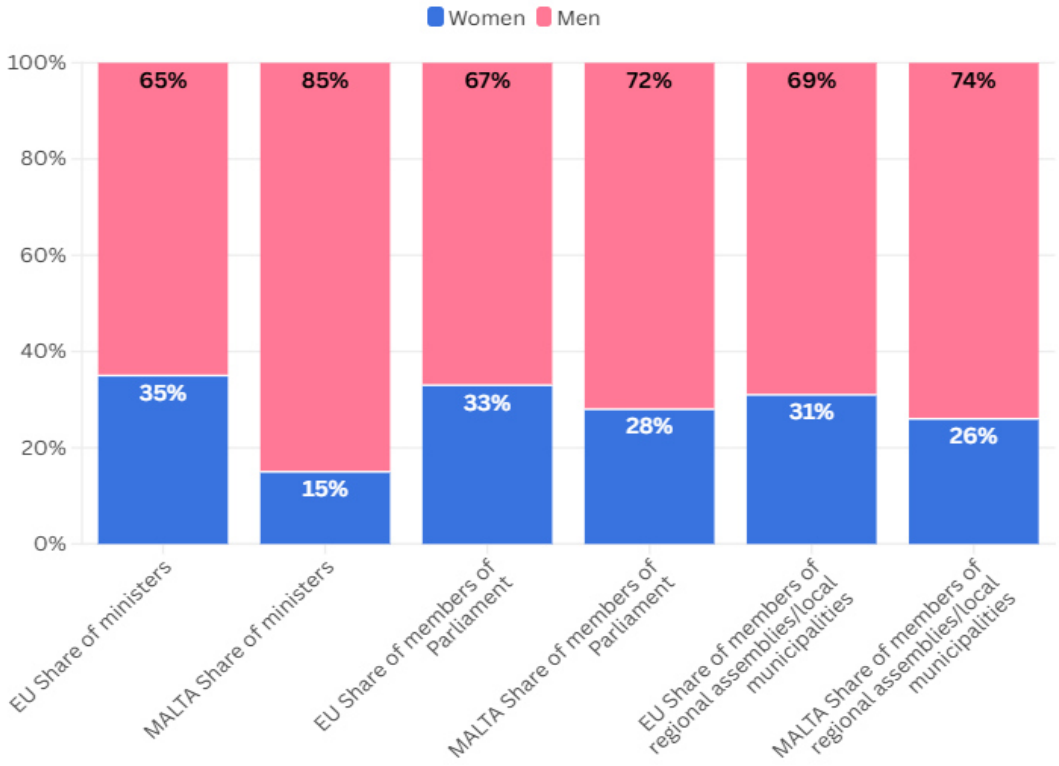
Malta

Context

Malta has shown one of the strongest advances in gender equality within the EU. According to the Gender Equality Index 2024, the country reached a score of 70.1%, ranking among the top three for progress since the last edition. Between 2023 and 2024, Malta gained 2.3 points, and since 2010 it has improved by 15.7 points overall, yet it still sits slightly below the EU-27 average of 71%.[332] The greatest driver of this improvement has been in the domain of power, where women's participation in economic and political decision-making has grown. Still, wide gaps remain: in 2024, women held just 15% of senior and junior ministerial positions, a drop of 5 percentage points from the previous year, and the third lowest rate in the EU, 20 points below the average. In parliament, women occupy only 28% of seats, a figure unchanged since 2023. Malta lacks a legislative quota for candidate lists but applies a "gender corrective" mechanism, whereby if less than 40% of parliamentarians are from the underrepresented gender, up to 12 additional seats are allocated accordingly.[333]

Chart 22: Percentage representation of women and men in selected government positions in 2024, Malta and the EU



Source: [Gender Equality Index 2024]

[332] European Institute for Gender Equality (EIGE). Gender Equality Index 2024: Tackling Violence Against Women, Tackling Gender Inequalities. Luxembourg: Publications Office of the European Union, 2025.
. https://eige.europa.eu/gender-equality-index/2024/ES
[333] Ibid.

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Malta's digital transformation is guided by the Malta Diġitali Strategy 2022–2027, the country's flagship framework aligned with EU priorities such as the Digital Compass 2030, AI Act, and Cybersecurity Strategy. It sets out four overarching goals: enabling citizens and businesses, transforming government services, building digital capacity, and ensuring inclusion and trust.

The strategy uses a persona-based model to identify groups at risk of digital exclusion, including elderly persons, students, young adults, Vulnerable groups and digitally excluded persons, rural residents, economically inactive women, and persons with low literacy. Action #4 specifically commits to encouraging girls and women to pursue digital careers through incentives and interministerial cooperation. While it lacks a standalone gender chapter, it acknowledges systemic challenges of online violence, inequality, and exclusion. As an umbrella policy, Malta Diġitali coordinates related strategies such as the AI Strategy, eSkills Strategy, and Digital Education Strategy. Gender inclusion is further embedded in Malta's Gender Mainstreaming Strategy and Action Plan (2022–2027), which requires gender impact assessments, monitoring indicators, and departmental equality action plans across ministries. Although not digital-specific, it strengthens accountability for gender equality in ICT, STEM, and digitalisation.

The AI Strategy (2019) aimed to position Malta as a "testbed" for ethical AI adoption across sectors, with strong focus on public and private use, workforce development, and legal frameworks. The strategy is now under revision (2025) to align with EU AI regulations.

In 2025, the MDIA launched a call for proposals to enhance digital skills, explicitly including women and girls as a target group.

Malta's Digital Decade Strategic Roadmap 2023-2030 serves as the main tool for implementing EU digital and gender targets. It sets commitments for digital skills, SME digitalisation, and gender convergence in ICT professions.

Complementary strategies – the eSkills Strategy (2022-2025), the Digital Education Strategy (2024–2030), and the National Employment Policy (2021-2030) – all address gender disparities indirectly, mainly through digital literacy initiatives, labour market reforms, and inclusive pedagogy.

Malta and its Digital Approach: A Gender Perspective

Malta's digital transformation is strongly shaped by EU frameworks, but its policies reveal both progress and persistent gender gaps. The flagship Malta Diġitali Strategy 2022–2027 provides an overarching roadmap for inclusion and innovation, explicitly identifying vulnerable groups such as the elderly, rural residents, low-literacy persons, and economically inactive women. Action #4 focuses on encouraging girls and women to pursue careers in ICT and STEM. Yet, the absence of a dedicated gender chapter means gender equality is mainstreamed only indirectly, often as one persona among many.

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Malta has recognised that digital exclusion is not uniform but intersectional. Women in rural areas, older women, and economically inactive women remain among the most digitally excluded groups. This is compounded by issues such as online gender-based violence and structural barriers like time poverty, which the strategy only partially addresses.

The strategy also lays the foundation for other sectoral frameworks, such as the forthcoming revisions of the AI strategy, eSkills strategy, and Digital Education Strategy, positioning Malta Diġitali as a coordinating umbrella that informs national digital governance across ministries and agencies. As a coordinating umbrella, Malta Diġitali links with the AI Strategy, eSkills Strategy, and Digital Education Strategy, ensuring gender considerations are not siloed but diffused across multiple policies.

The Gender Mainstreaming Strategy and Action Plan (2022–2027) goes further in institutionalising gender accountability. It mandates gender impact assessments, gender budgeting, and equality focal points in every ministry. This provides tools for holding digital policies accountable to gender equality standards, although monitoring of ICT/STEM remains inconsistent.

The AI Strategy (2019) initially positioned Malta as an AI "testbed", promoting ethics, innovation, and regulation. Gender issues were addressed only implicitly, in terms of inclusivity and skills, without measurable targets. The upcoming AI Strategy revision (2025) represents a critical opportunity to integrate gender-disaggregated monitoring, bias mitigation, and explicit measures against technology-facilitated gender-based violence.

The Digital Decade Strategic Roadmap (2023–2030) is Malta's formal mechanism for meeting EU digital and gender goals. It sets measurable targets for digital skills and gender convergence in ICT professions. However, while KPIs are introduced, gender-disaggregated outcomes remain limited, making it difficult to evaluate real progress for women.

Other complementary strategies reflect Malta's gradual but uneven integration of gender in the digital sphere:

- The eSkills Strategy (2022–2025) promotes inclusivity but lacks a gender chapter, despite acknowledging stagnation in women's ICT participation.
- The Digital Education Strategy (2024–2030) commits to inclusive pedagogy and early digital literacy, but gender is framed mostly through access equality, not curriculum transformation.
- The National Employment Policy (2021–2030) and Smart Specialisation Strategy (2021–2027) highlight women in innovation-driven sectors, but concrete incentives and structural reforms remain underdeveloped.

In 2025, the MDIA issued a call for proposals to enhance digital skills for four target groups, with women explicitly included as Group 2. This represents a tangible effort to bridge skills gaps through partnerships with businesses and NGOs.

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EU Policy Implementation at National Level

Malta's national strategies increasingly align with EU digital and gender equality agendas such as the Digital Decade Policy Programme (DDPP) 2030, the EU Gender Equality Strategy 2020–2025, the Women in Digital Declaration (2019), and the evolving EU framework on Artificial Intelligence. While commitments at the vision level are clear, translation into concrete mechanisms and measurable gender outcomes remains uneven.

The Digital Decade Strategic Roadmap (2023–2030) is Malta's key tool for DDPP implementation. It sets national targets, including:

- 80% of adults with basic digital skills by 2030,
- gender convergence in ICT professions,
- digitalisation of SMEs and public services,
- targeted initiatives such as Women4IT and Digital Skills Bootcamps.

The roadmap is directly linked to EU governance, introducing KPIs on gender balance, but concrete gender-disaggregated monitoring is still limited.

The Malta Diġitali Strategy (2022–2027) acts as a broad framework for digitalisation. It references EU initiatives (Digital Compass, AI Act, Cybersecurity Strategy) and introduces a persona-based model for tackling digital exclusion.[334] Among its target groups are women and girls, with Action #4 promoting STEM careers. However, the strategy lacks a dedicated gender chapter, making gender issues secondary to broader inclusion goals.

The Gender Mainstreaming Strategy and Action Plan (2022–2027) is Malta's clearest institutional mechanism for aligning with the EU Gender Equality Strategy. It introduces gender impact assessments, equality focal points, and gender budgeting, offering tools to ensure digital and STEM policies are gender-sensitive. Still, implementation in ICT-specific areas remains inconsistent.

Malta also signed the Women in Digital (WiD) Declaration, committing to close gender gaps in education, participation, and careers. In practice, this has included:

- training 87 women via Women4IT,
- gender-focused bootcamps,
- adding female inclusion targets in eSkills and Malta Diġitali strategies.

The National eSkills Strategy (2022–2025) highlights inclusivity and acknowledges stagnant female participation in ICT, yet it lacks specific gender measures. Current data show 18.2% of ICT specialists in Malta are women (vs 19.2% EU average), and women make up only ~2% of total ICT employment, signalling limited progress.

The Digital Education Strategy (2024–2030) aligns with the EU's Action Plan and promotes inclusive pedagogy from early years. While not gender-specific, it aims to close gaps by

[334] *Malta Diġitali: Digital Transformation.* 2022. Accessed September 2025. https://www.maltadigitali.mt/digital-transformation/

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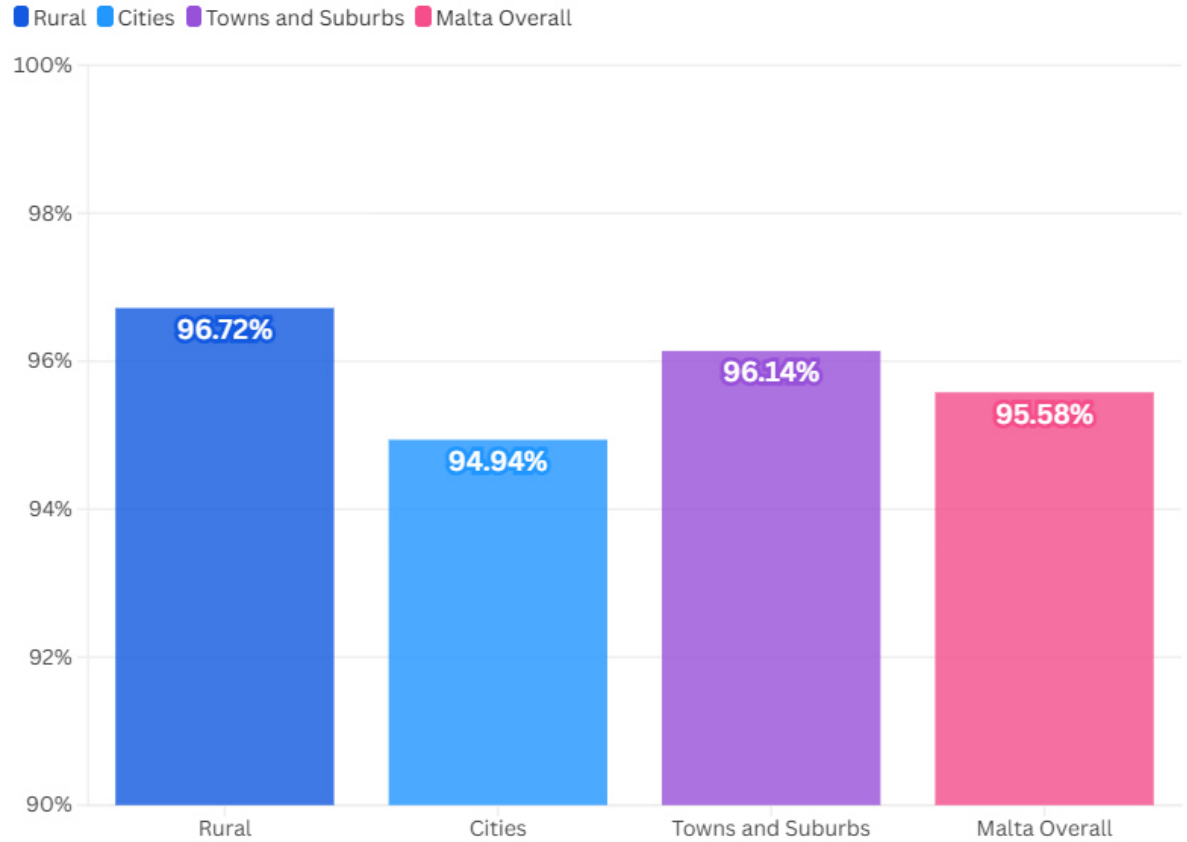
integrating digital literacy and equitable access for all learners. Other frameworks, such as the National Employment Policy (2021–2030) and Smart Specialisation Strategy (2021–2027), call for higher female participation in STEM and ICT. However, these policies lack strong incentives and concrete reforms to make this happen.

Access Layer of the Digital Gender Gap

According to the Women in Digital (WiD) Scoreboard 2024, Malta ranks 8th out of 27 EU Member States, placing the country in the top third of the EU27 ranking, with an overall WiD index score of 62.2 - well above the EU average of 55.7. This relatively strong position is supported by high internet usage among women (93% vs 90% of men) and a respectable score in internet user skills (63% for both men and women). However, this engagement does not yet translate into full parity in digital access, skills, and usage.

Chart 23: Digital accessibility in households, 2024, Malta



Source: Eurostat, 2024

The overall state of digital access in Malta is highly advanced. Internet penetration has effectively reached full coverage, positioning Malta at the top among the partner countries.[335] Since 2021, Malta is the only EU country with full VHCN coverage, with Fibre-to-the-Premises

[335] European Commission. "Broadband internet coverage by technology". 2025. https://ec.europa.eu/eurostat/databrowser/view/isoc_cbt__custom_17771903/default/table

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(FTTP) reaching 69.6% of households, slightly above the EU average.[336] Uptake of very fast broadband remains low, with just 11.7% of subscriptions providing 1 Gbps in 2023 compared to the EU average of 18.5%.[337] All three operators now ensure nationwide 5G coverage, but deployment in the key 3.4–3.8 GHz band lags behind, reaching only 24.7% versus 50.6% in the EU.[338]

As of January 2025, over 93% of the population were active internet users, showing that digital connectivity has become almost universal across the country.[339] This high level of digital engagement is further reflected in the number of mobile connections, which exceeded 781,000, equivalent to 144% of the population.[340] This indicates that many people in Malta use more than one SIM card or mobile subscription, highlighting the central role that mobile technologies play in everyday communication and access to digital services.[341] Only 5,7% of the population never used the internet.[342]

Table 20: Persons who cannot afford internet connection for personal use at home

Malta Persons who cannot afford internet connection for personal use at home by sex, age, degree of urbanisation and educational attainment	**EU total** (Euro area 20 countries) 2023	**EU Women (%)**	**EU Men**	**Men**	**Women (%)**
Total (Euro area 20 countries) 2023	1.1%	1.5%	1.7%	1.1%	1.2%
Cities	1.7%	1.6%	1.6%	1.1%	1.8%
Towns and suburbs 2024	1.7%	1.6%	1.7%	1.0%	0.2%
Rural areas	1.3%	1.3%	1.4%	0.2%	0.0%

Source: Eurostat 2024

Accessibility is also defined by its prices, looking at the percentages of people who cannot afford internet in their homes, Malta with its overall 1.1% ranks better than Spain (1.4%) and

[336] European Commission. "Malta 2024 Digital Decade Country Report". July 2024. Accessed September 2025. https://digital-strategy.ec.europa.eu/en/factpages/malta-2024-digital-decade-country-report
[337] Ibid.
[338] European Commission. Digital Decade Country Report 2024: Malta. Accessed September 2025. https://digital-strategy.ec.europa.eu/en/news/commission-opens-depth-investigation-proposed-regulation-wholesale-broadband-market-malta
[339] Datareportal. "Digital 2025: Malta". March 2025, Accessed September 2025. https://datareportal.com/reports/digital-2025-malta#:~:text=Internet%20use%20in%20Malta%20in,the%20start%20of%20the%20year.
[340] Datareportal. "Digital 2025: Malta". March 2025, Accessed September 2025. https://datareportal.com/reports/digital-2025-malta
[341] Datareportal. "Digital 2025: Malta". March 2025, Accessed September 2025. https://datareportal.com/reports/digital-2025-malta
[342] The National Statistics Office."ICT Usage by Households: 2024". March 2025. Accessed September 2025. https://nso.gov.mt/information-and-communications/ict-usage-by-households-2024/

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Italy (2%).[343] Interestingly the percentages of people who cannot afford internet are higher in cities (1.4%) than in towns and suburbs (0.7%)[344] and rural areas (0.1%)[345]. When looking at gender gap in internet accessibility the biggest gap can be seen in cities, where 2% of women cannot afford the internet in contrast to 1,5% of men.[346] On the other hand, in rural areas and towns, is the internet more accessible for women than men. In town 1% of men vs 0,6% of women can't afford the internet and in rural areas 0.0% of women in contrast to 0,2% men.[347] This counterintuitive trend may reflect urban cost-of-living pressures; housing, utilities, and services are generally more expensive in urban centers, potentially squeezing budgets and making even moderate internet fees harder to manage. In rural areas, while affordability seems better, this may mask more pressing issues like limited coverage or slower speeds rather than cost per se. In towns and rural areas, women's relative affordability advantage may reflect gendered roles in household spending, differences in social support networks, or prioritisation of internet access for women (e.g., for educational or family communications).

Usage Layer of the Digital Gender Gap

Overall, Malta demonstrates strong digital inclusivity across gender, geography, and age, with only minor divides. The persistence of lower uptake among older men, and the remaining share of households without a computer, point to areas where targeted digital inclusion policies, such as skills training, affordability measures, or device access program, could further reduce inequalities.

When examining data from Malta, we can observe that gender differences in internet use by age are generally minimal among younger age groups but widen significantly with age. In the 16–24 and 25–34 cohorts, there is no gender gap or even a slight advantage for women (–1.72% in the 25–34 group, indicating higher internet use among women). Similarly, in the 35–44 age group, men slightly surpass women by 2.15 percentage points, while the 45–54 group shows only a minor male advantage of 1.15%. However, the most pronounced gap appears in the 55–74 age group, where 76.1% of men and 69.2% of women use the internet, a difference of 6.9 percentage points, suggesting that older women remain significantly less digitally connected. These results indicate that while gender equality in internet usage has been nearly achieved among younger generations in Malta, age and gender intersect to create a widening digital divide among older adults, particularly disadvantaging women over 55.

[343] Eurostat. "Persons who cannot afford internet connection for personal use at home by sex, age, degree of urbanisation and educational attainment 2024." Accessed September 2025. https://ec.europa.eu/eurostat/databrowser/bookmark/28c05bb2-786c-42ea-8561-8b8a38ca7117?lang=en&createdAt=2025-08-26T14:57:11Z

[344] Eurostat. "Persons who cannot afford internet connection for personal use at home by sex, age, degree of urbanisation and educational attainment 2024." Accessed September 2025. https://ec.europa.eu/eurostat/databrowser/bookmark/28c05bb2-786c-42ea-8561-8b8a38ca7117?lang=en&createdAt=2025-08-26T14:57:11Z

[345] Eurostat. "Persons who cannot afford internet connection for personal use at home by sex, age, degree of urbanisation and educational attainment 2024." Accessed September 2025. https://ec.europa.eu/eurostat/databrowser/bookmark/28c05bb2-786c-42ea-8561-8b8a38ca7117?lang=en&createdAt=2025-08-26T14:57:11Z

[346] Insee - National Institute of Statistics and Economic Studies - Measuring, understanding.Statistics on income and living conditions 2023." Accessed Semptember 2025. https://www.insee.fr/en/metadonnees/source/operation/s2160/presentation

[347] Ibid.

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Table 21: Internet use by age (daily or almost daily)

Internet use (daily or almost daily) Malta 2024	Women	Men	Gap
Internet Use by Age 16y –74y	92.17%	91.20%	0,97%
Internet Use by Age 16y –24y	100%	100%	0%
Internet Use by Age 25y –34y	98.28	100%	-1,72%
Internet Use by Age 35y-44y	99,49%	97,34	2,15%
Internet Use by Age 45y-54y[348]	96.52%	95.37%	1,15%
Internet Use by Age 55y–74y	76.10%	69.20%	6,9%

Source: Eurostat, 2024

Malta in comparison to Italy, Czechia, and Spain, has the highest share of people aged 16–74 participating in social networks (creating user profiles, posting messages or other contributions on Facebook, Twitter, etc.), with its 76.65% of users it exceeds the EU average of 64.82%.[349] Interestingly, a closer look at how internet use translates into online participation, specifically through engagement on social networks, reveals a more complex, gendered pattern. Overall, 77.34% of women and 76.06% of men in Malta participate in social networks, showing a small female advantage (+1.28%). Yet, this aggregate hide striking differences across age groups. Among the youngest users (16–24 years), women lead by 3.83 percentage points, and the gap widens further in the 25–34 and 35–44 cohorts, reaching 7.4% and a remarkable 13.45%, the largest gender gap in favour of women across all age categories. This suggests that younger and middle-aged women in Malta are more socially active online than men, possibly reflecting gendered patterns of digital communication and community engagement. However, this trend reverses in later life: in the 45–54 age group, men slightly surpass women (–0.68%), while in the 55–64 cohort, women again take the lead with 8.89% more social media users than men. By the 65–74 group, the gender gap nearly disappears (37.87% vs. 36.39%).[350]

Taken together, these findings show that internet use in Malta is strongly age-dependent and moderately gendered: while men and women under 45 are almost equally connected, women tend to dominate social media use in younger and middle age, whereas older women remain less likely to be internet users overall. The digital divide in Malta is therefore not uniform, it shifts from access-related among older generations to usage-pattern-related among younger

[348] Eurostat. "Individuals - frequency of internet use 2024." Accessed Semptember 2025. https://ec.europa.eu/eurostat/databrowser/bookmark/adc2e61d-e1d5-47e5-a3f4-9977235e693d?lang=en&createdAt=2025-09-29T21:26:00Z

[349] Eurostat. "Individuals - internet activities 2024." Accessed September 2025. https://ec.europa.eu/eurostat/databrowser/bookmark/2c1f4b62-e1aa-4977-8d24-65b6c840327e?lang=en&createdAt=2025-09-16T22:35:11Z

[350] Eurostat. "Individuals - internet activities 2024." Accessed September 2025. https://ec.europa.eu/eurostat/databrowser/bookmark/31641528-2b7f-4fde-aec0-d99e3d3e0269?lang=en&createdAt=2025-09-09T14:46:52Z

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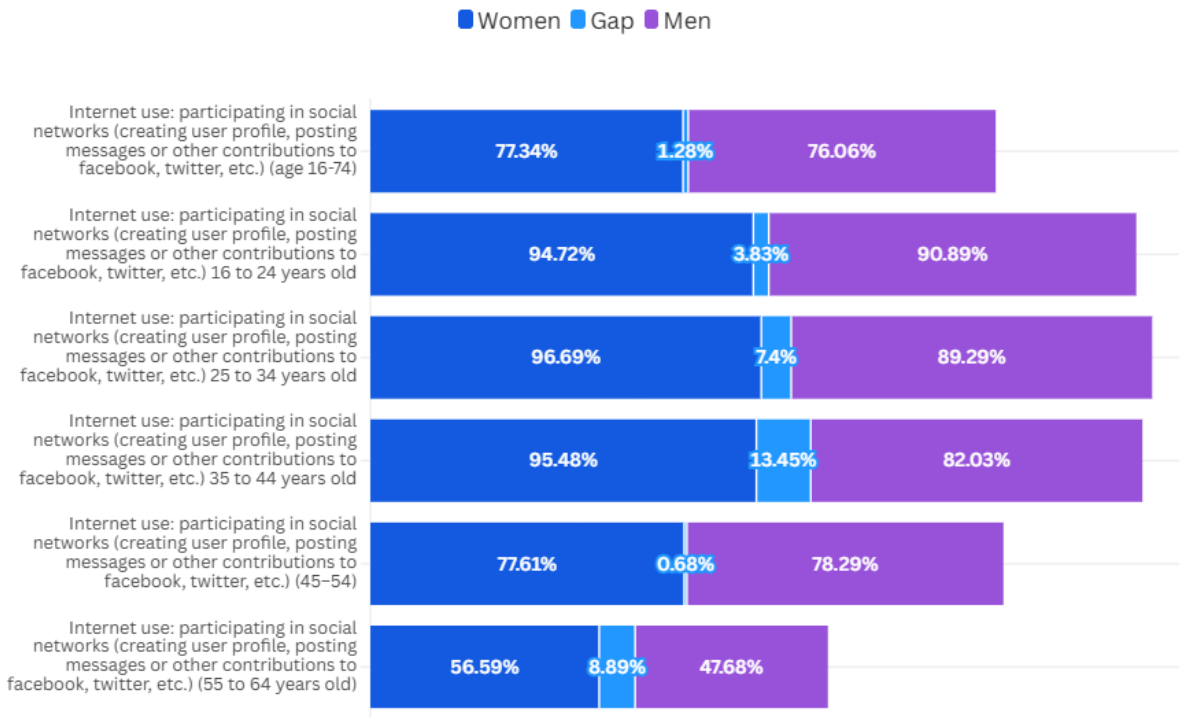
ones, underscoring the need to consider both age and gender when addressing digital inclusion policies.[351]

Chart 24: Internet use: Participating in social media



Source: Eurostat 2024

Internet use in Malta is nearly universal among younger generations: almost all individuals aged 16–44 reported being online, while usage among older adults (65–74) was considerably lower at 70.2%. Overall, 93.3% of the Maltese population used the internet in 2024, slightly above the EU average of 92.8%.[352]

Communication remains the primary purpose of internet use, with 98.1% of individuals using it to stay connected. Entertainment activities such as streaming films, music, and other leisure content followed closely at 94.6%. Gender differences are minimal, though women (98.5%) slightly outpace men (97.8%) in communication use.[353]

E-Government services are increasingly popular, with uptake rising by 6.9% between 2023 and 2024. In 2024, 81.1% of internet users accessed government services online, with the

[351] Eurostat. "Individuals - internet activities 2024." Accessed September 2025. https://ec.europa.eu/eurostat/databrowser/bookmark/31641528-2b7f-4fde-aec0-d99e3d3e0269?lang=en&createdAt=2025-09-09T14:46:52Z

[352] Balzan Jurgen. "Over 90% of Maltese aged 16-74 used internet in 2024, survey reveals." *Newsbook.com*. -March, 2025.Accessed Sempember 2025. https://newsbook.com.mt/en/nine-out-of-ten-maltese-aged-16-74-used-internet-in-2024-survey-reveals/

[353] Balzan Jurgen. "Over 90% of Maltese aged 16-74 used internet in 2024, survey reveals." Newsbook.com. -March, 2025.Accessed Sempember 2025. https://newsbook.com.mt/en/nine-out-of-ten-maltese-aged-16-74-used-internet-in-2024-survey-reveals/

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highest use among those aged 16–54. Online shopping was also widespread: 66.1% of internet users engaged in e-commerce, most frequently among 25–44 year-olds (57.6%). The most common purchases were food deliveries (more popular among men) and clothing (more popular among women).[354]

Internet-connected devices are becoming a fixture in Maltese households. By 2024, 84.5% of users owned a smart TV, while 32.8% reported using a smartwatch or fitness band. Men were more likely to adopt these devices, prioritising hardware, brand, and design when purchasing, while women were more price-conscious. Around 40% of buyers considered energy efficiency, and 30% paid attention to eco-design features.[355]

Daily internet use highlights the age divide: 99.3% of young people aged 16–24 went online every day or almost every day, compared to just 60.9% of older adults aged 65–74. Men were more engaged in online gaming and tech device use, while women were more active in purchasing clothes and cosmetics online.[356]

Skills

Malta has achieved 63.0% basic digital skills coverage, growth comparing to 61.2% in 2023 and way above the EU average of 55.56%. According to the Digital Decade report 2025, the percentage of ICT specialists in employment has reached 5.2% surpassing the EU average - 5%. The share of female specialists in 2024 was 14.7%. Malta performs very well on the uptake of AI and digitalisation of businesses, while there is room to further expand the pool of ICT specialists. The country is a top performer in the digitalisation of public services.[357]

As in many EU countries, digital access does not automatically equate to digital empowerment. Regular internet use among women (93%) does not guarantee the ability to critically assess online information, safeguard personal data, or use digital tools for education, health, or civic engagement, although it can be deduced that Maltese women (score of 80 in 'Use of Internet') fare well above the EU average (Score of 65). These deeper competencies- associated with what EIGE calls *life-enhancing digital inclusion* - are often lacking among women with low formal education or those outside the labour market. Meaning, while Malta has done considerable progress in putting women back in employment, encouraging the use of internet and digital tools and making these accessible, all the while sustaining this encouragement through the digitalisation of public services and initiatives such as 'one device per child', much still needs to be done when it comes to higher competencies, and high-level roles for women in the digital field, and in bringing housemakers and women from rural regions on a level playing field.

[354] Ibid

[355] Ibid.

[356] Ibid.

[357] Balzan Jurgen. "Over 90% of Maltese aged 16-74 used internet in 2024, survey reveals." Newsbook.com. -March, 2025.Accessed Sempember 2025. https://newsbook.com.mt/en/nine-out-of-ten-maltese-aged-16-74-used-internet-in-2024-survey-reveals/

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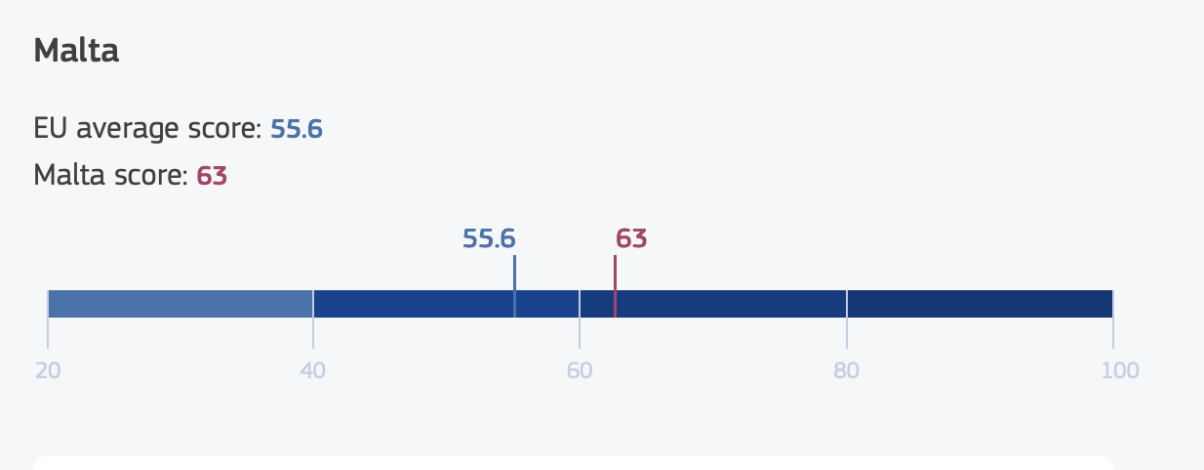
Figure 5: At least basic digital skills (% of individuals aged 16-74)



Source: EU Digital skills & jobs platform

Digital skills remain crucial to ensure that Maltese citizens have access to and make use of the available digital infrastructure to achieve the Digital Decade targets. Several initiatives have been implemented in recent years to incentivise individuals to attain at least basic digital skills, and to enhance levels of ICT employment. In 2023, Malta remained above the EU average, with 63% of the population having basic digital skills compared to the EU average of 55.6%. The shortage of digital skills is partly addressed by Malta's National e-Skills Strategy 2022-2025 which provides a framework for evaluating existing initiatives and introducing new ones, to promote basic and above basic digital skills and tools that can translate into increased employment. Malta is a leader in the provision of key digital public services and performs very well in the implementing and giving access to electronic health records.[358] Although Malta performs well in this indicator, the annual growth is low compared to other KPIs.[359]

Table 23: At least basic digital skills

Indicator	Men	Women
At least basic digital skills (age 16–74)	62,74	63,33
At least basic digital skills (16 - 24 years)	94,96	97,31
At least basic digital skills (age 25-34 years)	86,65	86,47
At least basic digital skills (age 35- 44)	63,45	76,00
At least basic digital skills (age 45-54)[360]	51,29	60,68

[358] European Commission. "Malta 2024 Digital Decade Country Report". July 2024. Accessed September 2025. https://digital-strategy.ec.europa.eu/en/factpages/malta-2024-digital-decade-country-report
[359] European Commission. "Malta 2024 Digital Decade Country Report". July 2024. Accessed September 2025. https://digital-strategy.ec.europa.eu/en/factpages/malta-2024-digital-decade-country-report
[360] Eurostat. Individuals' level of digital skills (from 2021 onwards) 2023." Accessed April 2025.

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At least basic digital skills (age 55-74)	34,95	25,49
No overall digital skills (age 16-17)	1.53%[361]	1.13%[362]

Source: Eurostat 2024

In Malta, overall digital skills among adults (16–74) are relatively high compared to the EU average, with 63.3% of women and 62.7% of men possessing at least basic digital skills, a slight female advantage. This pattern is particularly strong among younger age groups: women aged 16–24 outperform men (97.31% vs 94,96.0%), and gender parity is maintained among 25–34-year-olds. However, the gender gap widens in favour of women in mid-age groups (35–54), where the difference reaches over 12 percentage points in the 35–44 category (76% women vs 63.45% men). Conversely, the pattern reverses among older adults (55–74), where men are significantly more skilled (34.95% vs 25.49%), reflecting generational differences in access and exposure to digital technologies.

When compared with the EU averages, both Maltese men and women perform well above the EU level in basic digital skills (62,74% of men and 63,33% of women in Malta vs 56.69% for men and 54.46% for women). Yet, similar to the EU trend, the proportion of individuals with above-basic digital skills remains lower, and gender gaps persist, particularly among older groups.[363]

A big impact on individuals' levels of digital skills could also be seen by their level of formal education. The higher the level of formal education attained, the higher the share of people with at least basic digital skills, varying between 80 % for those with high formal education and 34 % for those with no or low formal education. Malta ranks the 4th biggest gaps between those with high or low formal education in the share of people with at least basic digital skills with 59%.[364]

The gender gap in digital skills is most evident in the age groups 45–54 and 55–74, where the difference between women and men is approximately 0.55%.

https://ec.europa.eu/eurostat/databrowser/bookmark/49152554-0805-4626-8432-5b1807807ff3?lang=en&createdAt=2025-09-09T14:21:29Z

[361] Eurostat. Individuals' level of digital skills (from 2021 onwards) 2023." Accessed April 2025. https://ec.europa.eu/eurostat/databrowser/bookmark/49152554-0805-4626-8432-5b1807807ff3?lang=en&createdAt=2025-09-09T14:21:29Z

[362] Eurostat. Individuals' level of digital skills (from 2021 onwards) 2023." Accessed April 2025. https://ec.europa.eu/eurostat/databrowser/bookmark/49152554-0805-4626-8432-5b1807807ff3?lang=en&createdAt=2025-09-09T14:21:29Z

[363] Eurostat. Individuals' level of digital skills (from 2021 onwards) 2023." Accessed April 2025. https://ec.europa.eu/eurostat/databrowser/bookmark/49152554-0805-4626-8432-5b1807807ff3?lang=en&createdAt=2025-09-09T14:21:29Z

[364] Eurostat. "Skills for the Digital Age." Statistics Explained. European Union, April 2024. https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Skills_for_the_digital_age https://ec.europa.eu/eurostat/statistics-explained/index.php?oldid=627685#:~:text=In%202023%2C%2056%C2%A0,see%20Figure%201

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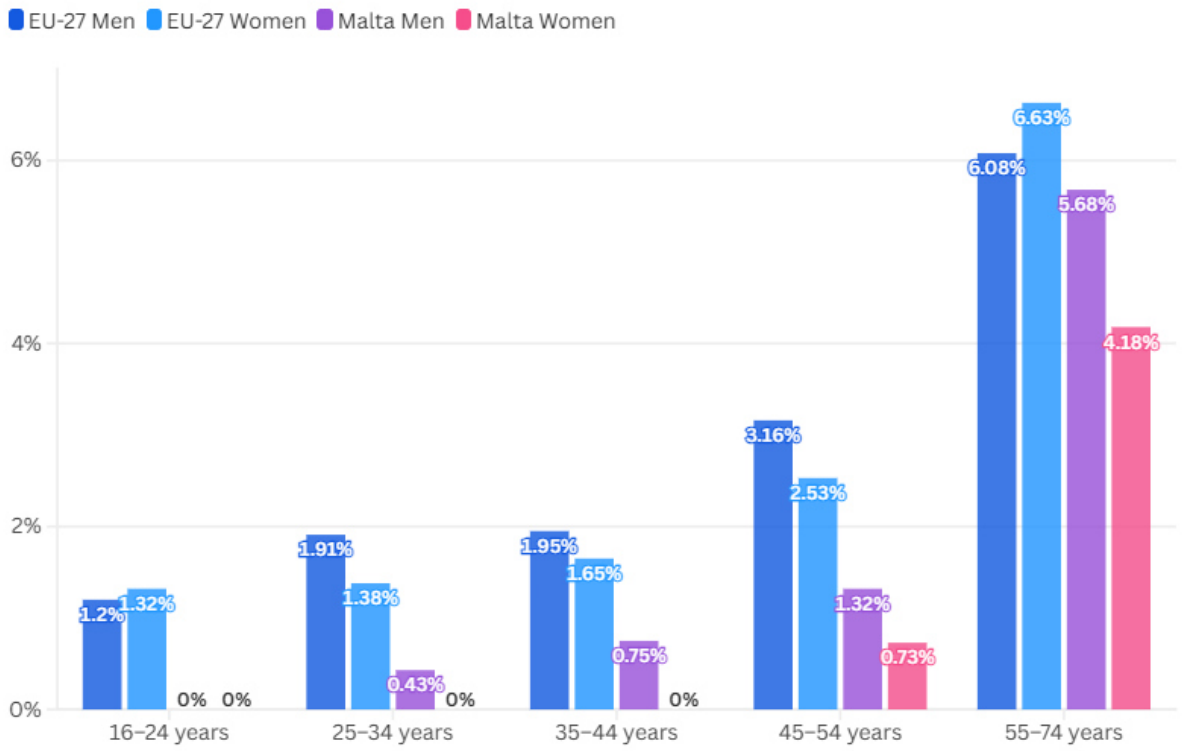
Chart 25: The gender gap in digital skills (Age/Gender), EU and Malta



Source: Eurostat 2024

In Malta, the gender gap between individuals with no basic digital skills follows a somewhat different trend in comparison to the EU average. There is full parity among the youngest group (16–24), but disparities begin to appear earlier and are more pronounced in mid- and older age groups. From the 25–34 age group onward, men consistently perform worse, with the largest gender gap observed among individuals aged 55–74 (1.5 percentage points), indicating that more Maltese men than women lack basic digital skills. This contrasts with the EU trend, where older women tend to be more digitally excluded. What is particularly striking is that the percentage of women aged 55–74 with no overall digital skills is four times higher than that of women aged 45–54. Among men, the share without overall digital skills triples when comparing the 45–54 and 55–74 age groups.[365]

Overall, while Malta performs better than the EU average in terms of lower overall digital exclusion, its age-gender interaction reveals that digital skill inequalities widen with age, but in a pattern that is inverted compared to the broader EU trend.

[365] Eurostat. "Individuals - internet activities 2024." Accessed September 2025. https://ec.europa.eu/eurostat/databrowser/bookmark/31641528-2b7f-4fde-aec0-d99e3d3e0269?lang=en&createdAt=2025-09-09T14:46:52Z

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Employment

The employment layer of the digital gender gap in Malta reflects persistent structural inequalities in education, research, and labour market participation, particularly in ICT and STEM fields. Malta's *National Research and Innovation Strategic Plan 2023–2027,* published by the Ministry for Education, Sport, Youth, Research, and Innovation, sets out measures to strengthen gender mainstreaming in research and innovation (R&I). The Plan explicitly recognises the challenges women face in pursuing science, technology, engineering and mathematics (STEM) studies and research careers, and highlights the importance of showcasing women role models in STEM(I). These efforts are aligned with the gender equality objectives of the European Research Area (ERA), the European Commission, and other EU Member States.

In 2024, women in the EU made up 19.5% of ICT specialists, while 80.5% were men. Malta, with only 14.7% female ICT specialists, has the second lowest share in the EU.[366]

Educational outcomes mirror this structural underrepresentation. Malta ranks 25th in gender balance in STEM graduation and 13th in ICT graduation[367], reflecting a persistent pipeline issue that has long-term consequences for digital labour force participation.[368] Although policy initiatives have been introduced to address this-from scholarships to mentorship and early STEM engagement for girls, progress remains uneven. These statistics must be considered in a wider context, given that the proportion of ICT specialist among the Maltese increased from 3.3% (of total employment) in 2013 to 4.8% in 2017 (triggered by a shift in domestic politics), but remained stagnant between 2017 and 2020, and decreased to 4.7% in 2023. Therefore, beyond systematic barriers for women and girls, negative externalities such as the Maltese political environment between 2017-2019, have further affected gender equality outcomes in Malta's ICT sector and contribute to its classification in the WiD 2024 Scoreboard.

[366] Valentin Evstatiev, Iliyan Tsveyn. "At 27%, Share of Female ICT Specialists in Bulgaria Third Highest in EU Last Year". July 2025. BTA.https://www.bta.bg/en/news/economy/925939-at-27-share-of-female-ict-specialists-in-bulgaria-third-highest-in-eu-last-yea

[367] European Commission. 2024. Women in Digital Scoreboard 2024. European Commission. Available at: https://digital-strategy.ec.europa.eu/en/news/women-digital-scoreboard-2024

[368] European Commission. 2024. Women in Digital Scoreboard 2024. European Commission. Available at: https://digital-strategy.ec.europa.eu/en/news/women-digital-scoreboard-2024

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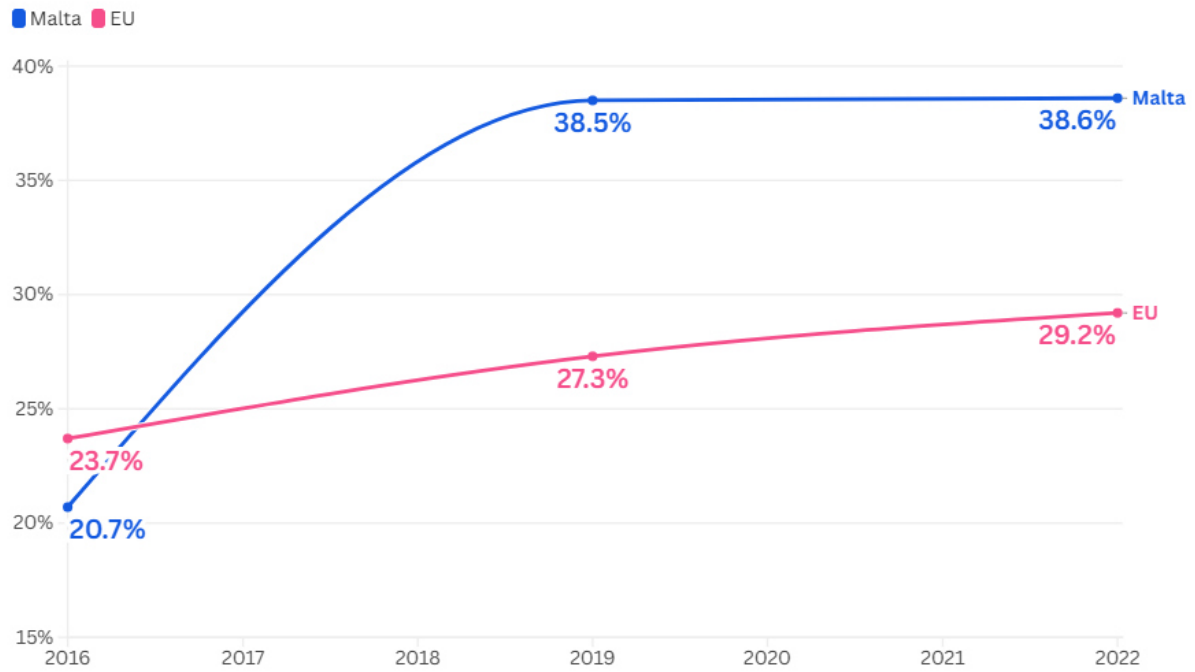
Chart 26: Proportion (%) of women among Grade A positions, 2016-2022.



Source: [*She figures 2024*]

Vertical segregation also remains a significant barrier. The proportion of women in decision-making roles in Malta, with their share of Grade A positions rising from 21% in 2016 to 39% in 2022, surpasses the EU-27 average. However, these data are not fully comparable, as the 2016 figures refer only to academic staff, while later years include researchers, whereas EU-level data consistently include both categories. Leadership gaps persist in higher education, where women accounted for only 25% of heads of institutions in 2022, slightly below the EU average of 26%. In reaction to the segregation and remaining inequalities in career progress, National Research and Innovation Strategic Plan 2023-2027 created a recommended target of at least 40% representation of women in key decision-making roles in R&I and gender-proofing of recruitment and promotion procedures in research organisations.[369]

[369] European Commission. She Figures 2024: Gender Equality in Research and Innovation – Malta. 2024. https://ec.europa.eu/assets/rtd/shefigures/2024/files/shefigures2024fiche-mt.pdf

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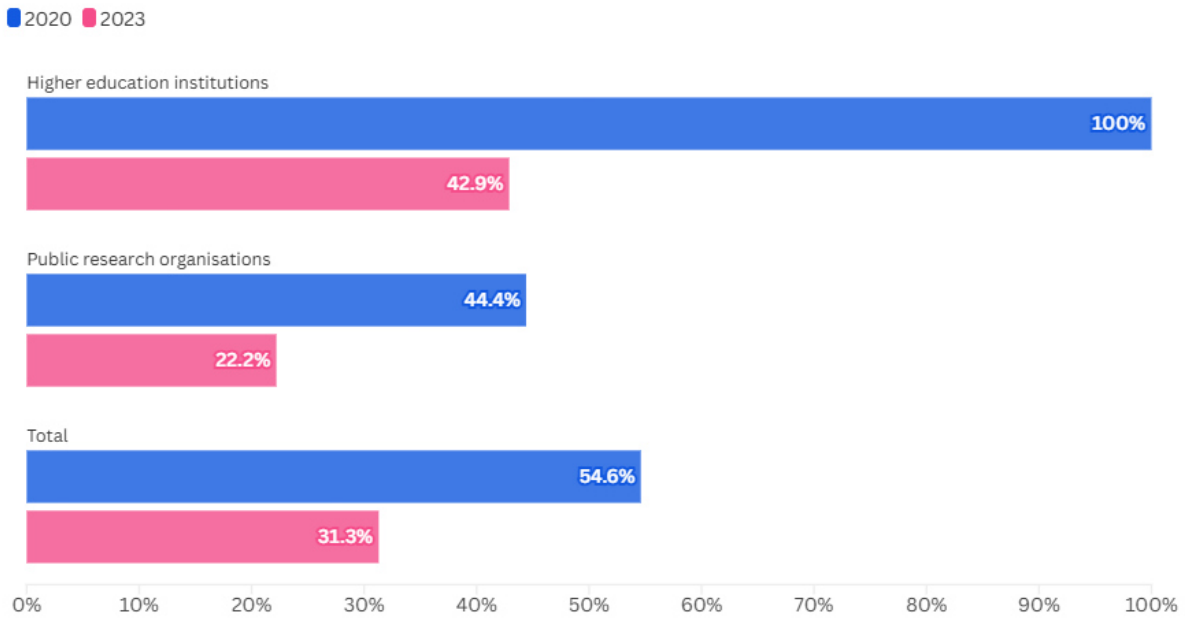
Chart 27: Proportion (%) of research organisations taking actions or measures towards gender equality, by type of organisation, 2020-2023, Malta and EU.



Source: She Figures 2024

The visibility of gender equality measures of institutions is similarly limited: in 2023, fewer than half of higher education institutions in Malta published gender-related actions, and the share of public research organisations doing so halved compared to 2020, although these findings are based on a small sample.[370] These figures illustrate not only the persistence of gender barriers across sectors and within hierarchies, but also the difficulties caused by irregular and inconsistent data collection. For example, doctoral graduate data are available only for 2013 and 2021, while Grade A data are collected irregularly. These limitations hinder the ability to monitor long-term progress or to compare Malta reliably with EU peers.[371]

Strengthening systematic data collection is thus crucial to evidence-based policy design and gender-sensitive monitoring within the employment and research layer of the digital gender gap. While Malta shows important progress in certain areas, particularly in government research and senior positions, the absence of regular, harmonised data undermines the capacity to evaluate whether these improvements are sustainable or to design targeted policies to address persistent inequalities.[372]

[370] European Commission. She Figures 2024: Gender Equality in Research and Innovation – Italy. 2024. https://ec.europa.eu/assets/rtd/shefigures/2024/files/shefigures2024fiche-it.pdf
[371] European Commission. She Figures 2024: Gender Equality in Research and Innovation – Italy. 2024. https://ec.europa.eu/assets/rtd/shefigures/2024/files/shefigures2024fiche-it.pdf
[372] European Commission. She Figures 2024: Gender Equality in Research and Innovation – Italy. 2024. https://ec.europa.eu/assets/rtd/shefigures/2024/files/shefigures2024fiche-it.pdf

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Educational outcomes mirror this structural underrepresentation. Malta continues to exhibit gender imbalance in STEM (25th) and ICT (13th) graduation rates, a critical pipeline issue that has long-term consequences for digital labour force participation.[373] Although policy initiatives have been introduced to address this-from scholarships to mentorship and early STEM engagement for girls - progress remains uneven. These statistics must be considered in a wider context, given that the percentage of ICT specialist among the Maltese increased from 3.3% (of total employment) in 2013 to 4.8% in 2017 (triggered by a shift in domestic politics), but remained stagnant between 2017 and 2020, and decreased to 4.7% in 2023. Therefore, beyond systematic barriers for women and girls, negative externalities such as the Maltese political environment between 2017-2019, and the Covid-19 pandemic must be considered to understand Malta's classification in the WiD 2024 Scoreboard.

One of the most pressing challenges is the lack of systematic and consistent gender-disaggregated data collection in research, innovation, and business. Although some data are available, they are often gathered irregularly and with varying methodologies. For instance, statistics on the share of women among doctoral graduates (ISCED 8) were collected only in 2013 and 2021, and even then, the samples differed in size. Similarly, information on women's representation in Grade A positions, the highest posts in academia and research, was collected only for 2016, 2019, and 2022. Yet the scope of these datasets is not fully comparable: Malta's 2016 figures cover only Grade A academic staff, while the 2019 and 2022 data include Grade A researchers; EU-level figures, in contrast, consistently encompass both researchers and academic staff. Such inconsistencies reduce the ability to track trends over time or compare Malta with other Member States reliably.[374]

Nevertheless, the available evidence points to progress. The share of women in Grade A positions rose from 21% in 2016 to 39% in 2022, exceeding the EU-27 average. This improvement suggests that change is possible, though without systematic data collection, it is unclear whether this reflects a sustained trend or an isolated gain.[375]

Ultimately, the absence of regular, harmonised data is not merely a technical issue. It constrains Malta's ability to design, implement, and assess effective gender equality measures in the field of innovation. Longitudinal, reliable data are crucial to identifying structural barriers, monitoring women's career trajectories, and ensuring that the objectives of the National R&I Strategic Plan can be properly evaluated. Without such evidence, women's contributions risk being overlooked, and policy responses may remain fragmented or insufficient.[376] Across the EU, women obtain research funding slightly less frequently than men, with success rates of 28% compared to 32%. Female representation among research authors has steadily

[373] European Commission. 2024. Women in Digital Scoreboard 2024. European Commission. Available at: https://digital-strategy.ec.europa.eu/en/news/women-digital-scoreboard-2024

[374] European Commission. She Figures 2024: Gender Equality in Research and Innovation – Malta. 2024. https://ec.europa.eu/assets/rtd/shefigures/2024/files/shefigures2024fiche-mt.pdf

[375] European Commission. She Figures 2024: Gender Equality in Research and Innovation – Malta. 2024. https://ec.europa.eu/assets/rtd/shefigures/2024/files/shefigures2024fiche-mt.pdf

[376] European Commission. She Figures 2024: Gender Equality in Research and Innovation – Malta. 2024. https://ec.europa.eu/assets/rtd/shefigures/2024/files/shefigures2024fiche-mt.pdf

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increased, reaching gender balance in fields such as Agriculture and Veterinary Science, Humanities and the Arts, Medical and Health Sciences, and Social Sciences. However, women continue to be significantly underrepresented in Engineering and Technology authorship. Between 2018 and 2021, women made up only 9% of patent applicants, underscoring their limited participation in inventorship. This proportion has remained relatively unchanged over the past decade, as most patents are still filed by exclusively male teams.[377]

BEST PRACTISES BOX:

One Tablet Per Child Malta

The initiative consists of the universal distribution of learning tools. Every student in the 4th year of primary school, across all schools in Malta, will be given a LearnPad Workbook 10.1″ tablet. The goal is for this technology to serve as a learning tool that could help achieve several educational objectives.

IT Literacy Skills for Job Compliance

This initiative is implemented by the Migrant Women Association Malta (MWAM) and the Malta Further and Higher Education Authority. The main goal is to equip students with an understanding of computers due to increasing employer demands for computer fluency. In addition to acquiring technological tools, the program also aims to develop students' knowledge about the requirements and procedures needed to work legally in Malta. The operational model for funding distribution involves an open call, proposal review, and subsequent funding disbursement to approved NGOs or providers.

Local and Regional Initiatives (Introductory Digital Literacy for Senior Citizens)

This example involves collaboration between Local Councils and organizations like eSkills Malta and The Foundation for Human Global Dignity. The purpose is to acquaint Maltese residents aged 60+ with fundamental skills for utilising tablets and smartphones, with a primary focus on internet use. A key objective is to enable seniors to access online government services (e-government) and e-ID. Special emphasis is placed on integrating basic computer security skills into the training sessions. This includes topics like protecting against common scams, making secure online purchases, and using online banking.

Private Sector Contributions (Women4IT)

This initiative involves the EU, the Government of Malta (Tech.mt, Malta Chamber of Commerce, Enterprise, and Industry), and private partners (CS Technologies). The main purpose is to increase female participation in digital jobs through tailored training and employability tools. The operational model is comprehensive, involving skills assessment, a training platform, onboarding, and providing mentorship with employers.

[377] European Commission. She Figures 2024. https://projects.research-and-innovation.ec.europa.eu/en/knowledge-publications-tools-and-data/interactive-reports/she-figures-2024

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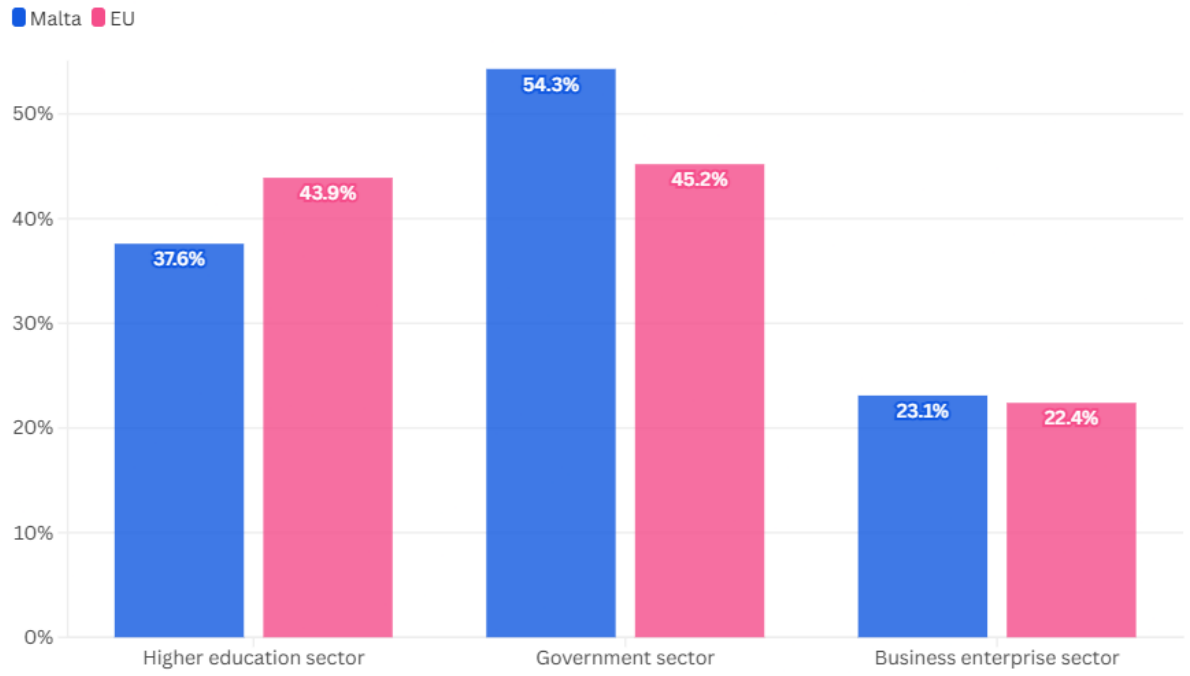
Innovation

Based on She Figures 2024, Malta ranks 24th in the Gender Equality Index for Research and Innovation, with an overall score of 62.8. The country shows relative strength in the area of career progression (9th place), while its performance is moderate in the Gender Dimension in Research and Innovation Content (16th) and across research sectors (18th). However, Malta performs considerably worse in terms of research participation (23rd), decision-making (24th), and segregation in the career pipeline (27th).

Gender segregation persists both horizontally (across sectors) and vertically (within hierarchies). Women's representation among doctoral graduates rose from 50% in 2013 to 59% in 2021, the second-highest share in the EU-27, though based on limited data. Among scientists and engineers, women make up 3.8% of the workforce, up from 2.3% in 2013, slightly above the EU average. In the government research sector, women's share increased from 32% to 54%, achieving gender balance by 2021. In higher education, it rose from 33% to 38%, below the EU average. In the business enterprise sector (BES), women have consistently accounted for around one-quarter of researchers, slightly above the EU benchmark, though this share has declined from 26.5% (2013) to 23.1% (2023).[378]

Chart 28: Proportion (%) of women among researchers, by sector of the economy, 2021



Source: *She Figures 2024*

[378] European Commission. She Figures 2024: Gender Equality in Research and Innovation – Malta. 2024. https://ec.europa.eu/assets/rtd/shefigures/2024/files/shefigures2024fiche-mt.pdf

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Despite these gains, horizontal inequalities persist in outputs. Women authored only 32% of publications (2018–2022) and appear as inventors on only 7.79% of patent applications (2018–2021), ranking Malta the 9th lowest in the EU (EU average: 9.37%).[379]

Interestingly, Malta stands out for having the highest rate of women's research funding success in the EU, with 54% of successful applicants being women, 16 percentage points higher than men. However, this success in funding does not translate into higher innovation output or patent activity, pointing to structural barriers between research and commercialisation phases.[380]

Malta also underperforms in entrepreneurship and start-up innovation, especially in Deep Tech sectors. It ranks second lowest in the EU for the share of women founders in Deep Tech startups. No detailed national data exist on women-founded startups, suggesting serious data transparency gaps. In Southern Europe overall, women represent around 22% of Deep Tech startup founders, further underscoring Malta's lagging performance.[381]
The lack of gender-disaggregated innovation data and limited visibility of women's entrepreneurship create a systemic barrier to inclusive innovation. To address this, Malta should strengthen data collection and publication, ensure better access to finance, and promote mentorship and networking programmes aligned with EU frameworks for gender equality in research and innovation.[382]

These findings highlight the urgent need for Malta to strengthen data collection and publication, while also adopting targeted measures to support women entrepreneurs and innovators. Policies should include improved access to finance, mentoring and networking opportunities, and alignment with EU initiatives on gender equality in research and innovation. Only by addressing both the lack of transparency and the structural barriers can Malta move towards a more inclusive and competitive innovation environment.

[379] European Commission. She Figures 2024: Gender Equality in Research and Innovation – Malta. 2024. https://ec.europa.eu/assets/rtd/shefigures/2024/files/shefigures2024fiche-mt.pdf
[380] European Commission. She Figures 2024. https://projects.research-and-innovation.ec.europa.eu/en/knowledge-publications-tools-and-data/interactive-reports/she-figures-2024
[381] European Commission. She Figures 2024: Gender Equality in Research and Innovation – Malta. 2024. https://ec.europa.eu/assets/rtd/shefigures/2024/files/shefigures2024fiche-mt.pdf
[382] European Commission. She Figures 2024: Gender Equality in Research and Innovation – Malta. 2024. https://ec.europa.eu/assets/rtd/shefigures/2024/files/shefigures2024fiche-mt.pdf

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BEST PRACTISES BOX: Notable Female Tech Entrepreneurs

Mireille Bartolo: Founder of *EcoApps*, award-winning green tech solutions reducing carbon footprints.

Violetta Bonenkamp: "Mean CEO," founder of *Fe/male Switch* and *CADChain*, pioneering blockchain and AI startups.

Sarah Borg: Founder of *CultureConnect*, an AR platform boosting Malta's cultural tourism with major investments.

Maria Micallef: Founder of *HealthTrack*, innovating healthcare data with AI and blockchain, recognized in Europe.

Nina Cutajar: Leads fintech startup *FinMaster*, securing grants and awards for SME-focused financial tools.

Rachel Cassar: Founder of *EduTech Malta*, transforming education with accessible digital learning solutions.

Key Insights & Trends

Access and Affordability:

- Malta is positioned at the top among partner countries for internet penetration. Since 2021, Malta is the only EU country with full Very High Capacity Network (VHCN) coverage. However, the uptake of very fast broadband (1 Gbps) remains low at 11.7% of subscriptions, compared to the EU average of 18.5%. Malta generally ranks well regarding internet affordability (1.1% overall who cannot afford it). However, the biggest gender gap in affordability is found in cities, where 2% of women cannot afford the internet in contrast to 1.5% of men.

Digital Skills and Education:

- Malta has the highest share of people aged 16–74 participating in social networks (76.65%) compared to comparison countries, exceeding the EU average of 64.82%. The most pronounced gap in daily internet use appears in the 55–74 age group, with a difference of 6.9 percentage points (76.1% of men vs 69.2% of women), suggesting that older women remain significantly less digitally connected. While overall gender differences are minimal, women show a small aggregate advantage in social network participation. The largest gender gap in favour of women is striking in the 35–44 cohort, with a 13.45% advantage.

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Gendered Usage Patterns:

- Malta performs well above the EU average in basic digital skills coverage (63.0% vs 55.6% EU average). Women (63.3%) slightly outperform men (62.7%) in overall basic digital skills. Malta ranks as having the 4th biggest gap (59%) in the share of people with at least basic digital skills when comparing those with high versus low formal education. While the gender gap generally widens with age, the pattern among older adults is inverted compared to the broader EU trend. In the 55–74 age group, men are significantly more skilled (34.95% vs 25.49% for women), but when looking at those with no overall digital skills, more Maltese men than women in the 55–74 age group lack basic digital skills.

Workforce and Leadership:

- Malta ranks poorly in the structural pipeline, having the second lowest share of female ICT specialists in the EU at only 14.7%. This is mirrored by a ranking of 25th in gender balance in STEM graduation and 13th in ICT graduation.

Innovation and Entrepreneurship:

- Despite low innovation output and inventor participation (women accounted for only 7.79% of patent applications), Malta stands out for having the highest rate of women's research funding success in the EU, with 54% of successful applicants being women.
- A pressing challenge across this layer is the lack of systematic and consistent gender-disaggregated data collection (e.g., irregular data collection for doctoral graduates and Grade A positions), which hinders the ability to monitor long-term progress and design evidence-based policy. Malta also ranks second lowest in the EU for the share of women founders in Deep Tech startups, but notes that no detailed national data exists, suggesting serious data transparency gaps.

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Spain

Context

Spain has achieved 66,2% basic digital skills coverage, growth compared to 64,2% in 2023 and now surpassing the EU average of 55.6%.[383] According to the Digital Decade report 2024, Spain performs slightly below the EU average in the indicator - the percentage of ICT specialists in employment. With a growth from 4,3% in 2023 to 4,4% in 2024 Spain is performing below the EU average of 4.8%.[384]

Spain occupies a leading position within the European Union in terms of digital gender equality, consistently performing above the EU average across multiple official benchmarks. According to the European Institute for Gender Equality's Gender Equality Index 2024, Spain ranks fourth among all EU Member States with an overall score of 76.7 out of 100, significantly exceeding the EU average of 71.0.[385] This high score is largely attributed to Spain's strong performance in the "power" domain, where it scored 82.0, reflecting considerable female representation in political, economic, and social decision-making roles.[386]

In the digital domain specifically, Spain also performs notably well. As reported in the WiD Scoreboard, Spain ranks eighth among EU countries, with a score of 64.2%, well above the EU average of 54%. The WiD Scoreboard evaluates women's participation in the digital economy across three key areas: internet use, digital skills, and employment in ICT. Spain shows relative strength particularly in digital skills and internet usage by women, which has contributed to its sustained high ranking.[387]

Historically, Spain has demonstrated steady progress in narrowing the gender gap, particularly within the digital sector. This progress is further reflected in global metrics. The UNDP, through its Gender Inequality Index, places Spain among the top-performing nations worldwide. In the 2023–2024 reporting period, Spain achieved a low inequality score of 0.070, underscoring its favourable position in terms of reproductive health, empowerment, and economic status for women.[388]

Overall, Spain's performance across these indices confirms its status as a frontrunner in gender equality within both the traditional and digital spheres. Nevertheless, challenges remain, especially in achieving greater female participation in STEM-related education and

[383] Kralj, Lidija. "Spain: A Snapshot of Digital Skills." Digital Skills and Jobs Platform, July 30, 2024. https://digital-skills-jobs.europa.eu/en/latest/briefs/spain-snapshot-digital-skills.

[384] European Commission. State of the Digital Decade 2025 Report. June 16, 2025. https://digital-strategy.ec.europa.eu/en/library/state-digital-decade-2025-report.

[385] European Institute for Gender Equality (EIGE). Gender Equality Index 2024: Sustaining Momentum on a Fragile Path. December 10, 2024. https://eige.europa.eu/publications-resources/publications/gender-equality-index-2024-sustaining-momentum-fragile-path

[386] Ibid.

[387] European Commission. Women in Digital Scoreboard 2024. August 12, 2024. https://digital-strategy.ec.europa.eu/en/news/women-digital-scoreboard-2024.

[388] United Nations Development Programme (UNDP). Gender Inequality Index. Accessed September 21, 2025. https://hdr.undp.org/data-center/thematic-composite-indices/gender-inequality-index#/indicies/GII.

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careers, and in addressing persistent wage disparities in the tech sector. Continued policy focus and targeted initiatives will be critical to closing these gaps and maintaining Spain's positive trajectory within the European digital gender landscape.

Access Layer of the Digital Gender Gap

At a national level, Spain exhibits a remarkably high rate of internet adoption, with approximately 95% of the total population classified as internet users.[389] This widespread usage is reflected in household connectivity rates, where 96.8% of homes have a broadband connection.[390] This high national penetration extends to a striking degree of gender parity. Data from 2024 indicates that 96% of women and 95% of men are internet users, showing a nearly non-existent gender gap in overall internet usage.[391] Similarly, household computer access is high, with 83% of homes having some type of computer.[392] This top-level parity, however, can be a potentially misleading indicator of the true state of digital equality, as it can easily mask significant disparities within specific demographics. Just as a high national GDP can obscure extreme wealth inequality, a single, high connectivity number can hide deep digital divides. The user's request for an analysis of marginalised communities forces a move beyond these general statistics to uncover the hidden pockets of exclusion.

A closer look at the data reveals that while the gender gap in internet use is minimal, significant disparities persist across geographic and generational lines.[393] A noticeable urban-rural divide exists, with 96% of the urban population using the internet compared to 93% in rural areas.[394] While this may appear to be a small gap, its implications are profound. This seemingly small disparity represents a much greater divide in meaningful access and use. Individuals in rural areas often contend with compounding challenges, including less reliable and slower connections due to the high costs and geographic difficulties of developing ground-based infrastructure. [395] This can lead to a cascading effect where a less stable connection makes it more difficult to participate in online work, education, and public services, thereby exacerbating existing socio-economic inequalities.[396] The policy focus on these areas, such as the digital literacy scheme for women workers under the PROFEA program, validates that this territorial gap is a recognised and significant policy challenge.[397]

Adult digital upskilling initiatives also exhibit gaps, particularly for older populations. Data from Spain's National Statistics Institute (INE) for 2023 shows that only 60% of citizens aged 65 to

[389] Internet Society. "Spain Internet Development Report." Pulse, 2024. https://pulse.internetsociety.org/en/reports/ES/.
[390] Instituto Nacional de Estadística (INE). "INEbase: National Statistics." INE, 2024. https://www.ine.es/dyngs/INEbase/en/.
[391] Internet Society. "Spain Internet Development Report." Pulse, 2024. https://pulse.internetsociety.org/en/reports/ES/.
[392] Instituto Nacional de Estadística (INE). "INEbase: National Statistics." INE, 2024. https://www.ine.es/dyngs/INEbase/en/.
[393] Acelera Pyme. "How to Bridge the Digital Divide in Spain." Acelera Pyme, November 3, 2022. https://www.acelerapyme.gob.es/en/news/pill/how-bridge-digital-divide-spain.
[394] Universitat Oberta de Catalunya (UOC). "What Are the Stereotypes That Fuel Digital Ageism in Spain?" UOC News, 2025. https://www.uoc.edu/en/news/2025/stereotypes-of-digital-ageism.
[395] CEDEFOP. "Spain: Rural Women Go Digital." CEDEFOP News, December 1, 2022. https://www.cedefop.europa.eu/en/news/spain-rural-women-go-digital.
[396] Internet Society. "Spain Internet Development Report." Pulse, 2024. https://pulse.internetsociety.org/en/reports/ES/.
[397] Lyntia. "Connectivity in Rural and Remote Parts of Spain." Lyntia News, November 17, 2023. https://www.lyntia.com/en/news/connectivity-in-rural-and-remote-parts-of-spain/.

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74 use the internet, a stark contrast to the near 100% usage rate among young people.[398] This gap is not merely a matter of physical access but is a multi-faceted problem rooted in a "vicious circle" of discrimination and exclusion.[399] A research project by the Universitat Oberta de Catalunya (UOC) identifies three core elements that perpetuate this divide: ageist stereotypes (such as the belief that older adults are incapable of learning), a lack of detailed data on their specific needs, and the inappropriate design of digital services that neglect this demographic's significant heterogeneity.[400] The digital exclusion of older adults has become a significant form of social exclusion, a situation worsened by the COVID-19 pandemic, which highlighted the urgent need for proactive policies to ensure their digital citizenship.[401] Therefore, addressing this divide requires a strategic effort that goes beyond simply providing access, necessitating cultural and design shifts in how technology is presented and developed for this group.

Regional disparities in digital inclusion further highlight policy blind spots. Studies indicate significant differences in digital skills and access across Spain's autonomous communities, with regions like Madrid and Catalonia outperforming others such as Extremadura and Castilla-La Mancha. These disparities are often rooted in unequal investment in digital infrastructure and education, underscoring the need for region-specific policies that address local challenges and promote equitable digital development.

Table 23: Internet use in Spain, 2024

Indicator	Women	Men
Internet Use (Overall)	96%	95%
Internet Use (Urban vs. Rural)	Urban: 96% / Rural: 93%	Urban: 96% / Rural: 93%
Internet Use by Age (16y –74y)	95.8%	95.8%
Internet Use by Age (65y–74y)	60%	60%
Households with Computer	83% (national average)	

Source: Internet Society Pulse, National Statistics Institute, Internet Society Pulse

Spain's digital infrastructure is characterised by a remarkable paradox: it is a European leader in fibre deployment but faces significant challenges in the "last-mile" user experience.[402] Over 95% of Spanish households are passed by a full-fibre network, a figure well above the EU average of 64%.[403] This success has made Spain a model for aggressive national fibre rollout, yet it has inadvertently created a new, post-access divide. The primary issue is no longer

[398] Universitat Oberta de Catalunya (UOC). "What Are the Stereotypes That Fuel Digital Ageism in Spain?" UOC News, March 12, 2025. https://www.uoc.edu/en/news/2025/stereotypes-of-digital-ageism
[399] Ibid.
[400] Ibid.
[401] Ibid.
[402] Ookla. "Spain Wi-Fi Performance: Q1 2025." Speedtest Global Index, April 2025. https://www.ookla.com/articles/spain-wifi-q1-2025.
[403] Ibid.

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getting a connection to the doorstep but ensuring a high-quality, reliable user experience within the home.

A recent analysis indicates that over 75% of fixed connections in Spain still rely on outdated Wi-Fi 4 and Wi-Fi 5 customer premises equipment (CPE).[404] This means that even with a high-speed fibre line entering the house, the actual performance, including download speeds, latency, and reliability, is degraded by the internal hardware. This creates a subtle but critical barrier to access, particularly for activities that require high bandwidth, and highlights a new dimension of the digital divide: the gap between a country's external infrastructure and its internal, user-end hardware.[405]

Spain has implemented a comprehensive set of national policies aimed at promoting gender equality and digital inclusion. The National Artificial Intelligence Strategy (ENIA) and the National Plan for Digital Skills both prioritise reducing the gender gap and digital divide. At the operational level, the Ministry of Labour and Social Economy has initiated the PROFEA program, a targeted digital literacy scheme for women living in rural areas, particularly agricultural workers.[406] The program, funded through temporary Next Generation funds, provides in-person training courses tailored to the specific needs of its participants.[407] This program is a commendable example of an intersectional approach that addresses the digital divide for a specific marginalised group. However, its reliance on temporary funding raises questions about its long-term sustainability and scalability to other underserved regions, highlighting a broader systemic issue: the difficulty of implementing long-term, structural change with short-term, ad-hoc funding.

[404] Ibid.

[405] Ibid.

[406] European Institute for Gender Equality (EIGE). “Spain: Rural Women Go Digital.” CEDEFOP, December 1, 2022. https://www.cedefop.europa.eu/en/news/spain-rural-women-go-digital.

[407] Red de Políticas Agrarias y Rurales (REDPAC). “Spain Launches a Digital Training Program for Rural Women.” REDPAC, January 12, 2024. https://redpac.es/en/news/Spain%20launches%20a%20digital%20training%20program%20for%20rural%20women.

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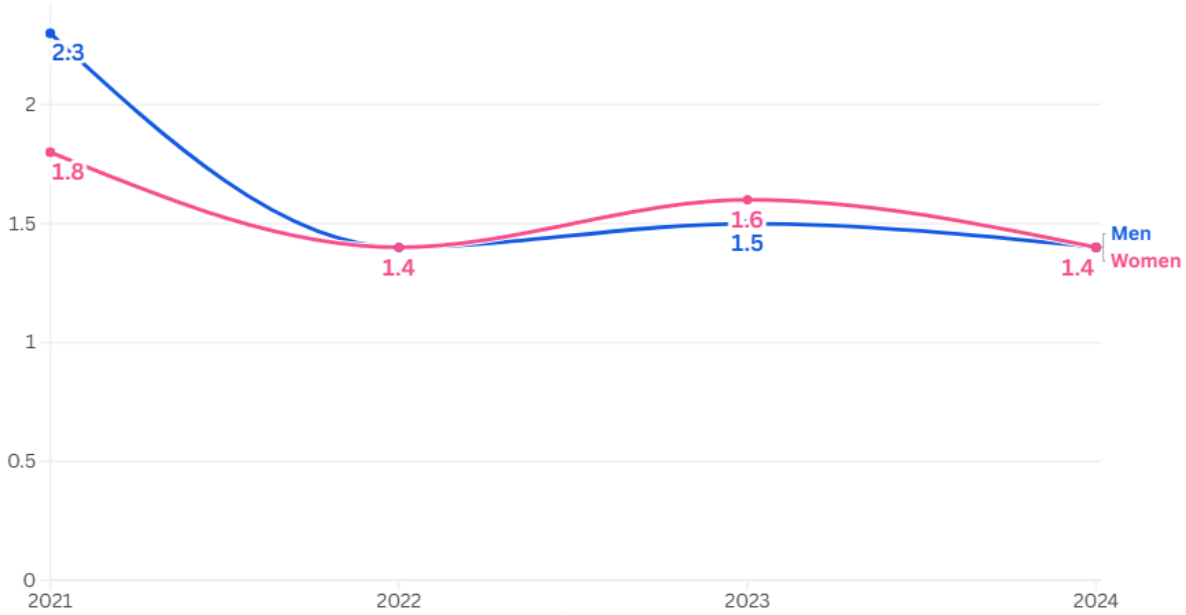
Chart 29: Persons who cannot afford internet connection for personal use at home by sex, 2021-2024



Source: Eurostat, 2025

From 2021 to 2024, the share of persons in Spain unable to afford internet at home decreased overall, with the steepest drop occurring between 2021 and 2022. Male levels were initially higher than female levels in 2021, but from 2022 onward the gap between sexes was minimal. By 2024, both sexes converged at the same value, showing an equalised affordability barrier.

Skills Layer of the Digital Gender Gap

Spain has largely achieved parity in basic competences among younger cohorts, but significant gender inequalities persist in advanced skills and training participation. Older women, homemakers, and rural or migrant women remain at a disadvantage. Policy interventions under the Plan Nacional de Competencias Digitales and the Recovery and Resilience Plan are beginning to redress these inequalities through tailored training programmes, yet the 2023 data suggest that women are still enrolling less frequently than men and advancing less often to higher skill levels.

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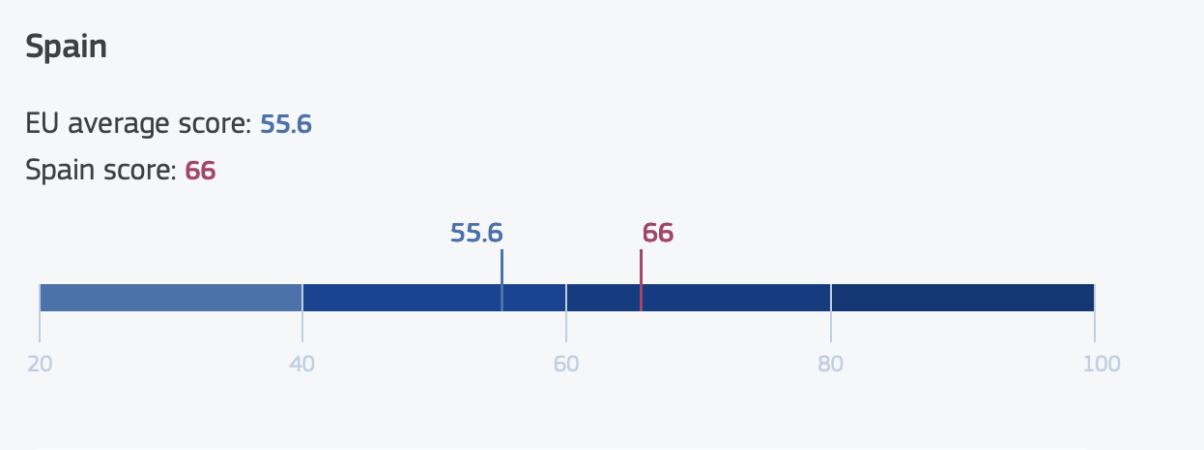
Figure 7: At least basic digital skills (% of individuals aged 16-74)



Source: EU Digital skills & jobs platform

Spain ranks 7th out of the 27 EU Member States in the DESI dashboard for the Digital Decade for the 'At least basic digital skills' indicator, with 66.2% of its population possessing at least basic digital skills.[408]

At a national level, 66.2% of the population aged 16 to 74 possess at least basic digital skills, which is above the EU average.[409] For the younger demographic, specifically those aged 16 to 29, the gender gap in basic skills is almost non-existent. In 2023, 73% of young women and 69% of young men reported having at least basic digital skills, with women slightly ahead.[410] However, this parity does not extend to all age groups. A profound "grey digital divide" exists among older adults. Data from Spain's National Statistics Institute (INE) for 2023 shows that only 60% of citizens aged 65 to 74 use the internet, a stark contrast to the nearly 100% usage rate among young people.[411] This is not just a matter of access, but also a lack of skills and confidence, which a research project by the Universitat Oberta de Catalunya (UOC) attributes to ageist stereotypes, a lack of targeted data, and services that are not designed for this demographic.[412] Older women (55–74) consistently under-represented at basic proficiency compared with men, reflecting cohort effects in education and care roles. (Eurostat's digital-skills methodology and scoreboard documentation show systematically lower female rates at older ages across countries, a pattern also echoed in Spain's national observatory work.)[413]

At above-basic levels (problem-solving, content creation), men still hold a modest lead. EU monitoring of advanced digital skills by sex indicates a male advantage that Spain mirrors,

[408] European Commission. Digital Decade DESI Visualisation Tool. https://digital-decade-desi.digital-strategy.ec.europa.eu.

[409] European Commission. Digital Strategy for Europe. https://digital-strategy.ec.europa.eu/en.

[410] Ibid.

[411] Universitat Oberta de Catalunya (UOC). "What Are the Stereotypes That Fuel Digital Ageism in Spain?" UOC News, March 12, 2025. https://www.uoc.edu/en/news/2025/stereotypes-of-digital-ageism

[412] Ibid.

[413] Observatorio Nacional de las Telecomunicaciones y de la Sociedad de la Información (ONTSI). Competencias Digitales 2023. August 2024. https://www.ontsi.es/sites/ontsi/files/2024-08/Competencias-Digitales-23.pdf.

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though the gap is smaller among younger cohorts.[414] These disparities suggest that gender differences are not uniform across skill types, but cluster around higher-order and technical competences. According to Eurostat, about 29% of women possess above-basic digital skills compared with 33% of men.

A deeper analysis of more specialised competencies reveals a clearer gender disparity. A 2023 study of Spanish youth aged 16 to 18 found that while young women matched or surpassed young men in skills like recording and editing video and finding information, a notable gender gap exists in more technical areas.[415] For instance, only 18.3% of young women reported the ability to repair and service devices, compared to 32.6% of young men. A similar gap was found in "critical knowledge," with young men showing a higher awareness of how technology companies use personal data and a better understanding of digital service features.[416]

Table 24: Men and women digital skills & training, 2023

Indicator	Women	Men
At least basic digital skills (age 16–74)	65.9%	66.5%
Above-basic digital skills (age 16–74)	29%	33%
Programming skills (youth 15–29)	19%	19.4%
Installing software (youth 16–18)	73.3%	73.5%
Verifying reliability of online information (youth 16–18)	48.9%	49.9%

Sources: Digital Decade report, Eurostat, Idescat

Women are also under-represented in formal digital education and training. In 2023, 18.5% of men had taken part in some digital training course in the previous 12 months, compared to only 15.2% of women.[417] Participation rates are lowest among older women and those outside the labour market, especially homemakers. This underlines that the gender gap in skills is not merely a matter of access to the internet, but of access to structured opportunities for learning.

For marginalised groups, the challenges are sharper. Rural women in particular face double disadvantages: according to national survey data, they are both less likely to report advanced digital skills and less likely to participate in digital training initiatives.[418] Migrant women show

[414] Eurostat. Digitalisation in Europe – 2024 Edition. April 29, 2024. https://ec.europa.eu/eurostat/web/interactive-publications/digitalisation-2024.
[415] Estanyol, Eva. “Digital Competence among Young People in Spain: A Gender Divide Analysis.” Comunicar 74 (2023). https://www.revistacomunicar.com/ojs/index.php/comunicar/article/view/C74-2023-09/4676.
[416] Ibid.
[417] Observatorio Nacional de las Telecomunicaciones y de la Sociedad de la Información (ONTSI). Competencias Digitales 2023. August 2024. https://www.ontsi.es/sites/ontsi/files/2024-08/Competencias-Digitales-23.pdf.
[418] Observatorio Nacional de las Telecomunicaciones y de la Sociedad de la Información (ONTSI). Competencias Digitales 2023. August 2024. https://www.ontsi.es/sites/ontsi/files/2024-08/Competencias-Digitales-23.pdf.

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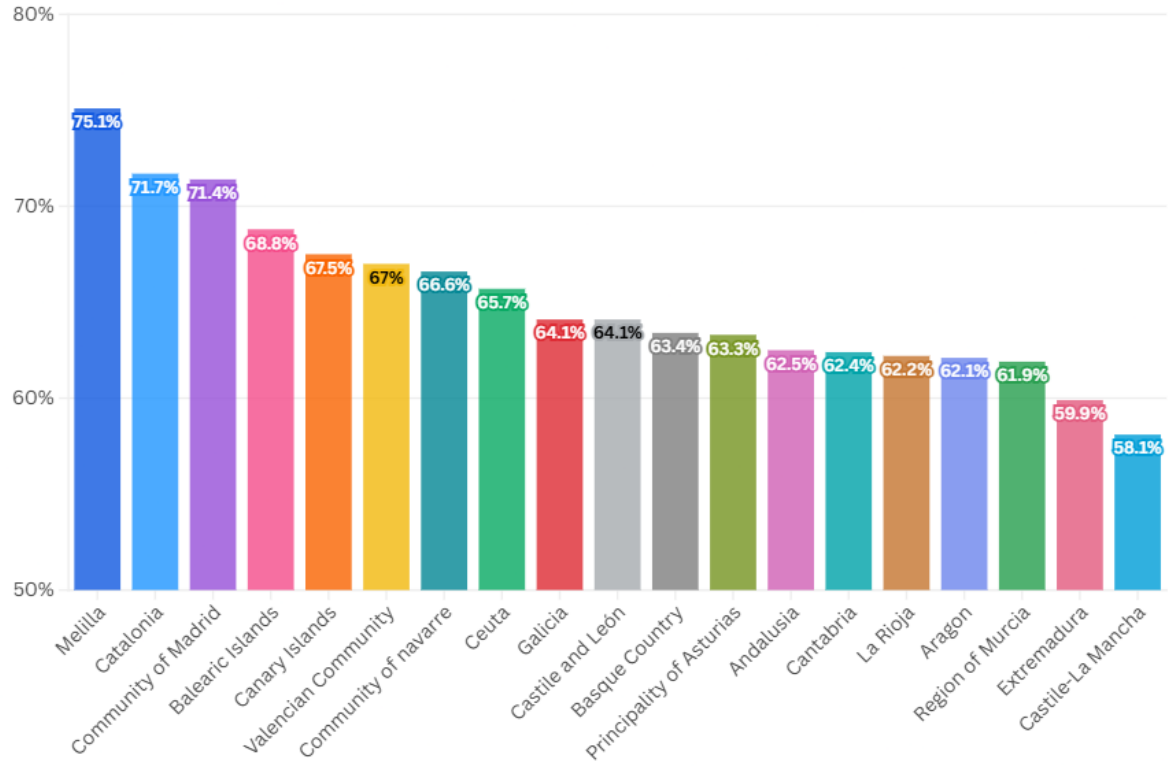
similar patterns, with training participation rates several points below the national female average, largely due to linguistic and socio-economic barriers.

Chart 30: Digital Compentencies by Autonomous Community (%)



Source: ONTSI, 2023

There are also notable territorial disparities in digital skills across Spain's autonomous communities. Regions such as Madrid, Cataluña, and País Vasco consistently report higher levels of both basic and above-basic digital competences. In Madrid, for example, over 70% of the population demonstrate at least basic skills, well above the national average.[419] By contrast, southern and more rural regions, Andalucía, Extremadura, and Castilla-La Mancha, register the lowest rates, in some cases below 60% for basic competences.[420] These differences mirror wider socio-economic patterns: wealthier, more urbanised regions benefit from denser infrastructures, higher education levels, and more diverse labour markets, all of which foster digital literacy.

The divide becomes more pronounced at the level of advanced competences. In Cataluña and Madrid, roughly one-third of the population achieve above-basic proficiency, whereas in regions such as Extremadura or Murcia this proportion falls closer to one-fifth.[421] The regional disparities are particularly acute among older adults and rural populations, where opportunities

[419] Ibid.

[420] Ibid.

[421] Observatorio Nacional de las Telecomunicaciones y de la Sociedad de la Información (ONTSI). Competencias Digitales 2023. August 2024. https://www.ontsi.es/sites/ontsi/files/2024-08/Competencias-Digitales-23.pdf.

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for training are scarcer and skill acquisition is more strongly tied to local initiatives or EU-funded projects.[422] Such differences point to the persistence of a “digital geography” within Spain, where location still shapes the likelihood of attaining higher-level digital competences.

In 2023, just under 60% of the Spanish population demonstrated at least basic competence in areas such as managing passwords, recognising suspicious messages, or adjusting privacy settings.[423] However, only around one-third reported above-basic knowledge of more advanced practices, including the use of authentication systems or monitoring of app permissions.[424] A gender gap is also observable: men are marginally more likely to report higher confidence in security competences, though women increasingly match or exceed men in specific practices such as updating privacy settings on social media. Regarding skills related to digital safety and security, generational differences are stark. Younger people tend to be more adept at identifying security risks and managing settings, though they may underestimate long-term risks such as data retention.[425] Older people, meanwhile, show lower engagement with preventive practices, relying more heavily on family or institutional support when encountering threats.[426] Overall, while Spain’s population is broadly competent in everyday security practices, the transition towards more advanced cyber-hygiene remains incomplete, and regional and socio-demographic inequalities persist in this critical domain.

[422] Ibid.
[423] Ibid.
[424] Ibid.
[425] Ibid.
[426] Ibid.

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BEST PRACTISES BOX: Initiatives to address gender divide

The **PROFEA Program** is a digital literacy scheme for rural women workers. Aimed at reducing the gendered digital divide and boosting employment opportunities, the initiative offers tailored in-person training modules in Andalusia, Extremadura, and other, disadvantaged areas until 2024.

The **UOC's #Viejismo Project**, tackles the "grey digital divide" by challenging ageist stereotypes and addressing poor data and design that exclude older adults. Through a survey of 2,000 Spaniards, the project seeks to inform inclusive policies and guide technology companies toward more equitable practices.

Metzineres, a Barcelona-based non-profit cooperative, offers safe spaces with internet access for marginalised women and non-binary people who use drugs and have experienced violence. It combines digital access with health, psychological, peer, and entrepreneurial support, showing that digital inclusion for vulnerable groups requires addressing broader social and personal challenges.

UNICO Rural Development Program, aims to deliver 100Mbps connectivity across Spain by 2026. It employs a multi-technology strategy: fibre, 5G, and satellites to reach remote areas and relies on public–private partnerships with SMEs to achieve universal coverage.

Usage Layer of the Digital Gender Gap

The Spanish digital landscape has largely achieved parity in basic internet and mobile usage. According to recent data from 2024, 96% of women and 95% of men are internet users, showing a nearly non-existent gender gap in overall usage. Similarly, a high percentage of households own a computer.[427] However, this top-level parity can obscure a more complex "usage gap": a challenge where people with internet access are not fully leveraging the opportunities it provides. This gap is particularly acute among the most vulnerable groups and presents a central policy challenge. An analysis of digital activities further reveals that a gender-based disparity in usage exists across different internet services.[428] While the gap may favour women in some services, it favours men in others.

Communication and collaboration are among the most widespread digital activities in Spain, with over 94% of the population having at least a basic level of competence in this area.[429] Women are slightly more proficient than men in communication and collaboration, with 95.2%

[427] Instituto Nacional de Estadística (INE). INEbase: Sistema de Información Estadística. Accessed September 21, 2025. https://www.ine.es/dyngs/INEbase/en/.
[428] Garín-Muñoz, T. "Evolution of the Internet Gender Gaps in Spain and Effects on Digital Inclusion." PMC, 2022. https://pmc.ncbi.nlm.nih.gov/articles/PMC9068793/.
[429] Kemp, Simon. "Digital 2025: Spain." Datareportal, February 25, 2025. https://datareportal.com/reports/digital-2025-spain.

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of women having at least a basic level compared to 94.6% of men.[430] Activities such as sending and receiving emails, using instant messaging, and participating on social networks are widely practiced.[431]

This high level of communication-based engagement is reflected in a key demographic: older adults. While they may not use the internet for complex tasks, people aged 65 to 74 primarily use the internet for communication tools such as WhatsApp.[432] This highlights a form of purposeful digital use that is centred on maintaining social connections and family ties, which is particularly important for this age group.[433]

The gender dynamics of online consumption and information gathering present a more mixed picture. While older data from the EU indicates men were more likely than women to engage in online purchasing, recent 2024 data from Spain's National Statistics Institute (INE) shows a reversal in this trend. In Spain, women have a slightly higher rate of making online purchases than men, with a difference of 2.3 percentage points.[434] Engagement with other digital services also varies: women have a slightly higher level of competence in information and digital literacy than men, at 88.8% compared to 87.6%.[435] A significant portion of the Spanish population aged 16 to 74 (79.7%) interacted with public authorities or services online in 2024, most often to access information or book appointments.[436] However, these activities drop off sharply with age, revealing a stark generational gap in online civic and commercial participation. For people over 75, for instance, only 7.4% made online purchases.[437] This is a clear example of how a lack of engagement in essential services can lead to a form of social exclusion for older populations.[438]

While engagement in communication is high, disparities appear in more creative or technically demanding forms of digital engagement. According to data from 2023, men have a slightly higher proficiency in digital content creation than women, at 74.2% compared to 73.5%.[439] A 2023 study on Spanish youth found that while young women were slightly ahead in editing video content,[440] a significant gender gap exists in the ability to repair and service devices, with 32.6% of young men reporting this skill compared to only 18.3% of young women.[441]

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[430] Observatorio Nacional de las Telecomunicaciones y de la Sociedad de la Información (ONTSI). Competencias Digitales 2023. August 2024. https://www.ontsi.es/sites/ontsi/files/2024-08/Competencias-Digitales-23.pdf.
[431] Observatorio Nacional de las Telecomunicaciones y de la Sociedad de la Información (ONTSI). Competencias Digitales 2023. August 2024. https://www.ontsi.es/sites/ontsi/files/2024-08/Competencias-Digitales-23.pdf.
[432] Universitat Oberta de Catalunya (UOC). "What Are the Stereotypes That Fuel Digital Ageism in Spain?" UOC News, March 12, 2025. https://www.uoc.edu/en/news/2025/stereotypes-of-digital-ageism.
[433] Cambridge University Press. Ageing & Society. Accessed September 21, 2025. https://www.cambridge.org/core/journals/ageing-and-society.
[434] Observatorio Nacional de las Telecomunicaciones y de la Sociedad de la Información (ONTSI). Competencias Digitales 2023. August 2024. https://www.ontsi.es/sites/ontsi/files/2024-08/Competencias-Digitales-23.pdf.
[435] Ibid.
[436] Ibid.
[437] Universitat Oberta de Catalunya (UOC). "What Are the Stereotypes That Fuel Digital Ageism in Spain?" UOC News, March 12, 2025. https://www.uoc.edu/en/news/2025/stereotypes-of-digital-ageism.
[438] Ibid.
[439] Observatorio Nacional de las Telecomunicaciones y de la Sociedad de la Información (ONTSI). Competencias Digitales 2023. August 2024. https://www.ontsi.es/sites/ontsi/files/2024-08/Competencias-Digitales-23.pdf.
[440] Ibid.
[441] Ibid.

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Similarly, men report a higher level of awareness of how technology companies use personal data and a better understanding of digital service features.[442] This suggests that gender disparities are not universal but are highly specific to the type of digital engagement.

Table 25: Digital Engagement and ICT Usage by Gender and Age in Spain, 2024

Indicator	Women	Men
Internet Use (last 3 months), 16-24 years	99,9%	99,6%
Internet Use (last 3 months), 65-74 years	82,1%	82,9%
Internet Use (last 3 months), 16-74 years	96,2%	95,4%

Source: The Spanish National Statistics Institute

Employment Layer of the Digital Gender Gap

While Spain has made significant strides in achieving gender parity in general internet use, a persistent and profound gender gap continues to define its digital labour market.

The most significant and enduring gender gap in Spain's digital economy is the underrepresentation of women in STEM (Science, Technology, Engineering, and Mathematics) and ICT (Information and Communication Technologies) professions. According to a 2024 report, women account for only 20% of Spain's ICT specialists, a figure that is in line with the EU average.[443] This is a stark contrast to the overall labour market, where women's participation is much higher. The disparity begins early in education, with only 13% of STEM students in Spain being women, a trend that makes it difficult to build a pipeline of female talent for these technical careers.[444]

This underrepresentation is also visible in fields like research and innovation. While women are highly active in R&D management (68.3%), they represent a much smaller share of inventors (35.5%) and innovators in strategic sectors.[445] "Women and Innovation" report from 2024 reveals that 61.3% of ICT companies in Spain have no female ICT specialists on their payroll, highlighting the urgent need to integrate women into these roles.[446]

The gender gap is even more pronounced in positions of leadership and responsibility within the digital and technology sectors, where the "glass ceiling" remains a significant obstacle.[447]

[442] Ibid.

[443] Eurostat. "ICT Specialists in Employment." Statistics Explained. Last modified July 8, 2025. https://ec.europa.eu/eurostat/statistics-explained/index.php/ICT_specialists_in_employment

[444] Telefónica. "Communication Room." Accessed September 21, 2025. https://www.telefonica.com/en/communication-room/.

[445] Ministry of Science, Innovation and Universities. Women and Innovation 2024 Report: Executive Summary. Madrid: Ministry of Science, Innovation and Universities, May 10, 2024. https://www.ciencia.gob.es/dam/jcr:4544fda9-be97-40cd-bb80-131b769b8003/WomenInnovation2024_ExecutiveSummary.pdf

[446] Ibid.

[447] Ibid.

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In the ICT sector, women represent only 19.2% of managers, a figure that is less than half their representation in the non-ICT service sector (42.5%).[448] A recent 2025 report found that in functional areas like technology, women only hold 5.1% of leadership roles.[449] This disparity suggests that even when women enter the digital workforce, they face serious difficulties in being promoted and reaching senior positions. However, some private companies are making efforts to address this. For example, Telefónica, whose staff is 38% women, has set a goal to have 37% of its management positions filled by women by 2027 and aims for gender parity in top management by 2030.[450]

Gender disparities in the digital labour market are also reflected in compensation. A 2025 report highlights that while Spain's gender pay gap has narrowed significantly over the past two decades, women still earn less than men even when controlling for education, experience, and occupation.[451] A study on the ICT sector found that while women in ICT often earn higher wages than in other sectors, the gender pay gap persists, albeit at a lower rate.[452] Women in these roles are also more likely to face discrimination, work-life balance conflicts, and overqualification.[453] Research indicates that the intensification of labor segregation is particularly acute for high-skilled women, whose earnings gap has increased over time.[454]

The Spanish government has implemented several strategies, such as the National Artificial Intelligence Strategy (ENIA) and the National Plan for Digital Skills, with the goal of reducing the digital gender divide and encouraging more women to pursue STEM careers. These policies are aligned with EU initiatives like the Digital Decade and the EU Gender Equality Strategy. Private companies like Telefónica also contribute through initiatives like "Girls Love Tech" and the ClosinGap business platform, which focuses on analysing and addressing the economic impact of gender inequality in the workforce.[455]

[448] ResearchGate. “Evolution of the Internet Gender Gaps in Spain and Effects on Digital Inclusion.” ResearchGate, 2022. https://www.researchgate.net/publication/334460168.

[449] EADA Business School. “Gender Pay Gap Widens after Seven Years of Progress, According to Report by EADA and ICSA Grupo.” EADA News, April 8, 2025. https://www.eada.edu/en/now/news/2025/04/gender-pay-gap-2025-report-spain.

[450] Telefónica. “News.” Telefónica Communication Room. https://www.telefonica.com/en/communication-room/news/.

[451] Contreras, Jimena, and Claudia Hupkau. “The Gender Pay Gap in Spain: What Factors Contribute to Its Persistence?” ResearchGate, March 7, 2025. https://www.researchgate.net/publication/334460168.

[452] Contreras, Jimena, and Claudia Hupkau. “The Gender Pay Gap in Spain: What Factors Contribute to Its Persistence?” ESADE EcPol, March 7, 2025. https://www.esade.edu/ecpol/en/publications/the-gender-pay-gap-in-spain-what-factors-contribute-to-its-persistence/.

[453] Contreras, Jimena, and Claudia Hupkau. “The Gender Pay Gap in Spain: What Factors Contribute to Its Persistence?” ResearchGate, March 7, 2025. https://www.researchgate.net/publication/334460168.

[454] Contreras, Jimena, and Claudia Hupkau. “The Gender Pay Gap in Spain: What Factors Contribute to Its Persistence?” ESADE EcPol, March 7, 2025. https://www.esade.edu/ecpol/en/publications/the-gender-pay-gap-in-spain-what-factors-contribute-to-its-persistence/.

[455] Telefónica. “News.” Telefónica Communication Room. https://www.telefonica.com/en/communication-room/news/.

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BEST PRACTISES BOX: **Policies, Strategies and Initiatives**

Royal Decrees 901/2020 & 902/2020 mandates that companies with more than 50 employees must approve and implement Gender Equality Plans (GEPs). They require companies to have salary registers and conduct salary audits to identify and correct gender-based pay discrimination.

National Plan for Digital Skills is focused on enhancing digital competencies across the population. It prioritises increasing female participation in technology-related careers by encouraging young girls to pursue STEM education and training.

Telefónica Initiatives has set internal goals to increase female representation in management and aims for gender parity in top management by 2030. The company supports programs like "Girls Love Tech" and "Scale Up Women" to encourage women's participation in STEM careers and entrepreneurship.

Iberdrola Initiatives: an energy company has launched initiatives to promote women in STEM professions. It has set a goal to increase the number of female employees and their representation in senior positions.

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Innovation Layer of the Digital Gender Gap

Women in Spain are significantly underrepresented in the professional innovation landscape. In the period from 2018 to 2022, women made up only 37% of the total R&D workforce in Spain, a figure that has decreased in innovative companies to 28.2% of the staff in 2023, a slight decrease from 28.8% in 2020.[456] Of all researchers in Spain, women constitute roughly 42% but only about 31% of researchers in the business enterprise sector, where most private R&D and product innovation take place.[457] This under-representation is mirrored downstream: the Ministry's Mujeres e Innovación 2024 shows women make up just 28.8% of personnel in innovating firms, with women's roles concentrated in support functions rather than core R&D or technology leadership.[458]

While women hold a majority of positions in R&D management (68.3%), their presence in more creative and strategic roles remains low.[459] For example, women accounted for only 35.5% of inventors on patents, a stark contrast to the 64.5% of men.[460] In key sectors like agriculture, industry, and services, women's representation in innovative companies does not exceed 30%.[461] Furthermore, a 2024 report reveals that 61.3% of ICT companies in Spain have no female ICT specialists on their payroll, highlighting the urgent need to integrate women into these roles.[462]

The underrepresentation of women in the creation of new technologies has a direct impact on the products and services that shape modern life. According to the Spanish Patent and Trademark Office (OEPM), women represented 25.5% of listed inventors on national patent applications in 2023, rising to 27.6% in 2024.[463] That is the evidence of improvement, yet still implying that roughly three-quarters of named inventors are men. At the European level, the European Patent Office finds that Spain is among the higher-ranking EU countries for applications that include at least one-woman inventor (46%), but that measure is less stringent than the OEPM's share of all inventors and should be interpreted with care when comparing men and women directly.

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[456] Ministry of Science, Innovation and Universities. Women and Innovation 2024 Report: Executive Summary. Madrid: Ministry of Science, Innovation and Universities, May 10, 2024. https://www.ciencia.gob.es/dam/jcr:4544fda9-be97-40cd-bb80-131b769b8003/WomenInnovation2024_ExecutiveSummary.pdf

[457] Ministry of Science, Innovation and Universities. Female Scientists in Figures 2025: Executive Summary. Madrid: Ministry of Science, Innovation and Universities, March 2025. https://www.ciencia.gob.es/dam/jcr:e731697c-e0d9-4f33-a792-1427b8be1e7d/CientificasCifras2025_RE_acc_en.pdf.

[458] Ibid.

[459] Segovia Pérez, Mónica, Rosa Belén Castro Núñez, Rosa Santero-Sánchez, and Pilar Laguna-Sánchez. "Being a Woman in an ICT Job: An Analysis of the Gender Pay Gap and Discrimination in Spain." New Technology, Work and Employment35, no. 2 (July 2019): 120–135. https://doi.org/10.1111/ntwe.12145.

[460] Ibid.

[461] Ministry of Science, Innovation and Universities. Women and Innovation 2024 Report: Executive Summary. Madrid: Ministry of Science, Innovation and Universities, May 10, 2024. https://www.ciencia.gob.es/dam/jcr:4544fda9-be97-40cd-bb80-131b769b8003/WomenInnovation2024_ExecutiveSummary.pdf

[462] Ibid.

[463] Oficina Española de Patentes y Marcas (OEPM). "Home." Accessed September 21, 2025. https://www.oepm.es/en/.

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Table 26: Researchers, specialists and innovators in Spain by gender

Indicator	Women	Men
Researchers (all sectors, 2022)	42%	58%
Researchers – business sector (2022)	31%	69%
Personnel in innovating firms (2023)	28,8%	71,2%
Digital specialists who are women (2023)	19,4%	80,6%

Sources: Científicas en Cifras 2023, Mujeres e Innovación 2024, ONTSI

In the field of AI, systemic biases can be inadvertently introduced and amplified. Experts warn that AI systems trained on data filled with gender stereotypes can perpetuate and even worsen existing inequalities.[464] Recognising this risk, the Spanish government has made the ethical governance of AI a national priority. The National Artificial Intelligence Strategy (ENIA) emphasises the development of inclusive and sustainable AI to reduce the gender and digital divides.[465] The Spanish Agency for the Supervision of Artificial Intelligence (AESIA) was established to oversee the ethical and safe use of AI and to promote models that avoid bias.[466] Initiatives like a workshop for young people aged 9 to 16 have been used to demonstrate how AI models like ChatGPT and Dall-E can reproduce gender stereotypes, underscoring the importance of diversity in the teams that develop these technologies.[467] Recent sectoral evidence in Spain[468], such as trade-union testing of generative AI tools that reproduced gender-stereotyped role attributions, keeps the issue salient for innovation governance and training curricula.

Women entrepreneurs

In innovative entrepreneurship, only 10% of Spanish start-ups are founded solely by women, compared with 59% founded solely by men; mixed-gender founding teams account for the remaining 31%.[469] Public financing patterns also matter for scaling skills within firms: longitudinal data show that, across companies financed by the national innovation agency in 2014–2022, women represented 22.7–26.0% of existing employment, while women's share

[464] Ministry of Economic Affairs and Digital Transformation (MINECO), Spain. "Gender Biases in Artificial Intelligence". https://portal.mineco.gob.es/es-es/comunicacion/Paginas/Sesgosdegenero_IA_ICEX.aspx.
[465] Ministry of Economic Affairs and Digital Transformation (MINECO), Spain. "Gender Biases in Artificial Intelligence." https://portal.mineco.gob.es/es-es/comunicacion/Paginas/Sesgosdegenero_IA_ICEX.aspx.
[466] Spanish Agency for the Supervision of Artificial Intelligence (AESIA). "Ensuring Ethical and Responsible AI." https://aesia.digital.gob.es/en/es.
[467] Ministry of Economic Affairs and Digital Transformation (MINECO), Spain. "Press Release: Digitalization and Artificial Intelligence." May 14, 2024. https://digital.gob.es/en/comunicacion/notas-prensa/secretaria-digitalizacion-e-inteligencia-artificial/2024/05/2024-05-14.
[468] El País. "Spain's Economic Outlook for 2025." El País, March 27, 2025. https://elpais.com/economia/2025-03-27.
[469] South Summit. "Entrepreneurship Map 2024." October 2024. https://www.southsummit.io/wp-content/uploads/2024/10/VWEB-MAPA-EMPRENDIMIENTO-2024.pdf.

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of *new* jobs created reached 33.0% in SMEs and 35.8% in non-SMEs.[470] That is still below parity but trending upward where growth and training opportunities concentrate.

While comprehensive data on women homemakers is scarce, targeted initiatives and studies shed light on the role of women in rural areas.[471] Far from being passive digital consumers, a 2023 study of young rural women found them to be a vital force for the revitalization of their communities through entrepreneurship.[472] These women are more likely to successfully consolidate long-term businesses than their male rural counterparts and urban women. However, they often identify fewer entrepreneurial opportunities and have less access to crucial support networks compared to women in urban centres.[473]

For women homemakers seeking to transition into innovation-adjacent activity, national equality and care policy documents underline how unpaid care loads constrain time and mobility for formal training; mainstream initiatives increasingly incorporate modular, remote or hybrid learning to accommodate these constraints (e.g., Ministry and SEPE communications signposting rural women to training and entrepreneurship supports).[474] While these sources are policy- and programme-oriented rather than statistical series, they reinforce a skills-first approach for groups typically absent from R&D careers.[475]

[470] Ministry of Science, Innovation and Universities. Women and Innovation 2024 Report. Madrid: Ministry of Science, Innovation and Universities, 2024. https://www.ciencia.gob.es/dam/jcr:735fdaa3-5120-473f-a49b-772a9d3f5a95/MujeresInnovacion2024.pdf.

[471] RedPAC. "Spain Launches a Digital Training Program for Rural Women." Accessed September 21, 2025. https://redpac.es/en/news/Spain%20launches%20a%20digital%20training%20program%20for%20rural%20women.

[472] Grass Ceiling. "Young Rural Entrepreneur in Spain." Accessed September 21, 2025. https://www.grassceiling.eu/young-rural-entrepreneur-spain/.

[473] Ibid.

[474] Instituto de las Mujeres. "Instituto de las Mujeres." https://www.inmujeres.gob.es/.

[475] Servicio Público de Empleo Estatal (SEPE). "Servicio Público de Empleo Estatal." Accessed September 21, 2025. https://www.sepe.es/HomeSepe/.

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BEST PRACTISES BOX: Notable Female Tech Entrepreneurs

Spain's entrepreneurial landscape is rapidly growing, driven by innovative women who are making significant contributions in technology and research and development:

Ana Maiques: CEO & co-founder of Neuroelectrics (brain-stimulation medical tech), Leading figure in Spanish high-growth tech; advocate for women in STEM.

Carlota Pi Amorós: Executive President & co-founder of a renewable energy company Holaluz, a clean-tech pioneer.

Carmen Cilveti Lapeira: Co-founder & CEO of Jammer, entrepreneur in property-tech; minority-led startup in Costa del Sol.

Cristina Garmendia: Founder of biotech firm Genetrix and VC YSIOS; former Science Minister. Bridging science, policy and investment and life-science leadership.

Juani Bermejo Vega: quantum computing researcher, activist, and the most senior transgender woman in quantum computing in Europe.

Cristina Fernandez Romero / Ines Echevarría: Co-founders of Uttopy (NGO-tech for micro-activism), Social-tech entrepreneurship by women in Barcelona.

Key Insights & Trends

Access and Connectivity:

- Spain is a European leader in connectivity, with nearly universal internet access (95%) and a minimal overall gender gap in usage. However, a significant urban-rural divide persists, with 96% of urban residents using the internet compared to 93% in rural areas. A new "last mile" divide has emerged where over 75% of fixed connections use outdated in-home Wi-Fi equipment, which degrades performance despite the country's extensive fibre network.

Skills and Competencies:

- While Spain ranks highly in the EU for overall digital skills, with 66.2% of its population possessing at least basic competencies, a skills gap remains. A slight overall gender gap favours men, but a deeper look shows women are more concentrated in the "basic" skill category, while men are more prevalent in "advanced" skills. This is especially true in technical areas, with a 2023 study of youth showing that only 18.3% of young women could repair devices, compared to 32.6% of young men. A profound "grey digital divide" also exists, with only 60% of citizens aged 65 to 74 using the internet, a stark contrast to the near 100% usage rate among young people.

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Gendered Usage Patterns:

- The gender gap in Spain is defined not by who is online, but how they use digital tools. Women's digital engagement is more focused on communication and online purchasing, with women having a slightly higher rate of making online purchases than men. However, men show higher proficiency in more technically demanding areas like content creation and a higher level of awareness of how technology companies use personal data. This usage divide is particularly sharp for older adults, as online participation in civic and commercial activities drops off dramatically with age.

Workforce and Leadership:

- A significant gender gap persists in the digital labour market. Women account for only 20% of Spain's ICT specialists and just 16% of professionals in STEM fields. This underrepresentation is exacerbated in leadership, where women hold only 5.1% of technology management roles. Furthermore, while the overall gender pay gap has narrowed, a persistent, unexplained wage gap of 12-13% remains between men and women in similar jobs.

Innovation and Entrepreneurship:

- Women are severely underrepresented in the innovation ecosystem. Only about 20% of innovative startups are founded by women, a figure that has remained stagnant for a decade. This is mirrored in the funding landscape, where only 7% of financing rounds in Europe went to all-female teams in 2023. Women are also underrepresented in R&D roles, making up only 37% of the R&D workforce and just 35.5% of inventors on patents. This lack of diversity in creation extends to systemic biases in AI, with a national strategy being established to promote the ethical governance of AI and reduce gender and other biases.

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Conclusion

When we look at the digital gender gap, there are five key areas to consider: access, skills, usage, employment, and innovation. While the European Union has made strides in providing equal access to basic digital tools, there's still a lot to unpack when it comes to how women engage with technology. Many women face obstacles due to unequal responsibilities at home, differing economic situations, and societal norms that hold them back. This means that even when they have access to technology, the quality of their engagement and the outcomes they experience can still be quite uneven.

For instance, women are still underrepresented in advanced tech skills, ICT jobs, leadership positions, and entrepreneurial ventures. As new technologies like AI come into play, they often highlight and even worsen these existing gender biases. We're seeing issues such as algorithmic discrimination and a lack of female voices in tech decision-making roles. It's clear we need frameworks that prioritise inclusive governance in AI and technology.

Looking at different countries, Czechia, Italy, Malta, and Spain, reveals that some are making more progress than others. This often comes down to how committed they are to gender equality, the structures in place, and the cultural attitudes they have. There are some great examples out there: for example, Spain's PROFEA Program and Italy's Women and Digital initiatives, which show that when we focus on local needs and take an intersectional approach, we can really start to break down barriers.

To truly aim for digital justice, our future policies need to go beyond just making sure everyone has access. It's all about empowerment and leadership for women in digital spaces. We need continued investment in gender-sensitive education and supportive environments for women in tech and entrepreneurship. We should also make it a priority to incorporate gender perspectives into how we govern digital and AI technologies. Ultimately, if we want a digital future in Europe that's fair and inclusive, we have to ensure not just equal participation but also a shift in power dynamics. It's about making sure that everyone's voice is heard and represented as we shape the digital landscape together.

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Hypatia: Brno, Palermo, Valletta, Málaga

2025