AI, democracy and gender equality: EU regulatory frameworks and the wager of gender mainstreaming

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Abstract

This article contends that gender mainstreaming in today's world constitutes a wager for all societies at the crossroads of democracy, technology and justice where multiple crises are experienced. At the same time, gender mainstreaming can be seen as the cornerstone of a possible cultural and political shift, to strengthen and revive democracy, in vision and in practice; it can be mobilised as a democratic innovation. Different actors, institutional and from civil society, have recently called for renewed efforts in mainstreaming gender in digital developments and governance. The paper assumes those calls as a basis from which to critically interrogate European regulation of AI through the dual lens of gender equality and mainstreaming. Could gender mainstreaming constitute a transformative principle in EU normative interventions for the digital age? And what research agenda may contribute to guiding the transformation towards renewed democratic visions and practices?

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Democracy, artificial intelligence and gender equality

In this paper, we argue that gender mainstreaming in today's world constitutes a wager for all societies at the crossroads of democracy, technology and justice. We thus critically interrogate European regulation of AI through the dual lens of gender equality and mainstreaming which we consider to be foundational principles in working towards a 'digital Europe.'

Democracies around the world are in a state of 'malaise' (Collins et al., 2020). Democratic backsliding and disillusionment with democracies, combined with a decline in political and civil liberties, have become global phenomena. Democracies in Europe are also struggling to address increasing social inequalities, political polarisation and unrest, and the rise of far-right political parties, to name just a few (Duina and Merand, 2020, EIU, 2024; Horowitz and Nieminen, 2024). What has also been highlighted is the extent to which instances of polarisation and radicalisation connect to gender issues (Bitzan et al., 2017; Verloo and Paternotte, 2018), build anti-gender ideological narratives and campaigns (Kovats, 2017; Kuhar and Paternotte, 2018), and deploy 'femonationalist' approaches (Farris, 2017) that weaponise feminist ideals in association with nationalist ideologies. Actions taken by the newly elected US administration[1] at the beginning of 2025 signal the global reach of efforts to disempower feminist voices and achievements, while affirming new (and aggressive) masculinities (Lundius, 2025), a trend that is highly visible across Europe as well. All this poses threats to women's rights and to women's capacity to participate in public and political life on their own terms, and in all their diversity, with implications for the democratic quality of European political systems. Furthermore, these developments challenge the possibility for the European Union (EU) to live up to its commitment to gender equality and gender mainstreaming which it has mandated since 1996, including in relation to media, traditional, digital and artificial intelligence (AI) technologies. It is in this context that the gendered implications of digital innovations and advancements in AI should be investigated.

Digital developments are transforming European citizens' ways of living, working, interacting, learning and engaging in politics (Hanna, 2010; Hayles, 2012), and AI plays a strategic role while raising new concerns deriving from the pervasive nature of changes as well as from the immense power of digital platforms that are not accountable to the public (Ford and Moss, 2020). Reflections on recent advancements in AI, including the launch of OpenAI's ChatGPT in late 2022, caused both fascination and apprehension. While we witnessed a rush of new investments in start-ups from private and public sectors alike, to develop and implement AI models and predict future scenarios (HRW, 2023; Laforge et al., 2023), there followed a heated discussion in the public sphere about the unprecedented social, political and ethical challenges posed by a whole new generation of AI systems. Especially since the Cambridge Analytica scandal that came to be known as an exemplary case of AI-driven tools used to manipulate (Facebook) users leading to political campaigns in the United States and United Kingdom (Cadwalladr and Graham-Harrison, 2018; Coeckelbergh, 2024), different authors have explored the impact of AI technologies on democracy.

Part of the ongoing debate on AI revolves around specific gender concerns, for example, the perpetuation of gender stereotypes in/by AI and strategies to mitigate their impact (Abedin et al., 2020; Liu and O'Connor, 2024); the underrepresentation of women and lack of diversity in the AI industry (Crawford et al., 2019); and the need to address the limited number of girls and women programmers and designers in AI technologies (Bartoletti and Xenidis, 2023; Lazzaroni et al., 2024). There is also a growing body of research that addresses the problem of treating gender as binary in the interplay with AI technologies, namely: harms derived and perpetuated from biases and stereotypes reflected in large language models (Chang et al., 2021), alongside challenges and possible (legal) implications of predictive algorithms and AI-powered surveillance systems such as automated body scanners, facial recognition devices, on trans and non-binary individuals at border security points and in social media (Costanza-Chock, 2018; Hunt and Quinan, 2022; Jung and Katyal, 2021). Further reflections focus on gender inequalities in specific domains that are being transformed by AI, like platform work (EIGE, 2021), or which highlight women's exposure to specific threats such as economic insecurity and health care (Capitology, 2024), not to mention the multiple threats to personal safety and the dangers of technology-facilitated violence (Chowdhury and Lakshmi, 2023). All of this calls for the design, adoption and implementation of policies at different levels to ensure artificial intelligence benefits everyone, including women and girls in all their diversity.

We observe that emerging regulatory frameworks and governance initiatives for AI are emerging across the world, in an attempt to provide guardrails for the trustworthy and responsible use, design and development of AI-powered technologies (Erman and Furendal, 2024). At the European level, the European Commission (EC) pushed the debate about the regulation of AI systems through the European Artificial Intelligence Act (AI Act), including a specific provision on 'general-purpose artificial intelligence' or 'foundation models', such as OpenAI's Generative Pre-Trained Transformer (GPT) model.

It should be noted that AI regulation is part of a broader commitment at EU level, in support of the European Digital Decade aimed at 'Shaping Europe's Digital Future'[2]. In due consideration of the EU's attempt to present itself as a global champion in regulating the digital sphere (Afina et al., 2024), gender mainstreaming in digital policy areas, and adequate consideration for gendered implications in AI normative frameworks, appear even more relevant. This is not a new issue, although it has not been widely explored. It is worth noting that almost ten years ago, Padovani (2016) examined the policy discourses of the European Digital Agenda, with the aim to assess the degree of the implementation of internationally agreed-upon norms of gender equality and gender mainstreaming; to examine the extent of the deployment of feminist knowledges and scholarship in the framing of digital policies, and to shed light on the production of new knowledge and analytical frameworks that could contribute to the understanding of the drivers of gendered power inequalities in media environments. She found that the specific objectives established by the Beijing PfA, and Section J in particular, were yet to be realised and that achieving gender mainstreaming in European digital policy was a major challenge. Ten years on, and with a huge wave of digital developments after, mainstreaming gender priorities across the digital

sphere and its governance remains an open issue, leading us to continue asking some core questions:

- Are gender in/equality concerns addressed in recent EU regulatory frameworks for AI, and in their implementation?
- Are the knowledge, understanding and concrete proposals deriving from institutional actors, as well as from feminist scholarship and advocacy coalitions, informing Europe's digital future in general and AI regulatory efforts in particular?
- Finally, does (could) gender mainstreaming constitute a transformative principle in EU normative interventions for the digital age? And what could be its innovative potential?

Gender mainstreaming: from organising principle to democratic innovation

Promoted since the Beijing Conference as an 'organising principle' (Wiener, 2007) to ensure that decision-making across policy areas takes into account women's and men's different interests and needs, gender mainstreaming has been defined[3] and assumed[4] by the European Union since 1996, and evaluated by feminist scholars across three decades and various policy domains.

In the years following Beijing, scholarly efforts were made to clarify what gender mainstreaming was, and what it implied. Researchers recognised it was a contested concept, and saw it as both a new form of political and policy practices, as well as a new gendered strategy for theory development (Walby, 2005). They tried to explain how feminist ideas could be translated into policy at different levels; and wondered to what extent was gender mainstreaming transforming policy outcomes and the process of policymaking (True, 2003).

In the following decade – in recognition that mainstreaming did not translate into sustained practices, and that resistance could be found across institutions and policy domains (Lombardo and Mergaert, 2013) – European-funded projects such as Quing[5] and Mageeq[6] contributed to the development of frameworks for the implementation of gender mainstreaming, while fostering communities of practices and methods to assess inconsistencies in gender equality policy frames (Verloo, 2005). At the same time, feminist scholars exposed the macro and micro-level dynamics that shape the character and outcome of gender mainstreaming implementation (Celis and Meier, 2011; Paterson and Scala, 2018), and reflected on the nexus between feminist knowledges and gender mainstreaming across domains (Bacchi and Eveline, 2010).

Over the years there has been no shortage of tools to support the implementation of gender mainstreaming, including frameworks suggesting ways to address gender-sensitive areas in parliaments, employment, and judiciary domains (OECD, 2018); while the European Institute for Gender Equality (EIGE) committed to collect and make available instruments that provide clear guidance on how to implement gender mainstreaming in practical terms.[7] These include mechanisms to be activated at different stages of policy development: from policy ideation phase – making use of gender disaggregated data and statistics, carrying out gender analysis and planning, and organising

gender stakeholders consultation – throughout policy implementation phase – mobilising gender training and budgeting, gender audits and impact assessment, as well as adopting gender equality action plans – to conclude with gender-responsive policy evaluation.

And yet, as the Beijing Platform turns thirty, the debate is still open. Caywood and Darmstadt (2024) – after reviewing 27 years (1995–2022) of peer-reviewed literature on gender mainstreaming and scholarly publishing trends – highlight the shortcomings. Publications on gender mainstreaming have increased, but most researchers have European and USA academic affiliations and funding, while non-Western perspectives are lacking. Some policy domains have attracted more attention, particularly health and law, while others are disregarded, including media, communication and digital studies. Furthermore, collaboration between researchers and practitioners which may lead to better implementation of gender mainstreaming remains limited, while widespread low citations raise concerns about the very relevance of this literature. In the end, the authors identify key challenges in gender mainstreaming research to be addressed, which include conceptual clarity; academic-practitioner disjunctures; politics, leadership and organisational culture; men's roles; intersectionality; monitoring and evaluation.

As we critically investigate moves to establish Europe as a norm entrepreneur and global model regulator for digital and AI technologies, we argue that gender mainstreaming can (and should) still be adopted as a compass to guide scholarly investigations, as well as feminist interventions. Furthermore, given the challenges facing democratic regimes in Europe and around the world, we see gender mainstreaming as the cornerstone of a possible cultural and political shift to strengthen and revive democracy, in vision and in practice. In doing so, we align with Caravantes and Lombardo (2025 forthcoming) in suggesting that gender mainstreaming can act as feminist democratic innovation when it questions existing policy paradigms to address the claims, rights, and knowledge of formerly excluded or marginalised gender subjects and involve them in policy processes. In fact, by challenging the perceived gender neutrality of policies and institutional approaches, gender mainstreaming expresses a transformative potential that can be harnessed through intersectional inclusion and ensuring equitable and gender-fair participation in relevant processes (Celis and Meier, 2011). We, therefore, suggest that given its focus on fostering democratic accountability, transparency, and responsiveness towards citizens – particularly women and minoritised gender subjects – gender mainstreaming may also contribute to democratic 'renewal.'

Based on these premises, we now map out recent international calls for mainstreaming gender in digital media and particularly AI regulatory arrangements, and we critically evaluate European responses to those calls. We reflect on what is happening (or not) to make gender mainstreaming a reality across European digital policies. Finally, we discuss the findings and propose a research agenda that may guide future investigations at the intersection between democratic challenges, AI and digital developments, gender equality and justice concerns.

AI governance and gender equality

There is no lack of vision or concrete proposals, to inspire and support gender mainstreaming in governing the digital space and, in particular, AI. This richness – recently consolidated through provisions and recommendations by institutional actors as well as civil society organisations and feminist transnational networks – has yet to be fully harnessed by policy-makers. Pathways to mainstreaming a gender approach across the digital realm, can be found in recent interventions by supranational institutions. For example, in 2024, the United Nations General Assembly (UNGA) passed a landmark resolution titled 'Seizing the Opportunities of Safe, Secure, and Trustworthy Artificial Intelligence Systems for Sustainable Development', calling upon:

> Member States to adopt specific measures to close the gender digital divide and to ensure that particular attention is paid to access, affordability, digital literacy, privacy and online safety, to enhance the use of digital technologies, including artificial intelligence systems, and to mainstream a disability, gender and racial equality perspective in policy decisions and the frameworks that guide them. (UN, 2024a, par. p)

In September 2024, on the occasion of the *Summit of the Future*[8] the UNGA adopted a 'Global Digital Compact', as a comprehensive framework for global governance of digital technology and artificial intelligence, which states that international cooperation will empower all women and girls, encourage leadership of women, mainstream a gender perspective and counter and eliminate all forms of violence, including sexual and gender-based violence that occurs through or is amplified by the use of technology (UN, 2024b, Principle d). Worth mentioning as part of the UN effort to regulate AI with a gender focus is the 2023 Report elaborated by the Policy Network on Artificial Intelligence (PNAI) of the Internet Governance Forum (IGF)[9] titled: 'Strengthening a multistakeholder approach to global AI governance, protecting the environment and human rights in the era of generative AI'. The concluding section on 'Gender' highlights that, in order to realise AI's potential to reduce discrimination, awareness, transparency and oversight are required. Furthermore, 'Governments are currently developing legislation to put in place mandatory artificial intelligence audits, which need to integrate a gender perspective' while 'voluntary ethical frameworks should include safeguards to guarantee gender-aware application and oversight' (Ahmed, 2023, 4.2).

More concretely, already in 2022 the United Nations Organisation for Education, Science and Culture (UNESCO) adopted a set of 'Recommendations on the Ethics of AI' aimed at offering a global instrument focused not only on the articulation of values and principles but also on their practical realisation, with a strong emphasis on inclusion, issues of gender equality and protection of the environment and ecosystems. Policy Area 6 of the UNESCO 'Recommendations' is dedicated to 'Gender' (UNESCO, 2022: 32) and states that Member States should ensure that 'national digital policies include a gender action plan'; invest to create opportunities for girls' and women's participation; ensure that technologies do not exacerbate the already wide gender gaps (wage, education, access to top management positions); proactively

redress stereotypical and discriminatory biases and avoid negative effects, particularly harassment and violence.

Following on from the Recommendations and in collaboration with Women for Ethical AI (W4EAI), in 2024 UNESCO published an 'Outlook Study on Artificial Intelligence and Gender' (UNESCO, 2024). One of the crucial findings of the study was the lack of inclusion of gender perspectives in emerging regulatory frameworks and AI-related policies. The Global Index for Responsible AI, which assessed 138 countries, shows that only 18 have frameworks that … 'make any significant reference to gender issues in relation to AI' (UNESCO, 2024: 5) and, even then, mentions are superficial. To address these gaps, the study proposes approaches and tools to improve AI's impact on gender equality, including an 'ethics by design' approach and implementation of feminist and gender-transformative practices. It also provides actionable recommendations, amongst which the adoption of inclusive policies that promote equitable participation in the design, use, and governance of AI, through a holistic approach (UNESCO, 2024, Section 3).

In the same year, the Committee on the Elimination of Discrimination against Women (CEDAW) elaborated a 'General Recommendation' (n. 40) on equal and inclusive representation of women in decision-making systems (CEDAW, 2024), making the case for the importance of achieving parity between women and men concerning decision-making on AI technologies. The document stresses the potential of AI systems, and their algorithms, in reflecting and amplifying gender biases that lead to discriminatory practices. This dynamic brings the risk of reversing historical achievements in gender equality and also introducing new forms of gender discrimination. Therefore, the Recommendation provides nation states with a comprehensive guidance to achieve parity in decision-making in all sectors, both public and private, including STEM and AI in particular.

In preparation for the 2025 69th meeting of the Commission on the Status of Women (CSW), in summer 2024 UN Women organised an expert meeting dedicated to 'Beijing +30: Emerging issues and future directions for gender equality and women's rights', so as to foster a conversation around three core themes that mark Beijing +30: Accountability, Recommitment, and Resources. Written interventions were invited to assess the progress made over the three decades and the emerging challenges, including 'how do we harness the opportunities offered by technology and artificial intelligence for gender equality and women's rights while avoiding its downsides?' Contributions were meant to suggest effective mechanisms to ensure accountability, reclaiming citizens' voices and mobilising resources to realise the vision. Relevant to our discussion is the text proposed by Hija Kamran, digital rights advocate and a member of the Association for Progressive Communications (APC) on 'Revisiting the Beijing commitment in the Digital Era' (Kamran, 2024). With regard to AI, Kamran highlights the challenges to gender equality, particularly patriarchal control over technology design and access, and 'deepfakes' mostly targeting women and gender-diverse individuals, but she also invited consideration of the positive applications of AI such as accessibility in sectors such as healthcare and education. Once more, her concluding remarks stress that the legislation intended to regulate artificial intelligence technology is often unable to keep pace with the rapid advancements in the technology itself, suggesting a 'pressing

need to develop regulatory frameworks grounded in feminist principles to guide governments in effectively controlling the use of AI against women in all their diversities' (Kamran, 2024: 16).

It is important to highlight that Karman's contribution is but one sign of the longstanding global feminist commitment to introduce principled visions and concrete proposals to redress discrimination in and through (digital) media (Gurumurthy, 2017; see also Gallagher and Vega Montiel, 2023). Feminist contributions to including gender and intersectional concerns in digital governance date back to the early 2000s (Droussu and Jensen, 2005; Padovani, 2023), and have evolved ever since. They have turned into transnational networks intervening in international policy fora at the crossroads of gender issues and communication developments, such as the Commission on the Status of Women (CSW), the Internet Governance Forum (IGF),[10] the UN Summit of the Future (2024) and the WSIS + 20, which also celebrated an anniversary in 2025.[11] Feminist contributions have achieved visibility as well as an increasing level of sophistication in their recommendations to design and implement policies for gender equality in the digital realm and AI, as demonstrated at the 67th session of the CSW, held in 2023. On that occasion, activists and civil society organisations called for a 'New gender deal in media and communications' (UNESCO, 2014), and promoted feminist visions, such as 'The Declaration of Feminist Digital Justice' presented by Development Alternatives with Women for a New Era (DAWN), Feminist Digital Justice and ITforChange (ITforChange and DAWN, 2023).[12] The Declaration denounces how in 'the extractive value chains of the data economy, embedded and embodied knowledge are supplanted by depersonalised machine intelligence', and claims a new sociality that can 'repoliticise data, resignify intelligence, and recreate digital architectures'. Collective agency, solidarity and community-based participatory democracy are identified as core values to realise feminist digital justice through a renovated 'Feminist Paradigm for Digital Governance' that acknowledges 'Feminist digital justice as a transversal policy axis' (ITforChange and DAWN, 2023: 6). When it comes to AI, the Declaration states:

> The trajectories of AI deployment in the economy must be scaffolded by global institutional frameworks that protect human rights, social justice and gender equality at the frontiers of innovation. We need to move beyond non-binding AI ethics to a rule-of-law-based AI paradigm committed to eliminating socio-cultural bias in AI systems, promoting the creation of public value and ushering in redistributive justice in the AI economy. (ITforChange and DAWN, 2023: 3)

Later on, in view of contributing to the Global Digital Compact, a coalition of civil society organisations – comprising the APC, Equality Now and Women Leading in AI – elaborated the 'Feminist principles for including gender in the GDC'. The document suggests a revision of core principles enshrined in the GDC – those of openness, freedom and security – so that they could be infused with an intersectional feminist perspective, indicating a path to mainstream gender concerns in digital and AI developments. Principle 9 proposes that '… Equality-by-design principles, including transparency and human rights and gender rights impact assessments, are incorporated into the development of any algorithmic decision-making systems or digital technologies prior to deployment'; while Principle 6 calls for the inclusion of 'measures to increase the

participation and representation of women in all their diversity across all levels of the technology sector including in the design, leadership and decision-making processes at national and international levels' (Kamran, 2024).

Concrete proposals have also been made by feminist networks in the lead up to the WSIS + 20 celebration F proposed a 'New Gender Deal for WSIS + 20' founded on feminist principles of equity, equality, inclusion, fairness, solidarity and justice. AI's harms – such as amplification of gender-based violence through deepfakes and disinformation or the perpetuation of discrimination and prejudice against women and marginalised groups – call for measures that go beyond mere representational equity:

> AI regulation should address structural imbalances … AI governance measures need to shift from risk reduction to advancing strong institutional frameworks for audit and enforcement; ensure the protection and promotion of human rights … with special emphasis on marginalized groups and people; … legitimize a role for public authorities and democratic governance mechanisms in AI development.

Finally, in the European context, the Committee of Ministers of the Council of Europe (CoE) commissioned a review of the impact of AI and its potential for promoting equality, as well as risks of algorithmic discrimination. Findings have informed the negotiation of the 'Framework Convention on Artificial Intelligence and Human Rights, Democracy and the Rule of Law' (CoE, 2024), opened for Member States signature on 5 September 2024. By adopting a multi-stakeholder approach, the aim of the Framework Convention is to 'ensure that activities within the lifecycle of artificial intelligence systems are fully consistent with human rights, democracy and the rule of law, while being conducive to technological progress and innovation' (CoE, 2024) including the fundamental principle of 'gender equality' and non-discrimination (Art. 10).

The above-mentioned interventions provide ample guidance to implement a gender mainstreaming approach in the development and deployment of normative frameworks for AI: from institutional approaches affirming that technology should not exacerbate gender gaps and discrimination, but rather contribute to redress them through awareness raising, education and ethical frameworks, to feminist visions of digital justice grounded in the conviction that digital architectures need to be re-created, data politicised and digital paradigms constantly interrogated. On this basis, we now focus on the European AI Act process and explore the extent to which gender mainstreaming has percolated through such developments and current moves towards implementation.

European regulation of AI: a path for a feminist democratic innovation?

We argue that gaps in the European AI Act, combined with recent changes made in the third draft of the General-Purpose AI Code of Practice, hinder the advancement of gender mainstreaming as a path for a feminist democratic innovation in Europe. Arguably, the watering down of the fundamental and women's rights agenda in EU regulatory frameworks for AI and their implementation has the potential to cause a negative domino-like

effect in AI regulation around the world, as the EU presents itself as a model for regulating the digital sphere.

On 13 March 2024, the European Parliament approved the 'AI Act' (Regulation EU, 2024/1689), which was endorsed by the majority of MEPs (European Parliament, 2024), and on 1 August 2024, the AI Act came into force (European Commission, 2024a). This is the world's first legal framework on AI, and it employs a human-centric, risk-based regulatory approach to ensure that AI developments and applications are trustworthy. The risk-based approach includes AI systems that pose unacceptable risks such as social scoring and biometric categorisation of citizens which are all banned; high risk AI systems that are regulated under the AI Act, such as AI systems used in education (eg scoring of exams); transparency risks concerning AI systems whose use calls for transparency, such as deepfakes or AI-generated contents that shall be labelled as such; and AI systems that pose minimal or no risks, such as spam filters. The regulatory framework was first proposed by the European Commission in April 2021 after a series of milestones that started in March 2018 with the Commission's press release entitled, 'AI expert group and European AI alliance', which announced the setting up of an expert group aiming to prepare a proposal for ethics guidelines for trustworthy AI.

The AI Act thus results from many years of intense negotiations, involving different stakeholders, such as international, regional and national institutional bodies, members of academia and experts, industry and civil society organisations, think-thanks, NGOs, and individual citizens. During this process, it is worth mentioning the White Paper on AI: a European approach to excellence and trust, that was published by the European Commission in February 2020, together with the launch of an online public consultation, with the aim to encourage the adoption of AI systems, while mitigating the risks associated with their use. The White Paper (European Commission, 2020) engaged a wide range of stakeholders from public and private sectors, who contributed to the development of the 'impact assessment,'[13] which was published by the Commission together with the first draft of the AI Act (2021). The contributions arrived from the EU's 27 member states, but also from countries as diverse as Brazil, India, the UK and Canada, among others. However, based on publicly available information, it is not possible to identify whether feminist associations or NGOs dedicated to women's rights contributed to the policy process that led to the adoption of the AI Act.[14]

As for gender equality issues, two documents worth mentioning that were elaborated in the framework of the ongoing work of the European Commission on AI are: a 'Good practice guide' commissioned by the European Network of Equality Bodies (Equinet) (2020) to assess, monitor, build capacity and knowledge, and raise awareness of the potential discriminatory impacts of AI systems on gender equality and human rights; and an 'Opinion on Artificial Intelligence – opportunities and challenges for gender equality' produced by the EU Advisory Committee on Equal Opportunities for Women and Men (2020). We can trace similarities between both documents and the first draft of the AI Act (EC, 2021a, 2021b) concerning algorithmic bias and potential discriminatory practices in relation to AI systems deployed in job recruitment. Also, the discussion on how AI systems can potentially perpetuate or amplify existing inequalities and biases, specifically in relation to protected characteristics, is also present, even though Equinet's study addressed the issue in much more

detail. Furthermore, the Council of the EU (2020) called upon the Commission to present concrete proposals, highlighting the recommendations made by the Advisory Committee by stating

> …the use of AI may in certain cases also perpetuate and amplify discrimination, including structural inequalities. *Equality*[15] is of particular concern in this regard. We take note of the opinion on 'AI – opportunities and challenges for gender equality' adopted by the Advisory Committee on Equal Opportunities for Women and Men. (Council of the EU, 2020: 11)[16]

In order to assess whether the term 'gender equality' is employed as a foundational principle, we trace how it was used in the AI Act. In the document, the notion appears on three different occasions. The first mention is written on paragraph 27, and it is worth quoting in length:

> Diversity, non-discrimination and fairness means that AI systems are developed and used in a way that includes diverse actors and promotes equal access, gender equality and cultural diversity, while avoiding discriminatory impacts and unfair biases that are prohibited by Union or national law. (Regulation EU, 2024/1689, para 27)

The second occasion cites 'gender equality' among other fundamental rights while referring to the importance of protecting fundamental rights when classifying AI systems as high-risk (para 48). Thirdly, Article 95 lays down the rules for the drafting of voluntary codes of conduct and is where we encounter the third mention of 'gender equality.' While referring to specific requirements to all AI systems, Section 2(e) reads that the voluntary application of codes of conduct should assess and prevent, among other things, 'the negative impact of AI systems on vulnerable persons or groups of vulnerable persons, including as regards accessibility for persons with a disability, as well as on gender equality.' Also, for providers and, when appropriate, the deployers of all AI systems, high-risk or not, there is the promotion of the inclusion of other elements from the Ethics Guidelines for Trustworthy AI (EC, 2019), such as

> inclusive and diverse design and development of AI systems, including attention to vulnerable persons and accessibility to persons with disability, stakeholders' participation with the involvement, as appropriate, of relevant stakeholders such as business and civil society organisations, academia, research organisations, trade unions and consumer protection organisations in the design and development of AI systems, and diversity of the development teams, including gender balance. (para 165)

It is worth noticing that providers of non-high-risk AI systems are encouraged to develop codes of conduct on a voluntary basis. However, providers of general-purpose AI models, in case they do not comply with 'an approved code of practice or do not comply with a European harmonised standard shall demonstrate alternative adequate means of compliance for assessment by the Commission', as stated in Article 53(4).

According to Article 3(47), an AI Office was established on 24 January 2024 within the European Commission with the aim to contribute to 'the implementation, monitoring

and supervision of AI systems and general-purpose AI models, and AI governance'. The AI Office has a role in encouraging and facilitating Member States in the creation of codes of conduct for the AI Act. Although the AI Office was not constituted as an independent entity because it must report to the Commission, it employs a multi-stakeholder approach, including experts and the scientific community, industry organisations, think-thanks, civil society representatives for decision-making processes. Also, a scientific panel of individual experts, referred to by Article 68, shall contribute to the implementation and enforcement of the AI Act as well as advise the AI Office, particularly in regards to various matters concerning general-purpose AI models. According to its mandate, the scientific panel, selected by the Commission, should ensure gender balance and geographic representation (European Commission, 2024b) . In 2024, the AI Office issued two multi-stakeholder consultations, from July to September 2024 and from September 2024 to April 2025, to ensure diversity of voices contributing to the drafting of its first General-Purpose AI Code of Practice in a series of codes to be elaborated for the AI Act. There is still no publicly available information about the stakeholders that responded to the first round of consultations (EC, 2024c). Yet we can see from 'Section 2. General-purpose AI models with systemic risk' of the AI Office's document for public consultation, that there is an intention to address systemic risks associated with the design, development and deployment of general-purpose AI models. The AI Office is clear in stating the key role of the Code of Practice in defining the risk taxonomy, to subsequently assess and mitigate the risks (European Commission, 2024d). Systemic risks

> …refer to risks that are specific to the high-impact capabilities of general-purpose AI models (matching or exceeding the capabilities of the most advanced general-purpose AI models); have a significant impact on the Union market due to their reach; or are due to actual or reasonably foreseeable negative effects on public health, safety, public security, fundamental rights, or society as a whole, that can be propagated at scale across the value chain. (AI Act Article 3(65))

While examining the AI Act within European and UN frameworks of global AI governance and the precise role of the AI Office to address gender equality issues and algorithmic discrimination, Lütz (2024) found that 'neither the existing substantive nor the procedural enforcement architecture at European Union level is sufficient to detect, protect against and remedy gender-based algorithmic discrimination' (93). Furthermore, it is worth discussing one of the loopholes of the AI Act concerning gender equality issues, which is its commitment to address violations of fundamental rights caused only by high-risk AI systems, in addition to the exemptions foreseen by the Act. As highlighted by Lütz (2024: 81–82), the Act foresees some derogation for some uses of AI systems such as those used in the labour market or education sector, respectively AI recruitment systems and AI test assessment, which might not be classified as 'high-risk,' in case they fall under at least one aspect of the criteria expressed in Article 6(2). If this is the case, the AI system will be out of the scope of the Act and therefore not required to implement its safeguards. So, if a private company deployed an AI model for recruitment, it may not fall under the category of 'high-risk,' which imposes the obligation for the company to conduct a fundamental rights impact assessment (FRIA). This

derogation could result in the introduction of gender biases and discriminatory practices (Lütz, 2024: 84).

The same critique comes from the Open Letter from civil society organisations across Europe entitled, 'The AI Act Must Protect the Rule of Law' that was written in the very final stages of negotiations of the AI Act in September 2023. Although the letter has no mention of gender equality in particular, it called upon EU legislators to strengthen the safeguards against violations of fundamental rights and other fundamental values. As stated in the letter: 'This accountability framework can only safeguard the rule of law and fundamental rights if it applies to all high-risk AI systems. Any loopholes or exemptions would undermine legal certainty and lead to the arbitrary exercise of power, which is fundamentally incoherent with the principle of rule of law'.[17] The letter also asks for mandatory inclusion of a fundamental rights impact assessment, as is required in the Digital Services Act (DSA), to ensure that the deployment of high-risk AI systems does not violate the principles of justice, accountability and fairness. The adopted AI Act lays down the obligations of deployers of high-risk AI systems of performing a FRIA prior to their deployment in Article 27.

At the time of writing, we can identify some main gaps concerning gender issues, which are in line with Lütz's findings (2024), and with civil society organisations' comments to the regulation. The loopholes pertain to safeguards only related to high-risk AI systems; the contested classification of AI systems as high-risk; the challenges in detecting gender-based algorithmic discrimination in light of violations against other fundamental rights; the fragmentation of the legal regime for persons seeking redress for harms caused by the use of AI systems; and the reliability on the creation of voluntary codes of conduct for non-high-risk AI systems. Furthermore, Mühlhoff and Ruschemeier (2025) highlighted and addressed a critical gap in the EU regulatory frameworks in regulating the digital sphere, paying particular attention to the General Data Protection Regulation (GDPR) (EU, 2016/679) and the AI Act. The authors argue that neither the GDPR nor the AI Act provides guardrails for secondary use of AI models as well as anonymised training datasets. Hence, they recognise the possession of both by big tech companies as a 'specific manifestation of informational power asymmetry' (12), which has implications for individual and societal risks. This legislation gap opens up space for 'discrimination, unfair treatment, and exploitation of vulnerabilities' (Mühlhoff and Ruschemeier, 2025: 2), including those of women and girls.

Regarding the challenges in seeking remedy for harms, in February 2025, the Commission abandoned the EU AI Liability Directive that was first proposed in September 2022 with the aim to 'improve the functioning of the internal market by laying down uniform rules for certain aspects of non-contractual civil liability for damage caused with the involvement of AI systems'.[18] The EU AI Liability Directive followed the objectives set by the 'White Paper on AI' and the European Parliament's request for the drafting of a proposal for an Artificial Intelligence Liability Directive. According to German MEP Axel Voss, the likely answer for the Commission's withdrawal, 'lies in pressure from industry lobbyists who view any liability rules as an existential threat to their business models' (Caitlin, 2025). This is to say that victims of gender-based algorithmic discrimination, for instance, caused by the involvement of AI systems, will have to look for recourse within the legal framework of their respective

national regimes instead of having the possibility to access an EU supra-national layer of redress.

A more concerning recent development that will open up an unprecedented opportunity for general-purpose AI model providers in disregarding fundamental and children's rights, and gender equality and mainstreaming in particular, are the changes made in the third draft of the General-Purpose AI Code of Practice. When the AI Act came into force it initiated what Cabrera et al. (2025) named a 'co-regulatory' process that established a working group, involving almost 1000 representatives of academia, AI industry and civil society groups. This working group is now engaged in the drafting of the General-Purpose AI Code of Practice, alongside the scientific panel above-mentioned. However, the third draft[19] elaborated by this multi-stakeholder group is raising deep concerns from not only members of the working group, but also representatives from civil society organisations. The main issue of concern is proposed changes to make systemic risk tiers optional for a broad range of risks, from public health, safety and security to fundamental rights, environment, democratic processes, to society as a whole, just to name a few (Cabrera et al., 2025). This unfortunate move undermines the European AI Act and consequently the EU's ambition to become a principled global model for AI regulation. More importantly, it absolves providers of general-purpose AI models in assessing and mitigating violations of fundamental and vulnerable groups' rights throughout the lifecycle of general-purpose AI models. General-purpose AI models constitute the basis for the development of a wide range of AI systems that are deployed in different sectors and areas of life. We can thus foresee the scale of the negative implications of the current proposed draft of the Code of Practice, which does a disservice in defining the taxonomy of risks associated with general-purpose AI models.

The assessment and mitigation of risks to fundamental rights ought not to be optional because it threatens the safeguarding of European values, and consequently women's rights. Arguably, the above-mentioned legislation gaps have the potential to hinder the advancement of gender mainstreaming, in addition to withdrawing guardrails concerning bias and discrimination in AI systems that already negatively affect women and other minoritised groups disproportionately.[20]

Discussion and proposals for a research agenda

Our analysis shows that the AI Act (EU, 2024) employed the notion of gender equality as a foundational principle to ensure that women and men's needs, equality in access and in representation are taken into account and promoted while designing, developing, deploying AI systems, and classifying AI systems as high-risk. Additionally, the Act encourages diversity and inclusion through the creation of voluntary codes of conduct and other requirements coming from the EU's Ethics Guidelines for Trustworthy AI. The latter makes explicit reference to gender balance and diversity, encouraging a multi-stakeholder approach when appropriate, from the design and development of AI systems to the creation of development teams of AI. We can therefore trace in the documents an intention to take gender equality into consideration, thus opening the possibility to address claims and rights of disadvantaged groups, particularly women. At the same time, we question whether the AI Act process can be seen as an effort that might produce the kind of cultural

and political shift whereby mainstreaming gender would become an element of democratic innovation and renewal, precisely at the time when the EU is struggling, on the one hand, to protect its *aquis* of democratic values and rule of law while trying, on the other hand, to position itself as a global digital (regulatory) power.

Realising the transformative potential of gender mainstreaming – so as to counter anti-gender and democratic backsliding and revive democracy (Caravantes and Lombardo, 2025 forthcoming) – would require not just challenging the supposed gender neutrality of digital regulation, but also consistently monitor the extent to which rights and knowledge of marginalised gender subjects are considered, as well as ensuring equitable and gender-fair participation in relevant policy processes. In the following discussion, we build on critical aspects pertaining to the AI Act process to suggest components of a gender-transformative research agenda that could be expanded well beyond the European context and the specific AI Act process. In doing so, we also recall shortcomings in gender mainstreaming research to date (Caywood and Darmstadt, 2024), particularly the need to bridge gaps between academic and practitioners and to listen to and welcome the voices of scholars and practitioners from the Global majority.

As analysts have reiterated over at least three decades, gender mainstreaming implies not only mentioning core principles in statutory regulations but also requires acknowledging the specific challenges posed by AI technologies to women and girls, as well as gender non-conforming communities. Furthermore, it requires offering guidance on how to implement foreseen measures – for instance, fostering ethics by design in technology and applying binding institutional frameworks – while soliciting the use of available tools like gender analysis, audits and budgeting. Moreover, it implies participatory processes, seeking co-responsibility of the different stakeholders involved so as to foster a more equitable democratic and care model. In reality, as we have seen, the commitment to gender equality becomes weakened and watered down through loopholes and gaps in the implementation phase. The above-mentioned changes in the third draft of the Code of Conduct, rather than fostering equitable decision-making environments, give unprecedented decision-making power to developers and deployers of general-purpose AI models to disregard altogether a broad range of systemic risks and human rights violations associated with the use of those systems. It remains to be seen how the current debate about the Code of Practice will evolve, but in case the changes remain, they have the potential to cause a domino-like negative effect for the Act's call for the development of voluntary codes of conduct by different sectors, while developing and deploying non-high-risk AI systems.

In this context, in order to evaluate, but also to contribute in fostering the democratic innovative potential of gender mainstreaming, future research should contribute to highlighting the extent to which women's and marginalised communities' concerns and claims are considered, and feminist visions and proposals listened to. Gender-transformative research ought to contribute to problematising the gender neutrality of adopted regulatory instruments, developing adequate monitoring of regulatory processes and governing arrangements, with a focus on power asymmetries of involved stakeholders. Comparative investigation, across countries and world regions, would help feminist scholars to identify and denounce the extent to which specific challenges posed by digital technologies to women, girls and gender non-conforming subjects are

taken into consideration, and what kind of measures, if any, are being adopted to address them. Hence research is needed to investigate if (at all), when and how mechanisms like gender analysis, audits and budgeting are considered, and to critically expose related 'missed opportunities.'

As already highlighted, voluntary codes are expected to recognise gender equality as a key principle that should be enacted through different stages of the implementation and enforcement of the legislation. This intention adds to the current challenges related to the implementation, monitoring and assessing of voluntary codes of conduct and whether, and the extent to which, they live up to the AI Act's suggested promotion of inclusion, diversity and gender equality. Additionally, the EC's High-Level Expert Group had already highlighted in 2019 the inadequacy of non-binding instruments in protecting the EU's trinity values: human rights, democracy and the rule of law (Smuha, 2024). In this respect, critical analyses of implementation processes may build on feminist analytical frameworks to investigate and expose the challenges towards implementing gender mainstreaming, which may include window-dressing implementation (Jahan, 1995), resistance to the process (Benschop and Verloo, 2006; Lombardo and Mergaert, 2013), and the bureaucratisation and depoliticisation of feminist principles (Eyben, 2010). To this end, collaboration between scholars and practitioners, particularly transnational feminist civil society organisations that participate as stakeholders in regulatory processes, can help better appreciate how overt but also subtle forms of resistance to mainstreaming gender affect such processes, and to develop common strategies to challenge such resistance.

Finally, the above-mentioned changes that absolve the AI Office to work with Member States to assess and respond to violations of fundamental and children's rights, and gender-based algorithmic discrimination in particular, pose challenges to the genuine and effective mainstreaming of a gender perspective into AI policy, and highlight the fundamental role of different social actors, from academia to civil society organisations and feminist groups, in critiquing some of the Act's limitations. Undertaking more intersectional and women's rights-focused research on AI regulatory development in EU and beyond, while further developing a gender critique on leadership and organisational cultures amongst the various actors involved, is needed to appreciate, build upon and connect long-standing struggles for gender equality in media with newer challenges and forms of mobilisation. This would address yet another challenge to fostering gender mainstreaming as a democratic innovation mechanism, that of creating intersections and forms of solidarity amongst generations of academics and advocates, aligning their knowledges and making their voices heard.

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Notes

1. These include President Trump's Executive Order adopted in January 2020 aimed at 'Defending women from gender ideology' and the decision to place all federal diversity, equity and inclusion employees placed on paid leave, as per a January 21 Memorandum of the US Office of Personnel Management.
2. https://digital-strategy.ec.europa.eu/en.
3. A widely cited definition of gender mainstreaming has been provided by the European Commission: 'The systematic integration of the respective situations, priorities and needs of women and men in all policies and with a view to promoting equality between women and men and mobilizing all general policies and measures specifically for the purpose of achieving equality by actively and openly taking into account, at the planning stage, their effects on the respective situations of women and men in implementation, monitoring and evaluation' (EU Comm, 1996).
4. Articles 2 and 3(3) of the founding Treaty on European Union (TEU), Articles 21 and 23 of the Charter of Fundamental Rights, and Article 8 of the Treaty on the Functioning of the European Union (TFEU) call for equality between women and men.
5. https://cordis.europa.eu/project/id/28545.
6. https://www.mirovni-institut.si/en/projects/mageeq-policy-frames-and-implementation-problems-the-case-of-gender-mainstreaming/.
7. https://eige.europa.eu/gender-mainstreaming/tools-methods.
8. https://www.un.org/en/summit-of-the-future.
9. https://www.intgovforum.org/en.
10. In the IGF context a Dynamic Coalition on gender issues operated since 2006 to make sure that gender concerns remain within the agenda (Padovani, 2023).
11. For an overall review of WSIS+20, see https://www.gp-digital.org/everything-you-need-to-know-about-the-wsis20-review/.
12. The Declaration's web version is accessible at: https://feministdigitaljustice.net.
13. The impact assessment aimed to provide the objectives and different policy options and their implications for the development of an European framework for AI.
14. It is stated in the annex to the impact assessment (EC, 2021a, 2021b) that amongst the main concerns highlighted by the respondents, a small number of NGOs (16 out of 160) emphasised the risks posed by AI for fundamental rights, but only five of them were in favour of the introduction of an impact assessment for AI.
15. In italic by the authors to stress that 'equality' not 'gender equality' was used.
16. The Council's document explains that the term 'gender equality' has not been used in the context of artificial intelligence because one Member State objected: 'on 21 October 2020, the Presidency confirmed that further efforts to reach a consensus on this particular point in the draft Council conclusions on the Charter of Fundamental Rights in the context of artificial intelligence and digital change had not been successful' (Council of the EU, 2020: 2).
17. https://dq4n3btxmr8c9.cloudfront.net/files/iytbh9/AI_and_RoL_Open_Letter_final_27092023.pdf.
18. Liability Rules for Artificial Intelligence, retrieved from https://commission.europa.eu/business-economy-euro/doing-business-eu/contract-rules/digital-contracts/liability-rules-artificial-intelligence_en.

19.   Safety_and_Security__Third_Draft_GeneralPurpose_AI_Code_of_Practice_oN4LxKHMn
      IRgtrWYmhWMwRKXT4c_113608.pdf.
20.   Scientific Consensus on AI Bias.

References

Abedin B, Marjanovic O and Nadeem A (2020) Gender bias in AI: A review of contributing factors and mitigating strategies. In: *ACIS 2020 Proceedings*, Australasian, p. 27.

Advisory Committee on Equal Opportunities for Women and Men (2020) Opinion on artificial intelligence – opportunities and challenges for gender equality. Available at: https://commission.europa.eu/publications/opinions-advisory-committee-equal-opportunities-women-and-men_en (accessed 21 May 2025).

Afina Y, Buchser M, Krasodomski A, et al. (2024) Towards a global approach to digital platform regulation. In: Chatham House. Available at: https://www.chathamhouse.org/2024/01/towards-global-approach-digital-platform-regulation (accessed 21 May 2025).

Ahmed S (2023) Strengthening the multi-stakeholder approach to global AI governance, protecting the environment and human rights in the era of generative AI. Report, Policy Network on Artificial Intelligence, Kyoto, Japan, October 2023.

Bacchi C and Eveline J (eds) (2010) *Mainstreaming Politics. Gendering Practices and Feminist Theory*. Adelaide: University of Adelaide Press.

Bartoletti I and Xenidis R (2023) *Study on the Impact of Artificial Intelligence Systems, Their Potential for Promoting Equality, Including Gender Equality, and the Risks They May Cause in Relation to Non-Discrimination*. Strasbourg: Council of Europe Publishing.

Benschop Y and Verloo M (2006) Sisyphus' sisters: Can gender mainstreaming escape the genderedness of organizations? *Journal of Gender Studies* 15(1): 19–33.

Bitzan R, Köttig M and Petö A (eds) (2017) *Gender and Far Right Politics in Europe*. Basingstoke: Palgrave Macmillan.

Cabrera L, Caroli L and Harris DE (2025) Human rights are universal, not optional: don't undermine the EU AI act with a faulty code of practice. Available at: https://www.techpolicy.press/human-rights-are-universal-not-optional-dont-undermine-the-eu-ai-act-with-a-faulty-code-of-practice/ (accessed 21 May 2025).

Cadwalladr C and Graham-Harrison E (2018) Cambridge Analytica: Links to Moscow oil firm and St Petersburg university. *Sat* 17: 17–59.

Caitlin A (2025) European Commission withdraws AI liability directive from consideration. Available at: https://iapp.org/news/a/european-commission-withdraws-ai-liability-directive-from-consideration (accessed 21 May 2025).

Capitology (2024) Artificial intelligence and its unique threat to women. In: Capitol Technology University blog. Available at: https://www.captechu.edu/blog/artificial-intelligence-and-its-unique-threat-women (accessed 21 May 2025).

Caravantes P, Lombardo E (2025 forthcoming) Gender mainstreaming as democratic innovation. In: Ahrens P, D'Agostino S, Jacquot S, et al. (eds) *Research Handbook of Gender Mainstreaming*. Edward Elgar Publishing.

Caywood K and Darmstadt GL (2024) Gender mainstreaming at 25 years: Toward an inclusive, collaborative, and structured research agenda. *Journal of Global Health* 14: 04011.

Celis K and Meier P (2011) Sowing the seeds of its own failure: Implementing the concept of gender mainstreaming. *Social Politics* 18(4): 469–489.

Chang KW, Dev S, Monajatipoor M, et al. (2021) Harms of gender exclusivity and challenges in non-binary representation in language technologies. arXiv preprint arXiv:2108.12084.

Chowdhury R and Lakshmi D (2023) *"Your Opinion Doesn't Matter, Anyway": Exposing Technology-Facilitated Gender-Based Violence in an Era of Generative AI*. UNESCO Publishing.

Coeckelbergh M (2024) *Why AI Undermines Democracy and What to Do About It*. John Wiley & Sons.

Collins R, Foa R, Klassen A, et al. (2020) The global satisfaction with democracy report 2020. Report, Centre for the Future of Democracy, UK, January.

Committee on the Elimination of Discrimination against Women (CEDAW) (2024) General recommendation No. 40 (2024) on the equal and inclusive representation of women in decision-making systems. Available at: https://digitallibrary.un.org/record/4067705?ln=en&v=pdf (accessed 19 May 2025).

Costanza-Chock S (2018) Design justice, AI, and Escape from the matrix of domination. *Journal of Design and Science* 3(5): 1–14.

Council of Europe (2024) The framework convention on artificial intelligence. Available at: https://www.coe.int/en/web/artificial-intelligence/the-framework-convention-on-artificial-intelligence (accessed 21 May 2025).

Council of the European Union (2020) Presidency conclusions – The charter of fundamental rights in the context of artificial intelligence and digital change. Available at: https://data.consilium.europa.eu/doc/document/ST-8711-2020-INIT/en/pdf (accessed 21 May 2025).

Crawford K, Whittaker M and West S (2019) Discriminating systems. Gender, race, and power in AI. In: AI Now Institute. Available at: https://ainowinstitute.org/wp-content/uploads/2023/04/discriminatingsystems.pdf (accessed 22 May 2025).

Drossou O and Jensen H (eds) (2005) *Visions in process II: The world summit on the information society*. In: Heinrich Böll Foundation. Available at: https://www.academia.edu/22634656/Visions_in_Process_II_The_World_Summit_on_the_Information_Society_Geneva_2003_Tunis_2005_Book (accessed 21 May 2025).

Duina F and Mérand F (eds) (2020) *Europe's Malaise: The Long View*. Emerald Publishing Limited.

Economist Intelligence Unit (EIU). (2024). Democracy Index 2023: Age of conflict. Available at: https://www.eiu.com/n/campaigns/democracy-index-2023/ (accessed 21 May 2025).

Erman E and Furendal M (2024) Artificial intelligence and the political legitimacy of global governance. *Political Studies* 72(2): 421–441.

European Commission (1996) COM(96)67 final on incorporating equal opportunities for women and men in all community policies and activities. Available at: LexUriServ.do (accessed 22 May 2025).

European Commission (2019) Ethics guidelines for trustworthy AI. Available at: https://digital-strategy.ec.europa.eu/en/library/ethics-guidelines-trustworthy-ai#:~:text=According%20to%20the%20Guidelines%2C%20trustworthy%20AI%20should%20be%3A,perspective%20while%20taking%20into%20account%20its%20social%20environment (accessed 21 May 2025).

European Commission (2020) White paper on artificial intelligence: public consultation towards a European approach for excellence and trust. Available at: https://digital-strategy.ec.europa.eu/en/library/white-paper-artificial-intelligence-public-consultation-towards-european-approach-excellence-and (accessed 21 May 2025).

European Commission (2021a) Artificial intelligence act. Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A52021PC0206 (accessed 21 May 2025).

European Commission (2021b) Impact assessment of the regulation on artificial intelligence. Available at: https://digital-strategy.ec.europa.eu/en/library/impact-assessment-regulation-artificial-intelligence (accessed 21 May 2025).

European Commission (2024a) AI act enters into force. Available at: https://commission.europa.eu/news/ai-act-enters-force-2024-08-01_en#:~:text=On%201%20August%202024%2C%20the,AI%20Act)%20enters%20into%20force (accessed 21 May 2025).

European Commission (2024b) Meet the chairs leading the development of the first general-purpose AI code of practice. Available at: https://digital-strategy.ec.europa.eu/en/news/meet-chairs-leading-development-first-general-purpose-ai-code-practice (accessed 21 May 2025).

European Commission (2024c) AI act: Have your say on trustworthy general-purpose AI. Available at: https://digital-strategy.ec.europa.eu/en/consultations/ai-act-have-your-say-trustworthy-general-purpose-ai (accessed 21 May 2025).

European Commission (2024d) AI act: Have your say on trustworthy general-purpose AI. Available at: https://digital-strategy.ec.europa.eu/en/consultations/ai-act-have-your-say-trustworthy-general-purpose-ai (accessed 21 May 2025).

European Institute for Gender Equality (EIGE) (2021) Artificial intelligence, platform work and gender equality. Available at: https://eige.europa.eu/publications-resources/publications/artificial-intelligence-platform-work-and-gender-equality?language_content_entity=en (accessed 21 May 2025).

European Network of Equality Bodies (Equinet) (2020) Regulating for an equal AI: A new role for equality bodies. Meeting the new challenges to equality and non-discrimination from increased digitisation and the use of artificial intelligence. Available at: https://ai.equineteurope.org/system/files/2021-04/EQUINET_REGULATING%20FOR%20AN%20EQUAL%20AI_2020_good%20practice%20guide.pdf (accessed 21 May 2025).

European Parliament (2024) Artificial Intelligence Act: MEPs adopt landmark law. Available at: https://www.europarl.europa.eu/news/en/press-room/20240308IPR19015/artificial-intelligence-act-meps-adopt-landmark-law (accessed 21 May 2025).

European Union (2016/679) General data protection regulation. Available at: https://eur-lex.europa.eu/eli/reg/2016/679/2016-05-04/eng (accessed 21 May 2025).

European Union (2024/1689) Artificial intelligence act. Available at: https://eur-lex.europa.eu/eli/reg/2024/1689/oj/eng (accessed 21 May 2025).

Eyben R (2010) Gender mainstreaming, organizational change, and the politics of influencing. In: Eyben R and Turquet L (eds) *Feminists in Development Organizations*. Rugby: Practical Action Publishing, pp. 15–36.

Farris S (2017) *In the Name of Women's Rights: The Rise of Femonationalism*. Durham and London: Duke University Press.

Ford H and Moss (2020) How accountable are digital platforms? In: Dutton WH (ed) *A Research Agenda for Digital Politics*. Edward Elgar Publishing, pp. 97–109.

Gallagher M and Vega Montiel A (eds) (2023) *The Handbook of Gender, Communication, and Women's Rights*. John Wiley & Sons.

Gurumurthy (2017) A history of feminist engagement with development and digital technologies In: APC. Available at: https://www.apc.org/en/pubs/history-feminist-engagement-development-and-digital-technologies#:~:text=This%20paper%20historicises%20gender%20justice%20struggles%20and%20feminist,World%20Summit%20on%20the%20Information%20Society%20%20%28WSIS%29%20process (accessed 22 May 2025).

Hanna NK (2010) *Transforming Government and Building the Information Society: Challenges and Opportunities for the Developing World*. New York: Springer.

Hayles NK (2012) *How We Think: Digital Media and Contemporary Technogenesis*. Chicago and London: University of Chicago Press.

Horowitz MA and Nieminen H (2024) Communication rights and the Nordic epistemic commons: Assessing the Media welfare state in the age of information disorder. In: Jakobsson P, Lindell J

and Stiernstedt F (eds) *The Future of the Nordic Media Model: A Digital Media Welfare State?* Gothenburg: Nordicom, University of Gothenburg, pp. 96–116.

Human Rights Watch (HRW) (2023) Pandora's box: Generative AI companies, ChatGPT, and human rights. Available at: https://www.hrw.org/news/2023/05/03/pandoras-box-generative-ai-companies-chatgpt-and-human-rights (accessed 22 May 2025).

Hunt M and Quinan CL (2022) Biometric bordering and automatic gender recognition: Challenging binary gender norms in everyday biometric technologies. *Communication, Culture and Critique* 15(2): 211–226.

ITforChange and DAWN (2023) Declaration of feminist digital justice. Available at: https://feministdigitaljustice.net (accessed 19 May 2025).

Jahan R (1995) *The Elusive Agenda: Mainstreaming Women in Development*. London: Zed Books.

Jung JY and Katyal SK (2021) The gender panopticon: AI, gender, and design justice. *UCLA L Rev* 68: 692.

Kamran H (2024) Women's rights programme, association for progressive communications. Available at: https://www.unwomen.org/sites/default/files/2024-10/csw-69-expert-group-meeting-expert-paper-hija-kamran-en.pdf (accessed 22 May 2025).

Kováts E (2017) The emergence of powerful anti-gender movements in Europe and the crisis of liberal democracy. In: Bitzan R, Köttig M and Petö A (eds) *Gender and Far Right Politics in Europe. Gender and Politics*. Cham: Palgrave Macmillan, 175–189.

Kuhar R and Paternotte D (2018) *Anti-gender Campaigns in Europe: Mobilizing Against Equality*. London: Rowman & Littlefield.

Laforge G, Muggah R and Seiler G (2023) AI and the global south. Available at: https://www.project-syndicate.org/commentary/ai-governance-first-principles-must-include-global-south-by-robert-muggah-et-al-2023-03 (accessed 22 May 2025).

Lazzaroni RM, Mendoza P and Pal S (2024) AI's missing link: The gender gap in the talent pool. In: Interface – Tech analysis and policy ideas for Europe (formerly Stiftung Neue Verantwortung). Available at: https://www.interface-eu.org/publications/ai-gender-gap (accessed 22 May 2025).

Liu H and O'Connor S (2024) Gender bias perpetuation and mitigation in AI technologies: Challenges and opportunities. *AI & Society*, 39(4): 2045–2057.

Lombardo E and Mergaert L (2013) Gender mainstreaming and resistance to gender training: A framework for studying implementation. *NORA – Nordic Journal of Feminist and Gender Research* 21(4): 296–311.

Lundius J (2025) The reckless and dangerous misogyny of Zuckerberg and musk. In: *Inter Press Service* (IPS). Available at: https://www.other-news.info/the-reckless-and-dangerous-misogyny-of-zuckerberg-and-musk/ (accessed 22 May 2025).

Lütz F (2024) The AI act, gender equality and non-discrimination: What role for the AI office? *ERA Forum* 25(1): 79–95. Berlin/Heidelberg: Springer Berlin Heidelberg.

Mühlhoff R and Ruschemeier H (2025) Updating purpose limitation for AI: A normative approach from law and philosophy. *International Journal of Law and Information Technology* 33: eaaf003.

Organisation for Economic Co-operation and Development (OECD) (2018) OECD toolkit for mainstreaming and implementing gender equality. Implementing the 2015 OECD recommendation on gender equality in public life. Available at: https://www.oecd.org/en/publications/oecd-toolkit-for-mainstreaming-and-implementing-gender-equality_afd32b5a-en.html (accessed 22 May 2025).

Padovani C (2016) Gendering the European digital agenda: The challenge of gender mainstreaming twenty years after the Beijing World Conference on Women. *Journal of Information Policy* 6: 403–435.

Padovani C (2023) Gender dimensions of communication governance: Perspectives, principles, and practices. In: Gallagher M and Montiel AV (eds) *The Handbook of Gender, Communication, and Women's Human Rights*. John Wiley & Sons, pp. 15–33.

Paterson S and Scala F (2018) Stories from the front lines: Making sense of gender mainstreaming in Canada. *Politics & Gender* 14(2): 208–234.

Smuha NA (2024) The paramountcy of data protection law in the age of AI. *In* Burgot E et al (eds) *Two Decades of Personal Data Protection. What next? EDPS 20th Anniversary.* Brussels: European Data Protection Supervisor, 225–239.

True J (2003) Mainstreaming gender in global public policy. *International Feminist Journal of Politics* 5(3): 368–396.

United Nations (2024b) Global digital compact. Available at: https://www.un.org/digital-emerging-technologies/global-digital-compact (accessed 20 May 2025).

United Nations Educational, Scientific and Cultural Organisation (UNESCO) (2014) Media and gender: a scholarly agenda for the global alliance on media and gender. Available at: https://unesdoc.unesco.org/ark:/48223/pf0000228399 (accessed 20 May 2025).

United Nations Educational, Scientific and Cultural Organisation (UNESCO) (2022) Recommendations on the ethics of artificial intelligence. Available at: https://unesdoc.unesco.org/ark:/48223/pf0000380455 (accessed 19 May 2025).

United Nations Educational, Scientific and Cultural Organisation (UNESCO) (2024) Women for ethical AI. Outlook study on artificial intelligence and gender. Available at: https://unesdoc.unesco.org/ark:/48223/pf0000391719/PDF/391719eng.pdf.multi (accessed 19 May 2025).

United Nations (General Assembly) (2024a) Seizing the opportunities of safe, secure and trustworthy artificial intelligence systems for sustainable development. Available at: https://docs.un.org/en/A/78/L.49 (accessed 20 May 2025).

Verloo M and Paternotte D (2018) The feminist project under threat in Europe. *Politics and Governance* 6(3): 1–5.

Verloo MMT (2005) Mainstreaming gender equality in Europe: A critical frame analysis approach. *The Greek Review of Social Research* 117: 11–34.

Walby S (2005) Gender mainstreaming: Productive tensions in theory and practice. *Social Politics: International Studies in Gender, State & Society* 12(3): 321–343.

Wiener A (2007) Contested meanings of norms: A research framework. *Comparative European Politics* 5: 1–17.