Spain

Structural Focus - Digital Justice

Policy Recommendations

1.Mandate gender impact assessments (GIAs) for high-risk AI systems

It is recommended that the Spanish Agency for the Supervision of Artificial Intelligence (AESIA) be formally empowered to develop and mandate the implementation of Gender Impact Assessments (GIAs) as a crucial element of the "fundamental rights impact assessment" required for high-risk AI systems, as stipulated under the EU AI Act.

The rationale for this recommendation lies in the need to translate the ethical principles articulated within Spain's National AI Strategy into enforceable regulatory practices. By instituting GIAs, developers and deployers of AI systems would be compelled to proactively evaluate and address potential disparities in impact, particularly concerning how their technologies might disproportionately affect women or reinforce existing stereotypes prior to deployment.

The EU AI Act serves as a high-level legal framework governing high-risk systems, establishing the necessity for these assessments. Additionally, Canada’s "Algorithmic Impact Assessment (AIA)" tool presents a government-sanctioned precedent for a structured approach to bias and impact assessment processes.

2.Promote "ethical AI by design" through public procurement

The Spanish public sector should promote "Ethical AI by Design" through public procurement policies. Specifically, all artificial intelligence systems procured should meet a rigorous "Ethical AI by Design" standard, which necessitates evidence of training on diverse datasets, algorithmic transparency, and successful bias audits, particularly focusing on gender bias. This approach leverages the government's purchasing power to cultivate a market for ethical AI, establishing a national benchmark for the private sector. The Finnish "AuroraAI" program serves as a model, showcasing a human-centric and ethical framework for deploying AI in public services.

Additionally, the establishment of the Spanish Agency for the Supervision of Artificial Intelligence (AESIA) exemplifies leadership in ethical governance, equipped to implement essential measures such as mandatory Gender Impact Assessments to ensure fairness and mitigate bias in AI systems.

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Spain

Acces Layer of the Digital Gender Gap

Identified Issue:	Identified Issue: Spain demonstrates near-universal connectivity, but this masks a persistent regional divide (96% urban vs. 93% rural usage) and a "new divide" in the quality of access (e.g., outdated in-home hardware), both of which disproportionately affect women in marginalised groups.

Policy Recommendations

1.Mandate "meaningful connectivity" in universal service obligations

It is recommended that Spain's national digital strategy, including the UNICO Rural Development Program, evolve to mandate "Meaningful Connectivity" rather than just bandwidth. This requires providing hardware upgrade support, such as vouchers for modern routers, to low-income rural households.

This policy would address the "in-home" hardware bottleneck that undermines high-speed fibre investments, ensuring infrastructure spending translates into tangible quality improvements, particularly for rural women. The Alliance for Affordable Internet (A4AI)'s "Meaningful Connectivity" framework provides a clear definition for this standard, while the US BEAD Program serves as a large-scale precedent for investing in both infrastructure and adoption gaps.

2.Integrate Digital Literacy with Rural Development

It is recommended to enhance and institutionalise digital literacy initiatives for women within rural employment programs such as PROFEA. These programs should be co-designed with local women's associations to meet their specific economic and social needs, including digital agriculture, e-commerce for local crafts, and e-health access.

This approach addresses the intersectional challenges of gender and geography. Although 93% rural internet usage suggests accessibility, it often masks lower empowering use among women. By embedding digital skills training within an established economic framework like PROFEA, the relevance and adoption of these initiatives for women in agriculture are likely to improve.

Supporting this recommendation, research from the European Commission's Joint Research Centre emphasises the need for skills-based interventions alongside infrastructure improvements, demonstrating the potential benefits of integrating digital literacy into rural employment strategies.

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Hypatia

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

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Usage Layer of the Digital Gender Gap

Identified Issue:	Women's digital engagement is often channeled toward passive use or managing domestic tasks. This "time conflict" is a primary barrier, with 41% of European female entrepreneurs citing work-life balance as an obstacle, limiting their capacity for deep professional digital engagement.

Policy Recommendations

1.Invest in universal care infrastructure

Prioritising significant and sustained public investment to expand accessible, affordable, and high-quality formal care services, particularly childcare for children aged 0-3 and elder/dependent care, is strongly recommended, aligning with the EU Care Strategy. This policy directly addresses the fundamental issue of "time poverty," which disproportionately limits women due to unpaid care responsibilities, thereby enhancing their capacity to engage in advanced digital upskilling, entrepreneurship, and innovation. The efficacy of this approach is well-supported: research from the OECD (e.g., the "Dare to Share" report) consistently demonstrates a robust correlation between investment in care infrastructure and increased female labour market participation and gender equality. Therefore, investing in universal care infrastructure is not merely a social measure but an essential economic strategy for fostering inclusive growth.

2.Promote and incentivise "Right to Disconnect" and flexible work in tech

Strengthening Spain's existing "right to disconnect" laws and incentivizing genuinely flexible work arrangements (like remote options, flexible hours, or compressed work weeks) within the high-intensity ICT sector is recommended. Fiscal incentives, such as tax credits for certified policies, should encourage adoption, crucially ensuring these arrangements do not incur career penalties for women.

The rationale is clear: such policies directly mitigate the "time conflict" and burnout stemming from caregiving responsibilities, which contribute significantly to the "leaky pipeline" hindering women's retention and advancement in tech. This approach aligns with the EU Work-Life Balance Directive (2019/1158) and is supported by research from organisations like Catalyst, demonstrating the positive impact of flexibility on women's careers. While flexible work addresses symptom management, tackling the root cause of unequal care burdens, as exemplified by policies like Germany's "Elterngeld" which encourages shared parental leave and part-time work.

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Skills Layer of the Digital Gender Gap

Identified Issue:	Spain shows near-parity in basic digital skills, but women exhibit a deficit in advanced skills (35% women vs. 37% men) and technical confidence, which is necessary for high-value jobs.

Policy Recommendations

1.Launch advanced digital skills accelerators for women

To address the "advanced skills gap," where women often possess basic digital skills but struggle to transition into specialized, high-income roles, a portion of the National Plan for Digital Skills budget should be allocated to "Advanced Digital Skills Accelerators." These bootcamps must target adult women, especially career-changers or those re-entering the workforce, and focus on high-demand areas like artificial intelligence, data analytics, and cybersecurity.

To ensure these pathways are effective, they should be structured as public-private partnerships with industry leaders, such as Telefónica and Iberdrola, to offer subsidised tuition and essential wrap-around support, like childcare vouchers. The efficacy of this approach is supported by successful global initiatives like "Women Who Code" and research from McKinsey & Company, which both emphasise the need for targeted training to elevate women into senior and technical roles within the tech industry.

2.Gender-responsive pedagogy in STEM education

The advanced skills gap observed in adults stems directly from the "leaky pipeline" in early education. Research indicates that girls often opt out of STEM fields not due to a lack of ability, but because of cultural stereotypes and low self-confidence, which biased teaching practices can reinforce. Therefore, it is recommended that mandatory teacher training on gender-sensitive pedagogy be established for STEM subjects (ISCED levels 1-3). This training must move beyond simple encouragement to actively address the "confidence-competence gap" by reforming assessment methods, promoting collaborative project-based learning, and systematically integrating female role models into the curriculum. This policy recommendation is supported by high-level frameworks, such as the EU Digital Education Action Plan (2021–2027), and validated by extensive research, including Stanford University's "Gendered Innovations" project, which details exactly how gender bias manifests in education and provides a clear basis for curriculum reform.

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Employment Layer of the Digital Gender Gap

Identified Issue:	Spain suffers from a techs' glass ceiling Despite strong overall female employment, women are severely underrepresented in specialized and leadership roles, comprising only 20% of ICT specialists (and only 5.1% of tech leadership).

Policy Recommendations

1.Strengthen enforcement of Royal Decrees 901/2020 & 902/2020 in the ICT sector

It is recommended that the enforcement of Royal Decrees 901/2020 and 902/2020 in the ICT sector be strengthened through the implementation of targeted audits of Gender Equality Plans (GEPs) and salary registers, specifically for medium and large enterprises categorised under NACE codes J61-J63. This measure aims to address the persistent gender disparities in technical and leadership roles within the sector.

To ensure accountability without resorting to immediate punitive measures, it is suggested that companies failing to demonstrate tangible progress in mitigating these gender gaps be required to develop and implement mandatory, time-bound corrective action plans, subject to follow-up audits. Furthermore, demonstrable progress on these plans could be linked to preferential access to future public R&D funding opportunities (such as those provided by the CDTI), participation in specific government support programs, or public recognition schemes.

2.Public-private co-funding for tech "returnships" and leadership accelerators

A national program should be established, co-funded by both the government and technology companies, to create paid "returnships" specifically designed for women re-entering the ICT workforce following care-related breaks. Concurrently, funding should be allocated for "leadership accelerators" aimed at preparing mid-career women in technology for senior management and C-suite roles. This initiative directly addresses the challenges of the "leaky pipeline" and "vertical segregation" within the sector, as returnships effectively mitigate skills decay and the loss of professional networks that often accompany career breaks. Furthermore, leadership accelerators are essential for bridging the existing 5.1% leadership gap. The program could draw on successful models, such as Ireland's "Women ReBOOT," which has demonstrated effectiveness in facilitating tech returnships.

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Innovation Layer of the Digital Gender Gap

Identified Issue:	Women remain significantly underrepresented in formalised research output, with only 35.5% of inventors on patents being women in Spain. This mirrors the stagnant EU trend where women account for only 9% of inventors overall , leading to a lack of diversity in the creation of new technologies.

Policy Recommendations

Integrating binding gender targets and budgeting in research funding

To address the gap, public R&D funding criteria should integrate binding gender targets for research teams. Specifically, national funding agencies (e.g., CDTI) should mandate that a minimum percentage of grants be awarded to projects led by female Principal Investigators (PIs) or research consortia achieving defined gender balance. This approach should be supported by gender budgeting practices to track resource allocation. This uses public funding as a direct lever to correct historical underrepresentation in creative and leadership roles, ensuring that the substantial female talent base in R&D management translates into tangible innovation outputs and corrects the low rate of patent participation.

Such policy is validated by the EU Horizon Europe framework, which requires all public institutions applying for funding to implement a Gender Equality Plan (GEP), and by RFOs in countries like Norway and Austria that have implemented funding targets to correct systemic imbalances in research leadership.

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