



European Women's Lobby

Recommendations on Artificial Intelligence and Gender Equality

Introduction

The European Women's Lobby (EWL) welcomes the European Commission's consultation on artificial intelligence (AI). As the largest umbrella of women's civil society in Europe, representing nearly 50 million women, we aim to contribute to this policy development by highlighting the impact that AI brings in achieving equality between women and men, as committed to within the European treaties.

Digital technologies, including artificial intelligence, offers huge possibilities for disruptive power to change the system, with new economic opportunities and work spaces opening up. But they also represent new spaces of oppression for women and can further perpetuate existing inequalities and sexist stereotypes. We need to connect the digital space including AI to the real world as a continuum and a mirror. The question we need to ask: is the digital agenda/AI going to contribute to reducing – or increasing – gender inequalities and if so, how? And what are the ways to eradicate the three main components of the digital gender gap¹?

EWL would firstly reiterate that the definition of "Artificial Intelligence" (AI) has been significantly narrowed in the last 40 years² and that what is being referred to are statistical models that are used to analyse large quantities of data or "Machine Learning"³. It is imperative that this is acknowledged, as the degree to which these technologies still require human input in order to perform essential tasks will be better understood. This we believe, will only strengthen a collective understanding that AI systems remain at increased risk of having **structural inequalities and biases embedded within them**, as seen in cases of recruitment and healthcare.

The recent Council of Europe recommendation on sexism emphasises our analysis, reiterating, *that the use of algorithms can transmit and strengthen existing gender stereotypes and therefore may contribute to the perpetuation of sexism*⁴. Therefore, it is vital that all stakeholders recognise, from the outset, that establishing frameworks for a European AI strategy built on trust and anti-discrimination principles will not be enough; **the very purpose and application of certain AI technologies may in themselves fuel discrimination**, such as those proposed for use in certain EU migration and asylum procedures⁵.

In light of this consultation, the EWL has some identified some concerns about the implications of AI on women's economic independence; women's entrepreneurship and leadership; and violence against

¹ (1) access and use of digital technologies and the internet; (2) development of the skills needed to use digital technologies and to participate in their design and production; and (3) advancement of women to visible leadership and decision making roles in the digital sector

² A Critical Conceptual Analysis of Definitions of Artificial Intelligence as Applicable to Computer Engineering, IOSR Journal of Computer Engineering (IOSR-JCE), Volume 16, Issue 2, Ver. I (Mar-Apr. 2014), PP 09-13

³ Female.AI: The Intersection Between Gender and Contemporary Artificial Intelligence, Irene Sternberg September 19th 2018, <https://hackernoon.com/female-ai-the-intersection-between-gender-and-contemporary-artificial-intelligence-6e098d10ea77>

⁴ <https://rm.coe.int/prems-055519-gbr-2573-cmrec-2019-1-web-a5/168093e08c>

⁵ Ana Beduschi (2020) 'International Migration Management in the age of Artificial Intelligence' Migration Studies, available at: <https://academic.oup.com/migration/advance-article/doi/10.1093/migration/ mnna003/5732839>

women. EWL highlights that a structural feminist perspective and a sustained promotion of gender mainstreaming mechanisms is urgently required in the development of this Strategy.

In this contribution, EWL will reiterate that

- The AI strategy must be defined and implemented with the explicit inclusion of gender mainstreaming mechanisms, including gender budgeting and impact assessments
- Funding must be expressly allocated to increasing the participation and representation of women in AI across the entire life cycle (education, employment, leadership)
- Rapid deployment into the public sector is halted until significant analysis and impact assessments have been conducted. Human oversight infrastructure must be developed before the implementation of AI technologies into any sector and must include gender equality experts.

Education and leadership

It is widely recognised that the representation of women and girls in STEAM is critically low. Various transnational initiatives have been launched in recent years to answer this shortfall, including the dedicated *Closing the gender gap through digital and entrepreneurship education* action under the **Digital Education Action Plan**, which the EWL supports. These actions however must be implemented through a comprehensive understanding of why the representation of girls in STEAM education persists.

European Commission data shows that having a third-level education (university degree) in ICT-related studies increases the probability of employment for men by 2-3%; for women with the same degree however, ***the probability of being employed decreases by 1-2%***⁶; therefore, this is not solely an issue of the lack of role models or preference of women to avoid STEAM in higher education.

The exclusive environment of AI professionals, STEAM academic and research hubs, and associated jobs market fosters an explicitly sexist environment where women in STEAM endure the highest rate of sexual harassment of any profession outside of the military⁷. Alongside this, women face consistent professional hurdles, with lack of flexibility during maternity leave and significantly less career advancement⁸.

Therefore, in the AI Strategy, the European Commission must ensure that all six proposed actions include specific objectives to increase the participation, representation and safety of women in research and innovation and in skills, through the **Updated Skills Agenda**. This includes the systematic use of the **Women in Digital Scoreboard** (part of the annual Digital Economy and Society Index⁹) and **Declaration of Commitment on Women in Digital**. EWL also urges the European Commission to ensure efforts in supporting the research and innovation community includes specific initiatives for widespread gender equality and sexual harassment training in third level education institutions.

⁶ Carlota Tarin Quiros et al. Women in the Digital Age, Final Report. A study prepared for the European Commission, DG Communications Networks, Content & Technology, 2018. Accessed here <https://ec.europa.eu/digital-single-market/en/women-ict>

⁷ Sexual Harassment of Women. Climate, Culture, and Consequences in Academic Sciences, Engineering, and Medicine (2018)

<https://www.nap.edu/catalog/24994/sexual-harassment-of-women-climate-culture-and-consequences-in-academic>

⁸ <https://www.kellyservices.com/global/siteassets/3-kelly-global-services/uploadedfiles/kocg1076820women20in20stem20ebook.pdf>

⁹ <https://ec.europa.eu/digital-single-market/en/desi>

Women's socio-economic independence

The European labour market will be significantly impacted as new jobs related to the development, maintenance and upgrading of AI technologies and big data infrastructures are expected to grow¹⁰. It is vital that women are embedded as part of this growth process and not excluded from it.

Importantly, it must be understood that the current structures of the development of AI and AI communities inherently excludes women from equal and safe participation. As specified within the European Commission White Paper¹¹, developments within AI run the risk of inherent bias embedded into software related to job and market growth that will most notably have an impact on women's economic independence in Europe.

As noted in the review of the EU Digital Agenda, the exclusion of women from AI professionally is a recognised issue, as the global AI Index 2018 report shows that **women make up only 20% of AI professionals**¹². Alongside this, the automation of industries through the use of AI technologies is projected to either highly transform or mostly affect professions where women make up the predominant workforce; including administration, healthcare, care work and retail¹³. Similarly, there exists contemporary examples of the application of AI software in recruitment tools which showed a bias against women¹⁴. Women entrepreneurs also face continued hurdles in advancing in the AI and technology sector, as **despite women led digital start-ups and investments performing 63% better than male-led SME's**¹⁵, **they still receive significantly less EU funding** and support within the Horizon and Erasmus+ programmes.

Increasing diversity across the AI community must be engaged through an intersectional understanding of why the field remains exclusive and recognise that current solutions may require women to enter into potentially hostile environments. Aspects such as sexual harassment and structures of career progression options that do not prioritise work-life-balance must be concretely addressed. Reflection is required to position what impact AI will have on achieving gender equality as well as how can we advance gender equality into existing AI spaces. A European Strategy on AI that commits, from the outset, to embedding gender mainstreaming mechanisms as a requirement in all areas, has the potential to significantly advance equality between women and men, both economically and socially.

With the present global health crisis and widespread consideration of speeding up the process to adopt AI technologies to respond to specific health and economic crises, it is more vital than ever that the AI strategy remedies these issues. The proposed Strategy must be developed in line with the **European Commission Gender Equality Strategy**, which expressly outlines actions to ensure the digital transition, which includes this present AI strategy, is equally beneficial to all European women and men.

¹⁰ Gonzalez Vazquez, I., Milasi, S., Carretero Gomez, S., Napierala, J., Robledo Bottcher, N., Jonkers, K., Goenaga, X. (eds.), Arregui Pabollet, E., Bacigalupo, M., Biagi, F., Cabrera Giraldez, M., Caena, F., Castano Munoz, J., Centeno Mediavilla, C., Edwards, J., Fernandez Macias, E., Gomez Gutierrez, E., Gomez Herrera, E., Inamorato Dos Santos, A., Kampylis, P., Klenert, D., López Cobo, M., Marschinski, R., Pesole, A., Punie, Y., Tolan, S., Torrejon Perez, S., Urzi Brancati, C., Vuorikari, R. The changing nature of work and skills in the digital age, EUR 29823 EN, Publications Office of the European Union, Luxembourg, 2019, ISBN 978-92-76-09206-3, doi:10.2760/679150, JRC 117505.

¹¹ https://ec.europa.eu/info/sites/info/files/commission-white-paper-artificial-intelligence-feb2020_en.pdf

¹² Yoav Shoham, Raymond Perrault, Erik Brynjolfsson, Jack Clark, James Manyika, Juan Carlos Nieves, Terah Lyons, John Etchemendy, Barbara Grosz and Zoe Bauer, "The AI Index 2018 Annual Report", AI Index Steering Committee, Human-Centered AI Initiative, Stanford University, Stanford, CA, December 2018.

¹³ Gonzalez Vazquez, I., Milasi, S., Carretero Gomez, S., Napierala, J., Robledo Bottcher, N., Jonkers, K., Goenaga, X. (eds.), Arregui Pabollet, E., Bacigalupo, M., Biagi, F., Cabrera Giraldez, M., Caena, F., Castano Munoz, J., Centeno Mediavilla, C., Edwards, J., Fernandez Macias, E., Gomez Gutierrez, E., Gomez Herrera, E., Inamorato Dos Santos, A., Kampylis, P., Klenert, D., López Cobo, M., Marschinski, R., Pesole, A., Punie, Y., Tolan, S., Torrejon Perez, S., Urzi Brancati, C., Vuorikari, R. The changing nature of work and skills in the digital age, EUR 29823 EN, Publications Office of the European Union, Luxembourg, 2019, ISBN 978-92-76-09206-3, doi:10.2760/679150, JRC 117505.

¹⁴ <https://www.reuters.com/article/us-amazon-com-jobs-automation-insight/amazon-scrap-secret-ai-recruiting-tool-that-showed-bias-against-women-idUSKCN1MK08G>

¹⁵ Carlota Tarin Quiros et al. Women in the Digital Age, Final Report. A study prepared for the European Commission, DG Communications Networks, Content & Technology, 2018. Accessed here <https://ec.europa.eu/digital-single-market/en/women-ict>

The EWL demands that the proposed strategy be developed in consideration of the commitments under the treaties for the advancement of equality through the use of **gender mainstreaming mechanisms**, including gender budgeting, impact assessments and well-funded monitoring frameworks. The strategy must also align with the **SME Strategy** and include specific actions for **increased funding to promote and support women-led AI start-ups**. As our dependence upon homeworking and AI technologies to sustain and advance the European economies is made more apparent by the COVID19 crisis, it is equally imperative that all steps are made in consideration to the **Work-Life Balance Directive**, analysis on precarious work and flexi-time on women's participation in the labour market, to actively decrease the digital gender gap. With this in mind, the guidelines for the implementation of the Directive at Member State level should be developed in alignment to the skills initiatives within the AI Strategy.

Women and access to equal healthcare

EU investment in healthcare and the implementation of AI into this area has been significant throughout the Horizon 2020 project cycle of the last European Commission mandate¹⁶. European companies have placed significant investment in developing technologies, specifically on providing information on symptoms, fertility awareness, prioritizing patient care and Genetic Testing¹⁷. Legitimate concerns have been raised by individuals in the AI Medical community on gender stereotypes and biases becoming embedded in the next generation of AI health technologies¹⁸. For example, the consistency of heart disease in women being overlooked, unrecognised or mistreated by doctors because symptomatically it often manifests differently in women¹⁹; the prospect of including such existing medical data in symptomatic or diagnostic AI technologies within the European health sector presents a clear risk for the misdiagnoses and appropriate care.

This is ever-more vital as we face a global pandemic that reiterates the need to drastically overhaul European healthcare systems, of which AI technologies is one option for ensuring the rapid deployment of urgent, widespread care. In brief however, advancing with the implementation of AI technologies in European healthcare systems with the **biases that persist in the medical community significantly increases the risk women face in accessing adequate healthcare and presents a clear risk to women's life**. Initiatives to eradicate gender bias within healthcare must be adopted as a priority before the development and widespread deployment of new technologies into European healthcare; as both urgently require the systematic inclusion of gender mainstreaming mechanisms and analysis.

Though the EWL welcomes the recognition of health as a sector with significant risk to life, we urge the European Commission to ensure that the proposed plan for the rapid deployment of AI technologies in this sector is not conducted until a **human oversight committee with gender equality and health experts** is established. This oversight committee must have the clear political and legal mandate to **review data input** and the **testing of AI health technologies**. They must also be able to conduct regular reviews of said software to ensure continued robustness and safety, as well as provide expertise on determining if a specific AI technology is indeed essential or poses addition risks.

Violence against Women & Girls

The risks identified in the health sector are similarly relevant in relation to the issue of violence against women, which still constitutes the most widespread violation of women's human rights in Europe. From domestic violence to stalking; from sexual exploitation to online abuse; the persistence of old and new

¹⁶ <https://ec.europa.eu/digital-single-market/en/news/factsheet-artificial-intelligence-europe>

¹⁷ AI Healthcare Innovations in Europe – An Overview of Startups and Innovation, Ayn de Jesus, <https://emerj.com/ai-sector-overviews/ai-healthcare-innovations-europe-overview-startups-innovation/>

¹⁸ <https://ai-med.io/ai-biases-ada-health-diversity-women/>

¹⁹ <https://blog.thesullivanngroup.com/rsqsolutions/heart-disease-in-women-underdiagnosed-undertreated>

forms of violence against women demonstrates the extent to which our societies are built on and perpetuate patriarchal values, male domination and entitlement. Women's civil society have legitimate concerns on how AI is already being utilised to perpetuate violence against women and girls, sexism and sexist hate speech.

Significant data has already been collected by experts and the European institutions on the **use of AI in the perpetration of violence against women and girls**²⁰. The use of "deep fakes" in cases of "revenge porn"²¹ or more appropriately, image-based sexual abuse is becoming much more common and documented. They are often targeting politically engaged women with the intention of silencing or forcing out of the political arena is a concern. It speaks to the backlash of women's rights and is a clear violation of the principles of democracy in Europe. Without recognition of these key issues, we cannot ensure that the fundamental values of gender equality are enshrined within the AI environment and in preceding policies. It is critical to adopt this holistic understanding of the continuum of violence against women and girls in relation to discussions on AI; not only in the use of AI in perpetuating violence against women but as a contributing factors to the broader understanding of why women and girls are less likely to enter the AI space professionally or otherwise.

In the development of **safety and liability provisions of AI technologies**, violence against women must be expressly considered and the proposed strategy must prioritise the societal and personal safety risks some AI technologies present. Objectives in the strategy on safety must align with the **Victim's Rights Directive, Democracy Action Plan and Digital Services Act**; in clear recognition of how relevant these legislative tools are in contributing to women's safety in a digital Europe.

Conclusion

With the above analysis, EWL highlights that these varying aspects clearly indicates a correlation between the use of AI and numerous risks that exist which will lead to the widening of the digital gender gap. EWL strongly recommends that in order to ensure a European Strategy on AI is effective in building trust for European citizens and adheres to the Charter of Fundamental Rights, that gender mainstreaming must be implemented throughout all processes, by all relevant actors, including the private sector.

This includes a gender impact assessment of the proposed strategy, transparently conducted in consultation with civil society and human rights organisations; the use of gender budgeting for the entire European funds provided to the implementation of the strategy, with specific allocated funds to increasing women's representation in the field of AI and increasing their skills; a clear monitoring framework, similarly transparently operated, with the mandate for regular review of the implementation of the strategy, in cooperation with member states and the private sector.

In the development of the Human Oversight Committee, gender equality and digital rights experts must be included, with strong political mandates and adequate funding in order to be able to conduct their duties. The Committee must also maintain the ability to review data sets and test AI technologies proposed for high risk sectors including health.

A comprehensive, intersectional and gender sensitive approach must be adopted in the development of the EU AI strategy: A European approach to excellence and trust cannot be realised if women - 52% of the European population - are inherently excluded or only recognised in one aspect of the strategy.

²⁰ Cyber violence and hate speech online against women, European Parliament Report, Adriane van der Wilk, 2018; [https://www.europarl.europa.eu/RegData/etudes/STUD/2018/604979/IPOL_STU\(2018\)604979_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/STUD/2018/604979/IPOL_STU(2018)604979_EN.pdf)

²¹ HerNetHerRights, European Women's Lobby, authored by Adriane van der Wilk and Marianne Niosi, 2017, https://www.womenlobby.org/IMG/pdf/hernetherrights_report_2017_for_web.pdf