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# How the 'Brussels Effect' Could Shape the Future Regulation of Algorithmic Discrimination

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**Abstract:** The 'Brussels effect' is the phenomenon of globalised regulation triggered by the EU which conveys the content or the spirit of EU law beyond the EU jurisdiction through legal, political, or economic means. This article explores the Brussels effect to assess the reach of EU gender equality law regarding the future regulation of algorithmic discrimination. In the algorithmic age, where gender-based discriminations are increasingly occurring due to the use of AI within and outside the EU, the future of EU gender equality law depends more than ever on its capacity to promote gender equality globally through the external dimension of the EU. By scrutinising and reviewing available European and international policy documents, draft legislation on AI regulation and relevant literature, the article sketches out elements of an analytical framework and avenues for further research regarding how the Brussels effect could shape the future regulation of algorithmic gender-based discrimination.

First, it will be argued that the 'Brussels effect' can contribute to a global reach of EU gender equality law regarding the regulation of algorithmic discrimination. Second, the article discusses the global reach of local rules and the phenomenon that Artificial Intelligence (AI) blurs the lines between local jurisdictions when it comes to effective enforcement of algorithms to prevent discriminations. Third, the article will examine the EU's role in shaping law worldwide by setting legal or political standards. Considering the interconnectedness of the world and the impact of discriminatory algorithms beyond national jurisdictions, the EU could play its role as rule and standard setter by ensuring a level playing field of minimum protection against algorithmic discrimination with a global reach.

**Keywords:** Algorithmic discrimination, Gender equality, Brussels effect, AI regulation, Biases and gender stereotypes

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## Introduction

Artificial Intelligence (AI) and algorithms are increasingly used to solve problems and to automate decisions (or support human-made decisions) that have previously been taken exclusively by humans.[2] AI is defined as "the science and engineering of making intelligent machines"[3] and an algorithm as "a formally specified sequence of logical operations that provides step-by-step instructions for computers to act on data and thus automate decisions."[4]

EU equality law – often considered as the "EU's flagship contribution to social policy"[5] – has been incorporated in the EU Treaties since 1957.[6] More specifically, EU gender equality law prohibits direct and indirect gender-based discriminations. A direct discrimination occurs "where one person is treated less favourably on grounds of sex than another is, has been or would be treated in a comparable situation".[7] An indirect discrimination occurs "where an apparently neutral provision, criterion or practice would put persons of one sex at a particular disadvantage compared with persons of the other sex, unless that provision, criterion or practice is objectively justified by a legitimate aim, and the means of achieving that aim are appropriate and necessary".[8]

The algorithmic age triggers the question whether the use of algorithms increases or diminishes such discriminatory behaviour and if the current EU framework can adequately address algorithmic discrimination.

Rather than simply overcoming potential human biases in the decision-making process and ensuring a neutral, objective, and fair decision outcome, algorithms might reproduce, perpetuate or increase discriminatory outcomes and patterns of stereotypes and biases of the "real" world.[9] In such cases, algorithmic decision-making does not only lead to the same or worse discriminations, but it is also "happening" in an opaque ("black-box")[10] and uncontrolled way.[11]

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[2] See for example, Brian Christian, *The Alignment Problem: Machine Learning and Human Values* (New York: W. W. Norton & Company, 2020), pp. 7 and 11.

[3] Andrew McAfee and Erik Brynjolfsson, *Machine, Platform, Crowd: Harnessing Our Digital Future* (New York: W. W. Norton & Company, 2017), p. 67; the standard textbook on AI speaks of "building intelligent entities", Stuart J. Russell and Peter Norvig, *Artificial Intelligence: A Modern Approach* (London: Pearson Education Limited, 2021), p. 19.

[4] Solon Barocas et al, "Data & Civil Rights: Technology Primer", *Data & Civil Rights Conference*, 2014, HTTP://WWW.DATACIVILRIGHTS.ORG/PUBS/2014-1030/TECHNOLOGY.PDF. In essence, algorithms are "a step-by-step procedure for solving a problem or accomplishing some end", see "Algorithm", Merriam-Webster.com Dictionary, https://www.merriam-webster.com/dictionary/algorithm.

[5] Mia Rönnmar, "Labour and equality law", in *European Union Law*, ed. Steve Peers and Catherine Barnard (Oxford: Oxford University Press, 2017), 598-627, 2nd ed.

[6] Article 119 EEC of the Treaty of Rome (now Article 157 TFEU).

[7] Article 2(1)(a), (b) of Directive 2006/54/EC of the European Parliament and of the Council of 5 July 2006 on the implementation of the principle of equal opportunities and equal treatment of men and women in matters of employment and occupation (recast), OJ L 204, 26.7.2006, p. 23–36.

[8] *Ibid.*

[9] Katarina Zweig, *Ein Algorithmus hat kein Taktgefühl: Wo künstliche Intelligenz sich irrt, warum uns das betrifft und was wir dagegen tun können* (Munich: Heyne Verlag, 2019), pp. 212-220.

[10] For the term "Black Box" and an insightful description of the opaque nature of algorithms, see Frank Pasquale, *The Black Box Society* (Cambridge: Harvard University Press, 2015).

[11] Sometimes described as "Leviathan algorithmique" (algorithmic Leviathan); see the description on the impact of machine learning on humans, Éric Sadin, *L'intelligence artificielle ou l'enjeu du siècle: anatomie d'un antihumanisme radical* (Paris: L'éćhappeé, 2018).

Considering the borderless nature of AI and the emerging need for adequate regulation, the 'Brussels effect' could influence and shape the future regulation of algorithmic discrimination.

Algorithms are only as neutral as the underlying data they use or are trained on, which is often the "entry gate" for biases and discrimination. For the purposes of this analysis, the article proposes a working definition of algorithmic gender discrimination that occurs when one person is treated less favourably by an algorithm on grounds of sex than another is, has been or would be treated in a comparable situation (direct algorithmic discrimination) or where the use of algorithms in the decision-making process would put persons of one sex at a particular disadvantage compared with persons of the other sex[12] (indirect algorithmic discrimination).

The political, regulatory, and informal power of the European Union (EU) has often been described as the 'Brussels effect'.[13] With different nuances, the essence of this concept can be described as the phenomenon of globalised regulation triggered by the EU, either *de facto* or *de jure* by conveying the content or the spirit of EU law beyond the EU Member States through legal means, political influence or through market mechanisms.[14] In that sense, the EU single market project gained importance and led to an "increasingly external dimension"[15] which made the EU become a sort of "global regulatory hegemon"[16] also described as "Market Power Europe"[17]. Regarding (gender) equality, the EU has been qualified as a "protector and promotor of equality"[18] and the question is whether the EU can leverage this role regarding gender-based algorithmic discrimination.

Framing the analysis around the Brussels effect[19], this article identifies the potential of EU gender equality (GE) law regarding the future of regulating algorithmic discrimination, by assessing the potential influence of EU law in terms of the political, legal and market dimension.[20] In the algorithmic age[21], where discrimination is increasingly occurring online, the future of the EU depends on its capacity to defend the principle of equality between women and men globally via the external dimension of the EU.[22] It is argued that the Brussels effect can contribute to a global reach of GE law regarding regulating algorithmic discrimination. Competition law's 'effects doctrine' is an example where EU law produces effects beyond EU borders, and which could serve as model to capture violations of European anti-discrimination (AD) law that are caused by algorithms within or outside the EU. Even though significant progress still needs to be achieved in

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[12] This definition is modelled on the legal definitions of direct and indirect discrimination used in EU Gender Equality Law, such as in Article 2(1)(a),(b) of Directive 2006/54/EC.

[13] Anu Bradford, "The Brussels Effect", *Northwestern University Law Review* 107, no. 1 (2012): 1-67; Anu Bradford, *The Brussels Effect: How the European Union Rules the World* (New York: Oxford University Press, 2020).

[14] For a more detailed description of the Brussels effect, see Bradford, "The Future of the Brussels Effect", in *The Brussels Effect: How the European Union Rules the World, op. cit.* The Brussels effect, as coined by Anu Bradford, can be compared to the similar "California effect", discussed by David Vogel, *Trading Up: Consumer and Environmental Regulation in a Global Economy* (Cambridge: Harvard University Press, 2009).

[15] Bradford, *The Brussels Effect: How the European Union Rules the World , op. cit..*

[16] Ibid.

[17] Chad Damro, "Market Power Europe", *Journal of European Public Policy* 19, no. 5 (2012): 682-699.

[18] Thomas Giegerich, *The European Union as Protector and Promoter of Equality* (New York: Springer, 2020).

[19] Bradford, *The Brussels Effect: How the European Union Rules the World*, op. cit.

[20] The article reviews selected international and European policy documents and literature.

[21] Gilles Dowek, *The Age of Algorithms* (Cambridge: Cambridge University Press, 2020).

[22] See notably Articles 2 and 3(3) of the Treaty on European Union (TEU), Article 21 of the Charter of Fundamental Rights (CFR) and Article 8 TFEU tasking the Union to eliminate inequalities and promoting equality between men and women in all of its activities (which spells out the concept of 'gender mainstreaming').

GE in general[23] and traditional AD frameworks around the world are far from being fit for purpose, it is the right time to reflect and address algorithmic discrimination and its impacts on GE.[24]

Union policy is shaped and defined not only by the legal EU acquis but also by policy documents, such as the European Commission's Work Programme[25] and political guidelines [26]. The Gender Equality Strategy (GES)[27] is a policy document that defines the policy agenda for EU GE and is, alongside the legislative framework and its enforcement, a cornerstone of EU law and policy. It identifies not only the importance of mainstreaming GE in all areas of EU policy, but also that GE shall be a guiding principle in EU external action.[28] In the same vein, risks associated with algorithmic discrimination are identified in the GES.[29]

This article will discuss the impact of the EU in shaping GE Policy globally regarding the regulation of algorithmic biases and discrimination. In this context, based on legal and policy documents and literature, the article will firstly sketch out the theoretical framework and show on which levels the Brussels effect enables the EU to influence the international debate on GE. Secondly, the article observes that AI blurs the lines between local and global regulation and advocates for a global rather than local coordinated regulatory effort. Against this background, the article argues that the EU is well placed to regulate AI and its discriminatory impacts. Thirdly, some avenues will be sketched out regarding how such a potential future regulation could be designed with a view to ensuring GE not only in but also beyond the EU. It will be argued that regulating AI systems by the force of law is the *conditio sine qua non* to address biases and discriminatory outcomes, which can be complemented by different approaches but not replaced by milder forms of regulation.

## 1. How the Brussels Effect Contributes to the Global Reach of EU Gender Equality Law

This section explains how the Brussels effect enables the EU to shape the behaviour of firms and states beyond its jurisdiction and nudge them to adhere and adopt certain rules and standards. To build the theoretical framework for the analysis, the relevant Treaty provisions, legal texts, and official policy documents in the area of EU gender equality will serve to illustrate the political, legal, and economic angles of the Brussels effect.

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[23] See for example EIGE Gender Equality Index that tries to measure progress in Gender Equality: European Institute for Gender Equality, *Gender Equality Index*, 2020, https://eige.europa.eu/gender-equality-index/2020.

[24] A recent film "Coded Bias" shows the impacts of AI on race and gender. See Women Make Movies, *Coded Bias*, 2020, https://www.wmm.com/sponsored-project/codedbias/.

[25] European Commission, "Commission Work Programme 2021: A Union of vitality in a world of fragility", 19 October 2020, https://eur-lex.europa.eu/resource.html?uri=cellar%3A91ce5c0f-12b6-11eb9a5401aa75ed71a1.0001.02/DOC_1&format=PDF.

[26] Ursula von der Leyen, "A Union that strives for more. My agenda for Europe: Political Guidelines for the next European Commission 2019–2024", 2019,
 https://ec.europa.eu/info/sites/info/files/political-guidelines-next-commission_en_0.pdf.

[27] European Commission, "A Union of Equality: Gender Equality Strategy 2020–2025", 5 March 2020, https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52020DC0152&from=EN.

[28] *Ibid.*

[29] *Ibid.*

The EU defines itself as a "Union of Equality"[30]. The Gender Equality Strategy, which sets the political agenda of the European Commission for 2020–2025, identifies key political goals within the Union, but also identifies GE as a foreign policy concern and introduces "gender equality and women's empowerment across the world"[31] as a key objective: "Gender inequality is a global problem. Gender equality and women's empowerment is a core objective of EU external action."[32] Under the heading "A stronger Europe in the world", the EC President stated, "I want Europe to strive for more by strengthening our unique brand of responsible global leadership"[33], and announced that she will lead "a geopolitical Commission"[34]. According to the above-mentioned policy documents and as evidenced by available donor information[35], the EU contributes in all its actions to achieve GE worldwide, including the Sustainable Development Goals, in particular SDG 5 ('Achieve gender equality and empower all women and girls')[36].

Regarding its foreign policy, the EU also adopted a framework to promote gender equality worldwide. These successive so-called EU Gender Action Plans (GAP) strategise how GE and women's empowerment should be reflected in external relations. In November 2020, the third EU Gender Action Plan (GAP) III was adopted for 2021–2025[37]. The GAP III reflects the above-mentioned GES and the Political Guidelines of the EC President.[38] Qualified as "an ambitious agenda for gender equality and women's empowerment in EU external action", the GAP III aims to strive towards a gender equal world – and includes GE as a foreign policy objective.[39] Despite highlighting the possibility of "gender biases through Artificial Intelligence"[40], the GAP offers no in-depth analysis of the nexus between AI and non-discrimination[41] or concrete political ideas on the impact of AI on non-discrimination. The EU also contributes to the work of many international organisations[42] that shape the legal and political rule-making across the globe.

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[30] *Ibid.*

[31] *Ibid.*, p. 17.

[32] *Ibi*d., p. 17.

[33] Von der Leyen, "Political Guidelines for the next European Commission 2019–2024", *op. cit.*, p. 17.

[34] Lili Bayer, "Meet von der Leyen's 'geopolitical Commission'", *Politico Europe*, 4 December 2019, https://www.politico.eu/article/meet-ursula-von-der-leyen-geopolitical-commission/.

[35] OECD, "European Union institutions", in *Development Co-operation Profiles* (Paris: OECD Publishing, 2020); Donor Tracker, "Gender Equality", https://donortracker.org/sector/gender-equality; OECD, "Aid in Support of Gender Equality and Women's Empowerment: Donor Charts", 2019, https://www.oecd.org/dac/financing-sustainable-development/development-finance-topics/Aid-to-gender-equality-donor-charts-2019.pdf, p. 13.

[36] United Nations, "Goal 5: Achieve Gender Equality and Empower All Women and Girls", https://sdgs.un.org/goals/goal5.

[37] European Commission, "EU Gender Action Plan III – An Ambitious Agenda for Gender Equality and Women's Empowerment in EU External Action", 25 November 2020, https://ec.europa.eu/international-partnerships/system/files/join-2020-17-final_en.pdf.

[38] See Von der Leyen, "Political Guidelines for the next European Commission 2019–2024", *op. cit.* The implementation of the GAP III applies "to the Commission services and the EEAS, covering interventions and actions at country, regional/multi-country, and international levels": European Commission, "Joint Staff Working Document: Objectives and Indicators to frame the implementation of the Gender Action Plan III (2021-25)", SWD(2020)284 final, p. 21.

[39] It also includes a brief section on digitalisation and refers to discriminations as a result of the digital divide.

[40] European Commission, GAP III, *op. cit.*, p. 20.

[41] Which is not surprising, considering that it was published before the EC AIA proposal.

[42] For example, the International Labor Organization or the World Trade Organization (WTO) which usually do not include social considerations; see Benoit Frydman, *Petit manuel pratique de droit global*, (Brussels: Académie royale de Belgique, 2014), p. 64. However, trade and gender are on the agenda of multilateral organisations: see WTO, "Women and Trade: The role of trade in promoting gender equality", https://www.wto.org/english/res_e/publications_e/women_trade_pub2807_e.htm; OECD, "How can trade contribute to women's empowerment?", https://www.oecd.org/trade/topics/trade-and-gender/; UNCTAD, "Trade and Gender: Opportunities and Challenges for Developing Countries", 2004, https://unctad.org/system/files/official-

However, the EU's global actorness to promote gender equality is confined to some limits by the lack of legal enforcement powers beyond the EU jurisdiction. Where legal enforcement is not possible, influence can only be exerted via political and economic means; one powerful tool of the EU is the shaping of policies worldwide via its role as a financial donor.[43] The strength of the EU is therefore powered and limited by its political persuasion and the economic attractiveness of the EU Single Market. Bradford[44] has developed a theoretical foundation of the Brussels effect based on five elements: market size, regulatory capacity, stringent standards, inelastic targets, and non-divisibility. Arguing on this basis, this article refers to some of these different elements throughout the text but will do so by looking and schematising those ideas by distinguishing three angles of the Brussels effect: political, legal, and economic. Whereas the political impact refers to traditional public diplomacy and political agency, legal impact refers to the EU's traditional enforcement and regulatory powers via EU legislation and policy. The economic impact refers to the attractiveness of the EU Single Market and works as an economic incentive for private actors and states to adopt behaviour and standards to comply with and access the EU Single Market without any specific legal obligation or political influence being exercised.

## 1.1. Political Impact

Political impact can be defined as the leverage and influence that the EU can exercise through the framework of public diplomacy and representation in political and multilateral fora over states and private actors and make them adopt European values, standards, or laws without exercising economic or legal power.[45] The EU exercises its political impact regarding GE in international and multilateral fora, such as the UN[46], WTO[47], G7[48], G20[49] and ILO[50]. The EU also advances its policy objectives in the yearly UN conference of the Commission on the Status of Women

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document/edm20042_en.pdf; World Bank, "Trade & Gender", https://www.worldbank.org/en/topic/trade/brief/trade-and-gender; ITC, "Women and Trade", https://www.intracen.org/itc/women-and-trade/.

[43] See Section 2.3.

[44] Bradford, *The Brussels Effect: How the European Union Rules the World, op. cit.*

[45] See for example Anu Bradford, "Exporting standards: The externalization of the EU's regulatory power via markets", *International Review of Law and Economics* 42 (2015), 158-173, who speaks of "political agency" in this regard.

[46] The EU describes the relationship between EU and United Nations (UN) as follows: "The European Union and the United Nations are natural partners. We are the world's leading proponents and defenders of a multilateral and rules-based global governance system. Together, we respond to global crises, threats and challenges which cannot be addressed by individual nations acting alone, and require cooperation and coordination based on universal values and rules.", see European External Action Service, "EU-UN: Global Partners", 23 June 2021, https://eeas.europa.eu/headquarters/headquarters-homepage/50880/eu–un-partnership-delivers_en.
A factsheet details the EU-UN relationships as global partners and highlights the cooperation and coordination based on universal values and rules, see European External Action Service, "EU-UN: Global Partners", February 2021, *https://eeas.europa.eu/sites/default/files/eu_un_partnership_2021-02-16_0.pdf*, p. 1.

[47] WTO, "The European Union and the WTO", https://www.wto.org/english//thewto_e/countries_e/european_communities_e.htm.

[48] European Commission, "Role of the G7", https://ec.europa.eu/info/food-farming-fisheries/farming/international-cooperation/international-organisations/g7_en.

[49] Juha Jokela, "The High-Level Representation of the EU in the G20", *Studia Diplomatica* 65 (2012), 21-30.

[50] Already in 1958, the EU signed its first cooperation agreement with the ILO, reflecting common values, principles and strategic objectives: ILO, "European Union- ILO Cooperation", 2019, https://www.ilo.org/pardev/donors/WCMS_350516/lang--en/index.htm.

(CSW)[51], which is the principal global intergovernmental body[52] exclusively dedicated to the promotion of GE and the empowerment of women[53]. UN Women plays a vital role in advancing GE in the world.[54] Acting alongside the Member States (MS), the EU is putting on the agenda gender equality policy and non-discrimination.

Political impact and agenda-shaping occurs also in the framework of the G7, an informal forum of heads of governments[55]. In addition to Germany, France and Italy, the EU has also been represented in all G7 work sessions since 1981[56] and can thereby influence the gender equality debate. One example is the recent G7 Gender Equality Advisory Council process, adopting Recommendations for advancing GE and the empowerment of girls and women[57] as well as a Call to Action[58]. The EU's voice is heard via its representatives and its MS[59]. Not being part of the G7 as such but an independent body, it calls on the G7 members and other countries to join the Biarritz Partnership by adopting and implementing progressive legislative frameworks for GE. Unfortunately, neither the report nor the call to action mentions the challenges in relation to technological advances such as AI and its impacts on GE.[60]

Gender equality is increasingly on the EU's trade policy agenda. Authors have identified a nexus[61] between trade and gender[62]. To some extent, GE and non-discrimination increasingly play a role in trade negotiations[63] between the EU and third countries, which gives the EU some leverage to ensure observance of the principle of non-discrimination in countries with which it

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[51] UN Women, "Commission on the Status of Women", https://www.unwomen.org/en/csw.

[52] It was established in 1946, as a functional commission of the Economic and Social Council (ECOSOC). See United Nations ECOSOC resolution 11(II) of 21 June 1946, https://www.un.org/women-watch/daw/csw/pdf/CSW_founding_resolution_1946.pdf.

[53] The impact of new technologies including AI frequently appear on the agenda of CSW and have been discussed during 2020 and will be again on the agenda in 2023. For 2023, for example, the priority theme is "Innovation and technological change, and education in the digital age for achieving gender equality and the empowerment of all women and girls". See UN Women, *op. cit.*

[54] Its close links to the EU manifest itself in the UN Women office in Brussels and by its participation in the Advisory Committee for Gender Equality of the EC as an observer. See European Commission, "Advisory committee on equal opportunities for women and men", https://ec.europa.eu/info/policies/justice-and-fundamental-rights/gender-equality/who-we-work-gender-equality/high-level-group-gender-mainstreaming-and-advisory-committee-equal-opportunities-women-and-men_en#advisorycommitteeonequalopportunitiesforwomenandmen.

[55] In 2018, the G7 Gender Equality Advisory Council was created under the Canadian Presidency.

[56] European Commission, "Role of the G7", *op. cit.*

[57] Élysée, "Biarritz Partnership for Gender Equality: Recommendations of the Gender Equality Advisory Council for Advancing Gender Equality and the Empowerment of Girls and Women and Call to Action", 2019, https://www.elysee.fr/admin/upload/default/0001/05/cfb1e2ba2b9aa09c1660f1b6df2cabbc815eecc2.pdf.

[58] *Ibid.*

[59] Élysée, "Publication of the Report of the G7 Gender Equality Advisory Council", 2019, https://www.elysee.fr/en/g7/2019/08/20/publication-of-the-report-of-the-g7-gender-equality-advisory-council. The Advisory Council has for example identified 79 good practices in GE laws in 4 sectors (violence, economic empowerment, education and health, discrimination) and in all regions of the world.

[60] The only reference made is to the STEM sector.

[61] The nexus refers to the relationship trade and gender equality, such as when trade expands, sectors intensive in female labour are hugely impacted and the gender wage gap tends to widen and female labour force participation tends to fall. See for example Philip Sauré and Hosny Zoabi, "International Trade, the Gender Wage Gap and Female Labor Force Participation", *Journal of Development Economics* 111, Issue C, (2014), 17-33.

[62] One example is the EU-Chile free trade agreement. See European Commission, "Countries and regions: Chile", https://ec.europa.eu/trade/policy/countries-and-regions/countries/chile/.

[63] The EU is regularly monitoring the implementation of trade agreements and analyses the leverage of trade and investment to achieve sustainable development goals. See European Commission, "Report on the Implementation of EU Trade agreements, 1 January 2019 – 31 December 2019", COM(2020)705 final, https://ec.europa.eu/transparency/regdoc/rep/1/2020/EN/COM-2020-705-F1-EN-MAIN-PART-1.PDF, p. 28.

trades.[64] The International Labor Organization (ILO) also plays a major role as forum to contribute to GE.[65] The EU participates in discussions and negotiations at the institutional meetings of the ILO in Geneva in the framework of both the International Labour Conference and the Governing Body.[66]

Regulatory efforts with regard to AI can also be supported by gender supportive policies and positive action measures, such as increasing the proportion of women in the STEM (science, technology, engineering, mathematics) sector, notably computer scientists and programmers. The digital agenda is not only human-made, but also mostly man-made. In this context, it needs to be noted that worldwide, around half of all women have no access to the internet and digital technologies ("gender gap in internet access").[67] Additionally, many women have less time to engage with digital technologies. Closing the digital gender gap and encouraging women and girls to acquire STEM skills are therefore among the EU's priorities to ensure GE also beyond the EU.[68] Serving as a political role model and defending EU values and the principle of non-discrimination not only offline but also online can also serve as a best practice around the globe.

Despite being less effective than legal or economic leverages, the political angle of the Brussels effect plays an important role in the policy dialogue and public diplomacy of the EU, notably in terms of agenda setting and with a more mid- to long-term view to gradually achieving the implementation of EU values. Its importance lies in facilitating and promoting regulatory ideas and it can also complement any economic and legal impacts intended by the EU to reinforce the Brussels effect.

### 1.2. Legal impact

The legal impact refers to the EU's traditional enforcement and regulatory powers via EU legislation as interpreted by the Court of Justice of the European Union (CJEU). MS have the legal obligation to transpose directives into national law and regulations are directly applicable. EU legislative acts sometimes produce effects not only within but also beyond the EU jurisdiction.[69] Equally, the obligation of candidate countries to adopt the *EU* acquis is a clear example thereof.

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[64] For a critical analysis pointing out the tension between the EU's commercial and social interests, see Lachian McKenzie and Katharina L. Meissner, "Human Rights Conditionality in European Union Trade Negotiations: The Case of the EU–Singapore FTA", *Journal of Common Market Studies* 55, no. 4 (2017) 832-849. See also Guillaume Van der Loo, "'Mixed' feelings about the EU–Mercosur deal: How to leverage it for sustainable development", Brussels: Egmont Institute, April 2021, https://www.egmontinstitute.be/mixed-feelings-about-the-eu-mercosur-deal-how-to-leverage-it-for-sustainable-development/.

[65] It has offices in Brussels and has been closely cooperating with the EU since 1958.

[66] The EU often plays a key role in the adoption of conventions, recommendations and resolutions by cooperating closely with emerging economies, developing countries and social partners, for example during the adoption of the June 2008 ILO Declaration on Social Justice for a Fair Globalization or the recent ILO Convention C190 on Violence and Harassment.

[67] For concrete data, see World Wide Web Foundation, "The gender gap in Internet access: Using a women-centred method", https://webfoundation.org/2020/03/the-gender-gap-in-internet-access-using-a-women-centred-method/

[68] See for example European Parliament, "Resolution of 21 January 2021 on closing the digital gender gap: women's participation in the digital economy" (2019/2168(INI)), 21 January 2021, https://www.europarl.europa.eu/doceo/document/TA-9-2021-0026_EN.html.

[69] See European Commission, "Proposal for a Regulation of the European Parliament and of the Council Laying Down Harmonised Rules on Artificial Intelligence (Artificial Intelligence Act) and Amending Certain Union Legislative Acts", COM (2021)206 Final; European Commission, "Communication from the Commission to the European

In light of Article 21(1) TEU, which provides that the EU's actions on the international scene "shall be guided by the principles which have inspired its own creation, development and enlargement, and which it seeks to advance in the wider world", contributing to GE worldwide is a key part of EU foreign policy.[70] In this context, the EC adopted the 2020–2024 Action Plan (AP) for Human Rights and Democracy which underlines the EU's commitment to promoting and protecting these values worldwide.[71] The AP specifically aims to "step up action to combat all forms of discrimination including on grounds of sex".[72] It makes specific reference to the need to harness opportunities and address challenges in relation to new technologies such as AI.[73] More specifically, it aims to "engage with governments, civil society, businesses and UN agencies to consider how to enforce human rights frameworks in the digital age."[74] Finally, the AP also makes specific reference to the AI White Paper.[75]

On 21 April 2021, the EC adopted a proposal for an Artificial Intelligence Act (AIA). This proposal is accompanied by a political Communication that states that it forms part of the "European Union's efforts to be an active player in international and multilateral fora in the field of digital technologies and a global leader in the promotion of trustworthy AI, and to ensure consistency between the EU's external actions and its internal policies".[76] It results that the AIA will be key in putting the EU not only to the forefront in terms of political agenda setting, but also in terms of shaping markets based on binding regulatory provisions foreseeing the application of the rules to firms located outside the EU.

Companies that want to trade with the EU need to respect environmental, consumer or non-discrimination standards. This is most notably the case for data protection or competition law standards affecting international firms that trade within the EU Single Market or which affect EU consumers. EU competition law is equipped with the tools to capture anti-competitive behaviour that finds its source outside the jurisdiction of the EU, but which has effects within the EU market, the so-called extraterritorial (effects) doctrine.[77] In practice, many non-EU firms have been fined by the EC for anti-competitive behaviour under the EU Treaties.[78] Even though the CJEU has not ruled affirmatively the effects doctrine under EU law, the General Court in *Intel* opened the possibility under international law to allow for a "qualified effects" doctrine.[79]

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Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Fostering a European Approach to Artificial Intelligence", COM(2021)205 Final.

[70] See notably Article 3(5) TEU obliging the Union to uphold and promote its values (which includes gender equality and non-discrimination) as well as to contribute to the protection of human rights.

[71] European Commission, "EU Action Plan on Human Rights and Democracy 2020-2024", JOIN(2020)5 final, https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52020JC0005&rid=3.

[72] *Ibid*, p. 3.

[73] *Ibid*, p. 13: "Promoting human rights and democracy in the use of digital technologies, including Artificial Intelligence".

[74] Ibid, p. 12.

[75] Ibid, 13: "Promote EU action, and support global and regional efforts to ensure respect for human rights and democratic principles in the development of AI, building on the EU's own developing approach to ethical AI".

[76] European Commission, "Fostering a European approach to Artificial Intelligence", *op. cit.*, p. 4.

[77] Richard Whish and David Bailey, *Competition Law* (Oxford: Oxford University Press, 2015), 526-531, 8th ed.

[78] See for example the €2.2 billion fine for Google: European Commission, "Commission decision of 27 June 2017 relating to a proceeding under Article 102 of the Treaty on the Functioning of the European Union and Article 54 of the EEA Agreement (Case AT.39740 - Google Search (Shopping)", C(2017)4444.

[79] Court of Justice of the European Union, Judgement of 12 June 2014, *Intel v Commission*, Case T-286/09, EU:T:2014:547.

For legal effects to materialise beyond the borders of the EU Single Market, a legal framework must exist. For AI regulation there is currently only the draft AIA Regulation. As has been highlighted for many different domains such as chemicals and data protection by Bradford[80], a European legal framework exercises a certain attractiveness and combined with the market mechanism that plays out with the European Single Market, firms would be obliged to obey certain minimum standards if they want to sell on the EU market, but also *de facto* if they produce products that are "sellable" in multiple markets. The scope of the draft AIA includes provisions that model a legal impact in line with the Brussels effect, by enlarging the scope of the regulatory regime for AI beyond the EU Single Market. It notably states that the Regulation would apply to "providers placing on the market or putting into service AI systems in the Union, irrespective of whether those providers are established within the Union or in a third country" as well as "providers and users of AI systems that are located in a third country, where the output produced by the system is used in the Union".[81] In other words, the AIA would introduce an obligation for non-EU companies to comply with the EU standards in relation to AI and non-discrimination, when selling in the EU and when any AI system is used in the EU and has an impact on EU citizens. This broad-reaching norm imposes compliance obligations on EU and non-EU firms alike if an AI system produces potential discriminatory risks within the EU.

### 1.3. *Economic impact*

The economic impact refers to the attractiveness of the EU Single Market, which incentivises private actors and states to adopt behaviour and standards to comply with and access the EU Single Market without a specific legal obligation or political influence being exercised.[82] The attractiveness of the EU's Single Market[83] with harmonised rules for 27 countries, notably in terms of the market size for potential investments, is a feature considered by firms worldwide. Complying with EU rules or standards enables firms to sell in the EU and access around 450 million consumers. Chances of EU standards being adopted and incorporated into products by firms worldwide are therefore relatively high to reduce administrative and regulatory costs. By producing one product that fits all or the most important markets, firms become more competitive. Creating a product that respects high (non-discrimination) standards for consumers could therefore be an attractive choice to enable firms to sell on different markets. In that way, the market mechanism could lead firms to automatically adopt the higher standards, observing the principle of non-discrimination. However, this would only be required for selling in the EU Single Market. Such a push towards "EU-flavoured" gender equality law is certainly supported and incentivised by generous EU funding for projects in the area of gender equality law, which represented for example in 2018 a commitment to allocate 63% of the bilateral aid to gender equality and women's empowerment.[84]

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[80] Bradford, "The Brussels Effect: How the European Union Rules the World", *op. cit.*, pp. 132 (data protection) and 193 (chemicals).

[81] European Commission, "Artificial Intelligence Act", *op. cit.*, Article 2(1).

[82] Bradford refers for example to "market size" but specifies that "only large economie scan become source of globla standards" and adds that market size alone is not sufficient. See Bradford, "Brussels Effect: How the European Union Rules the World", *op. cit.*, p. 26.

[83] See European Commission, "The European Single Market", https://ec.europa.eu/growth/single-market_en: "The single market refers to the EU as one territory without any internal borders or other regulatory obstacles to the free movement of goods and services. A functioning single market stimulates competition and trade, improves efficiency, raises quality, and helps cut prices. The European single market is one of the EU's greatest achievements. It has fuelled economic growth and made the everyday life of European businesses and consumers easier".

[84] OECD, "European Union institituion", *op. cit.*

Highly competitive markets could also favour the adoption of a high standard[85] implementing the principle of non-discrimination in products and services because consumers around the world are inspired by high consumer protection standards in the EU, and could ask for products with the same guarantee of non-discriminatory AI.[86] The market could thus produce the same outcome as a European rule *de facto* by creating a consumer demand for non-discriminatory AI.

Concluding, the political impacts of the Brussels effect are rather indirect and take longer to materialise. Legal and economic impacts produce tangible effects via financing or adoption of legal standards more directly, equally in the short and the long-term perspective.

## 2. From Local to Global Reach: Regulating Algorithmic Discrimination

AI blurs the lines between local jurisdictions that struggle to ensure the effective enforcement against algorithmic discriminations. In other words, even if the EU is equipped with a legal framework ensuring non-discriminatory algorithms, this would probably not prevent all discrimination from occurring within the EU and for EU citizens. The question is to what extent EU law would be able to capture AI systems that are operated from other jurisdictions but have potentially discriminatory effects for Union citizens. One solution could be to use the competition law effects doctrine type of legal reasoning to capture potential discriminatory behaviour that shows effects within the EU and on EU citizens. Another, more interventionist approach would consist of regulation that allows AI to be marketed and used in the EU only in case of a green light from a regulatory authority dedicated to grant market authorisations for AI. If AI is considered a risk for human rights[87] and the principle of non-discrimination, one could envisage a scenario similar to chemicals or pharmaceuticals, where products have to undergo a regulatory authorisation procedure before entering the EU market. Any future EU regulation has the potential to either serve as blueprint to be imitated by other countries or to nudge countries in a certain policy direction to achieve gender equality and avoid algorithmic discrimination.

*2.1. EU Algorithmic Regulation as Blueprint for the World: Following in the Footsteps of the EU GDPR*

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[85] Standards could also be set by European standard-setting organisations such as CEN-CENELEC, which tries to follow an inclusive standard setting approach by applying a gender lens. See for example CEN-CENELEC's reply to the EC White Paper on AI. They can then become a *de facto* standard, see Simon Den Uijl, *The Emergence of De Facto Standards* (PhD Dissertation, Erasmus University Rotterdam, 2015).

[86] However, there is some critical literature regarding ethical principles ("fair-trade") and competitiveness that argues firms with ethical principles can only be competitive if they differentiate and also take into account other features beyond "fairness". See Eefje de Gelder et al, "Market Competition and Ethical Standards: The Case of Fair Trade Mainstreaming", *Review of Social Economy* 79, no. 2 (2019), 1-31.

[87] A risk not necessarily to life as is the case for AI systems used in driverless vehicles but which has certainly similar impacts.

The General Data Protection Regulation (GDPR)[88] is known beyond the EU jurisdiction and regarded as an example of worldwide standard-setting[89] inspiring regulation, affecting firms worldwide. Indeed, EU privacy law, even if not the standard world-wide, seems to be in the process of becoming a widely copied and imitated standard[90] that market players voluntarily adhere to for their products and services. This is an example of EU law being considered as a well-recognised legal regime that is followed and which could inspire the approach for EU flavoured algorithmic discrimination regulation. A first step in this direction seems to be taken by the EU proposal for the Artificial Intelligence Act which foresees a scope that captures firms, behaviours and impacts within and outside of the EU jurisdiction. Similar to competition law, EU law would apply even for third-country companies established outside the EU, if "outputs produced by the [AI] systems are used in the Union".[91] As the foregoing analysis of the legal, political, and economic attractiveness of the European Union and the associated Brussels effect has shown, there is an opportunity for the EU to shape the regulation of algorithmic discrimination beyond the EU's borders, as is the case for EU privacy law.

Such a globally coordinated approach or a political consensus emerging as a result of the Brussels effect would better capture discriminations crossing borders when AI is used. Albeit slowly, regulatory ideas equally "cross borders" and regulators cooperate and imitate rules to ensure a fair and non-discriminatory use of AI. Once the EU has adopted a legislative proposal, this can be the start in bringing the concrete policy debate beyond the EU even before adoption by co-legislators. Such a process can be observed in accession negotiations for future EU MS that already try to adhere to forthcoming or future standards before they are even adopted.[92] Finally, it can shape the debate and inspire countries worldwide, when the EU introduces the cornerstones of the AI and Gender debate via its representation in international fora.

### 2.2. An Imitation and Inspiration Game: Should the EU Lead in Shaping the Regulation of Algorithmic Discrimination?

A balanced process of inspiration, imitation and coordination could improve the regulation of algorithms around gender-based discrimination. The preamble of the Treaty on European Union recalls that the EU draws inspiration "from the cultural, religious and humanist inheritance of Europe, from which have developed the universal values of the inviolable and inalienable rights

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[88] Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation), OJ L 119, 4.5.2016, p. 1–88.

[89] For approaches to regulate AI from a data protection and discrimination perspective see, Philipp Hacker, "Teaching Fairness to Artificial Intelligence: Existing and Novel Strategies Against Algorithmic Discrimination under EU Law" *Common Market Law Review* 55 (2018), 1143-1186.

[90] See for example, Jonathan Keane, "From California to Brazil: Europe's privacy laws have created a recipe for the world", *CNBC*, 8 April 2021, https://www.cnbc.com/2021/04/08/from-california-to-brazil-gdpr-has-created-recipe-for-the-world.html; Catherine Barrett, "Are the EU GDPR and the California CCPA becoming the de facto global standards for data privacy and protection?" *Scitech Lawyer* 15, no. 3 (2019), 24-29.

[91] European Commission, "Artificial Intelligence Act", *op. cit.*, Art. 2(1).

[92] Article 49 TEU. For the procedure and requirements, see European Union, "Treaty on the European Union – Joining the EU", https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=LEGISSUM%3Al14536. See in general on this EU conditionality, Heather Grabbe, "European Union Conditionality and the Acquis Communautaire", *International Political Science Review* 23, no. 3 (2002), 249-268.; European Commission, "Conditions for Membership", https://ec.europa.eu/neighbourhood-enlargement/policy/conditions-membership_en.

of the human person, freedom, democracy, equality and the rule of law".[93] A Union that recalls these values and confirms its "attachment to the principles of liberty, democracy and respect for human rights and fundamental freedoms and of the rule of law"[94] needs to ensure that in the algorithmic age, these values are also ensured when decisions are increasingly taken not by humans but in the framework of automated decision making (ADM). The GES equally identifies AI as a strategic technology and advocates women to play a role in its development.[95] It further observes that "while AI can bring solutions to many societal challenges, it risks intensifying gender inequalities. Algorithms and related machine-learning, if not transparent and robust enough, risk repeating, amplifying or contributing to gender biases that programmers may not be aware of or that are the result of specific data selection." This observation holds true not only for the EU, but worldwide. There could be positive impacts generated by the Brussels effect, with the publication of the Communication[96] and the draft AIA[97] setting out the European approach to AI grounded in EU values and fundamental rights, including non-discrimination and GE.

In addition, the "founders" of the EU did not only acknowledge (gender) equality as a value to be pursued but also considered it to be a "universal" value. The EU therefore promotes equality not only internally but also externally. Having in mind these Treaty-based roots and anchors of gender equality, the influence associated with the Brussels effect and the new challenges and opportunities, the EU should regulate biased algorithms and prevent gender-based discrimination from occurring when using AI systems.

Consequently, any future AIA could not only serve as *blueprint* in regulating AI and non-discrimination but also it foresees concrete rules that shape and favour the use of non-discriminatory AI systems beyond the EU.

### 2.3. How the EU is Nudging the World into Gender Equality: The Way Forward

The EU is in a good position to shape the debate and the creation of rules regulating AI to ensure a high level of protection for GE, not only in the EU but beyond. The Brussels effect revealed the different avenues on which the power of the EU could be used for good, to nudge states and actors to pursue the road of regulating towards non-discriminatory AI systems. In that sense, Giegerich for example has argued that "the EU and Member States have done too little to promote global and regional human rights treaties which prohibit discrimination" and suggests that "the Union should improve on its role as a protagonist of equality both internally and externally, leading by example and prudent policies, thus doing a service to humanity."[98] One clear nudge that EU institutions use to foster gender equality worldwide is by providing major financial aid for projects outside the EU in the area of gender equality. This financial nudge does not only

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[93] Consolidated version of the Treaty on European Union, PREAMBLE, OJ C 202, 7.6.2016, p. 15–16.
[94] Ibid.
[95] European Commission, "A Union of Equality: Gender Equality Strategy", *op. cit.*, p. 17.
[96] European Commission, "Fostering a European approach to Artificial Intelligence", *op. cit*.
[97] European Commission, "Artificial Intelligence Act", *op. cit*. In essence, the proposal for a Regulation on AI is a horizontal legal act based on the opportunities and risks of AI. It therefore distinguishes between AI that does not need regulation, prohibitions of certain AI systems (Art. 5) and risk-based regulation where certain AI systems are classified as "high-risk" (Art. 6) whereby either cumulative criteria of Art 6(1) need to fulfilled or it constitutes an AI system listed in Annex III. For high-risk systems specific requirements (such as compliance, reporting, data, transparency) need to be observed (Art. 8 – 14).
[98] Giegerich, *op. cit.*, p. 1.

accompany and reinforce political goals but can be regarded as an incentive in its own right. Even though these observations can be endorsed in principle, against the background of the EU's role in shaping data-protection beyond EU borders, an optimistic view would argue that when it comes to regulating algorithmic discrimination, the EU will play its role. The EC's draft AIA takes the fundamental rights approach to regulating AI systems seriously and considers the principle of non-discrimination. The prominent role taken up by the EU to defend high standards in data protection in the EU and beyond paves an optimistic setting in which the European approach to regulation of data and AI systems which includes to prevent discriminatory outcomes of AI systems, is on a good way.

## 3. Towards Global Reach of EU Gender Equality Law and Shaping Algorithmic Discrimination

How does the world become more EU gender equality flavoured? And how does the flavour of EU GE become so attractive that the GE principles are endorsed globally because of its positive impacts for society? Based on the foregoing explanations and in the absence of specific rules governing algorithmic discrimination at EU level, the following chapter addresses the importance of acting now to shape the global discussion on how to regulate AI and enforce the principle of non-discrimination. This section will therefore first enunciate on the questions of why regulation is needed and what types of regulation could address the problem of discriminatory outcomes of ADM. It will then discuss the hypothetical future EU law export and the template role of the EU as shaping and regulating algorithmic discrimination beyond the EU and briefly sketch out some of the possible ways forward.

### 3.1. Regulatory Approaches by Design and by Law

This sub-section will briefly outline (a.) some reflections on why the use of algorithms does not solve the problems of decision-making errors ("biases") encountered by humans and (b.) describe some of the regulatory approaches that could be envisaged.

#### 3.1.1. Reflections on Why Regulation is Needed

AI or ADM could be described in a simplified way as AI being the vehicle, the algorithm being the engine and the data being the fuel for it to run smoothly. Without data as the fuel, the algorithm stops working. And without the right fuel, the engine will not run smoothly, that is, it will not produce accurate and correct results. Algorithms pose numerous challenges for regulators worldwide, notably in terms of discriminatory impacts.

In order to run smoothly and produce good and accurate results, the algorithm needs (a lot of) data. However, the type of data that is used to build and train the algorithm is decisive for the quality and at the same time opens the door for discriminations.[99] Huge amounts of accurate and representative data are essential. If data is incorrect, inaccurate, incomplete ("Triple I") or

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[99] Katarina Zweig, *Ein Algorithmus hat kein Taktgefühl, op. cit.*, pp. 212-213.

simply not available, this could result in different treatments for different groups and potential discriminations. Discrimination can therefore occur when no data is available, when data is available but certain groups are less represented (for example women, the so-called "Gender Data Gap") but also when specific data is left out on purpose (sensitive data such as gender is not taken up in the data) or when the algorithm is self-learning in an unsupervised way. If, for example, less data is available on female computer scientists, an algorithm used for recruitment[100] will produce less adequate and accurate results for a firm and potentially discriminate against women[101]. Consequently, not only AI systems and algorithms as such but also the underlying data could be potentially subject to scrutiny or regulatory oversight. The literature has discussed some technical solutions that could help ensure a fairer, more transparent, and potentially less discriminatory algorithms.[102]

The question of "why to regulate" shall be explained with an example from recruitment/employment where AI is used to search the ideal external candidate or to promote an ideal internal candidate. Let's imagine that a company uses an algorithm that fully automates the pre-selection of job applicants as well as video and voice analysis during interviews. Potential entry doors for discriminatory outcomes on the basis of gender could result in this example from the kind of data that is provided by the applicant (the algorithm draws discriminatory conclusions), or the inaccurate, unavailable[103], incomplete[104] or non-representative data on which the algorithm was trained. Even if sensitive or protected characteristics are not used in ADM[105], by correlating different data-points, the algorithm could infer for example the gender of an applicant which could potentially lead to discriminatory effects.[106]

### 3.1.2. Reflections on the Type of Regulation

The market itself will not ensure that algorithms do not discriminate. Self-regulation is no answer as long as there is no clear demand by consumers who will prefer AI systems that ensure the respect of the principle of non-discrimination. A competitive market would be needed to ensure the best outcomes for consumers in terms of price and quality but also in terms of respect of the principle of non-discrimination. Considering that AI systems product markets typically

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[100] Generally on recruitment algorithms, Cathy O'Neil, *Weapons of Math Destruction: How Big Data Increases Inequality and Threatens Democracy*, (Largo: Crown, 2016), 105-122.

[101] Amazon used such a discriminatory AI for recruitment but subsequently stopped the AI. See Jeffrey Dastin, "Amazon scraps secret AI recruiting tool that showed bias against women", *Reuters*, 11 October 2018, https://www.reuters.com/article/us-amazon-com-jobs-automation-insight-idUSKCN1MK08G.

[102] See for example, Bruno Lepri et al, "Fair, Transparent, and Accountable Algorithmic Decision-Making Processes", *Philosophy & Technology* 31 (2018): 611-627.

[103] Often this situation is referred to as the gender data gap, see Mayra Buvinic and Ruth Levine, "Closing the Gender Data Gap", *Significance* 13, no. 2 (2016): 34-37.

[104] The absence of data for women is relevant for policy both in the offline and online world, but particularly due its working for AI, see section "No data, bad data", *Ibid.*, p. 34.

[105] Under Article 22(1) of the GDPR, data subjects "have the right not to be subject to a decision based solely on automated processing, including profiling, which produces legal effects concerning him or her or similarly significantly affects him or her" which is for example not applicable according to Article 22(2b) when "authorised by Union or Member State law to which the controller is subject and which also lays down suitable measures to safeguard the data subject's rights and freedoms and legitimate interests" or in the case of explicit consent (Art. 22(2)(b)). A future EU AI legislation, such as the AIA, could be considered as guaranteeing such suitable measures to protect the rights of EU citizens.

[106] Katarina Zweig, *Algorithmische Entscheidungen: Transparenz und Kontrolle* (Berlin: Konrad-Adenauer-Stiftung, 2019); Katarina Zweig, *Ein Algorithmus hat kein Taktgefühl, op. cit.*, pp. 215-218.

have a rather oligopolistic or monopolistic market structure[107], such an approach currently seems unpromising.[108] As a result, due to the lack of competitive pressure, regulation and additional costs, firms have no incentives to produce non-discrimination friendly products and services unless obliged by the law.

Therefore, regulatory options range from incorporating the idea of non-discrimination in the AI systems from the design stage onwards or to regulate by law. A combination of regulation at the design stage, by building elements of the principle of non-discrimination into the code of the algorithm and at the same time foreseeing legal obligations and oversight of the algorithm by regulators, is possible. Drawing on economics and competition law insights, a decisive factor for regulating AI that potentially discriminates (on the basis of sex) is the competitive landscape of the product and services market. If there is enough competitive pressure that allows either the market to adapt or consumers to choose from a variety of different products and services (opting for non-discriminatory AI for example), the need for regulation is not off the table, but less urgent. The more monopolistic the market for AI systems is, the more regulation is needed in principle. In terms of timing, regulation can occur before the AI product enters the market (*ex ante*) or once it is on the market (*ex post*). Equally, a mix of *ex ante* and *ex post* regulation is possible and could also be envisaged depending on the type of product or on the expected harm/risk that is associated with a product or service. For example, if a product creates important or irreversible harm for the lives of consumers, *ex ante* regulation could be envisaged, whereas small risks or reversible harm could be regulated via an *ex post* model of regulation.

The difficulty here is how to classify discriminations on the basis of sex. If a woman is not (pre-)selected for a job due to a discriminatory algorithm, would this be considered a huge or a small risk/harm and is this reversible? Such answers are not easy. What is clear is that a violation of a fundamental principle of the EU should be regarded as significant harm, whether reversible or not,[109] and should be classified as a risk to regulate.[110] Finally, besides regulating AI, algorithms can also play a vital role in assisting the regulator to detect gender-based discriminations and to better enforce the non-discrimination rules.[111]

### 3.2. Exporting EU Gender Equality Law to Prevent Algorithmic Discrimination

The Artificial Intelligence Act (AIA)[112] – if adopted by co-legislators – could be a candidate to be imitated or exported beyond the EU. The first step of the legislative procedure has only started, and it may take some time until a potential Regulation would become binding EU law. The Communication accompanying the legislative proposal explains how it intends to create EU global

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[107] See for example, Nicolas Petit, *Big Tech and the Digital Economy: The Moligopoly Scenario (*Oxford: Oxford University Press, 2020).

[108] The public and academic debate is relatively recent and not much progress in terms of regulations has occurred.

[109] Risks or harm in relation to the labour market can have significant life-changing impacts, especially if those decisions are taken in an opaque manner difficult to understand and when harm is done difficult to compensate. See for example in relation to using ADM for administrative decision-making, Maryam Haeri et al, "Denkanstöße zum Einsatz von ADM-Systemen in der öffentlichen Verwaltung", *Technische Universität Kaiserslautern*, 2020.

[110] For a risk matrix developed by Zweig, foreseeing 5 different regulatory stages taking into account different factors, see Katarina Zweig, *Ein Algorithmus hat kein Taktgefühl, op. cit.*, pp. 234-245.

[111] Despite its importance, this aspect will not be discussed here in detail. For an overview, see for example from a computer science perspective, Jon Kleinberg et al, "Discrimination in the Age of Algorithms", *Journal of Legal Analysis* 10 (2018): 113-174.

[112] European Commission, "Artificial Intelligence Act", *op. cit.*

leadership with a revised coordinated plan on AI. implicitly alluding to the Brussels effect of EU regulation.[113]

The agenda around the world, could be shaped by the draft AIA as well as the academic, institutional and public debates how to regulate AI to ensure GE. The sooner the discussion starts, the more inclusive and fruitful the debate can be and the more likely it is that a broad consensus can be found how to shape AI respecting human rights.

Legal scholars have observed that if standards incorporated in EU law are transferred beyond the EU's jurisdiction, one could speak of an "externalisation" or rules export often through the market mechanism without the interference of political or regulatory power.[114] Other scholars have been more critical of the use of norm export but acknowledge nevertheless an effect that EU law and policy have in shaping regulation beyond the jurisdiction of the EU.[115] In any case, European ideas and values are being exported which influence and shape the regulatory scene worldwide. Whether the norms are directly exported and taken up in other jurisdictions or merely modelled or inspired by EU law does not alter the impact that is usually described by the Brussels effect. In this area, other soft law and non-binding instruments exist to shape GE values beyond the EU, such as the ones taken up in the Joint Staff Working Document accompanying the GAP III[116], where EU institutional and strategic objectives and indicators are laid down. These concrete objectives should be achieved via gender mainstreaming, funding and programs to be implemented in light of the GAP III and are measured with indicators. The EU wants to lead by example in this regard.

## Conclusion

There is an undeniable need for regulation of algorithmic discrimination both for the EU and worldwide. Preferably this should be done in the form of binding rules, as the market alone will not be able to ensure sufficiently the respect of the principle of non-discrimination. Therefore, the EU as a global actor pursuing a human rights-based approach in all its activities is well placed to serve as a regulatory model for AI particularly with regard to its impacts on GE. In that regard, the Brussels effect could contribute to a situation where more and more women and men around the world profit from a protective framework against discrimination including algorithmic discrimination. Political impacts of the Brussels effect are supportive and helpful to argue the case of regulating AI systems beyond the EU, but not sufficient to this end. Only the economic impact stemming from the EU Single Market's attractiveness together with the legal impacts of binding EU legislation – with a first good proposal for a Regulation with the AIA – will ensure that the principle of non-discrimination is respected in and beyond the EU when AI systems are used.

Products and services with discriminatory impacts are already used around the world on a daily basis and current laws and regulators in the EU and beyond often are not equipped with the right

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[113] European Commission, "Fostering a European approach to Artificial Intelligence", *op. cit.*, pp. 7-9.

[114] Anu Bradford, "Exporting standards", *op. cit*.

[115] See for example, Joanne Scott, "Extraterritoriality and Territorial Extension in EU Law", *The American Journal of Comparative Law* 62, no. 1 (Winter 2014): 87-126. (Notably explains global reach of EU law in the context of current debates about the rise of the EU as a global regulatory power and takes a critical approach to the phenomenom of EU norms export).

[116] European Commission, "Joint Staff Working Document: Objectives and Indicators to frame the implementation of the Gender Action Plan III (2021-25), *op. cit.*, p. 21.

tools. The proposal for an EU AIA[117] (and the Digital Services Act[118] and Digital Markets Act[119]) shows that the EU is on a good way to follow in its own footsteps with regard to the bold approach taken in data-protection law, and to pursue a regulatory approach to AI in the area of GE law that preserves rights of both women and men when they are confronted with AI systems that take decisions that impact their lives.

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[117] Despite being a horizontal legislative instrument, the Communication mentions the EU Gender Equality Strategy and the proposal for a Regulation refers 19 times to issues relevant to gender equality Law: "gender" (1 mention), "non-discrimination" (16 mentions) and "women" (2 mentions). It also mentions recruitment systems a potential object of "risk-based" regulation by classifying labour market relevant recruitment and promotion systems as "high-risk".

[118] European Commission, "Proposal for a Regulation of the European Parliament and the Council on a Single Market for Digital Services (Digital Services Act) and amending Directive 2000/31/EC", COM(2020)825 final.

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