

# Correlations between Sustainable Development Goals and Discriminations Algorítmicas Laborais

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### ABSTRACT

This article has as scope a development of correlations between objectives of sustainable analysis, notably SDGs 5, 8 and 10 of the UN 2030 Agenda, and a use

of artificial intelligence algorithms in labor relations, passing through the examination of transparency of transparency to so that there is no perpetuation of racial and gender discrimination, social fostering inequalities, to the detriment of workers. As proposals for shaping biases and actions of actions in the face of intrinsically compensatory discriminatory practices in groups to protect principles related to accuracy, explainability and intelligibility of AI mechanisms, as a way to avoid the a priori of phases exclusion in the contracting phases, maintenance and professional advancement.

**Keywords:** Discrimination, Algorithms, Sustainable Development, Human Rights, Un.

## 1 INTRODUCTION

The article under analysis aims to evaluate the correlation between the Sustainable Development Goals and the impacts of artificial intelligence mechanisms in relation to the perpetuation of discriminatory practices, as well as with regard to combating social inequalities, racism and sexism, in industrial relations . The algorithms themselves are neutral, but structural racism, patriarchal machismo and class disparities that permeate society are present in the human subconscious and are reflected in the parameterization of mathematical sequences biased in Artificial Intelligence (AI) tools.

Initially, it was intended to make considerations about the Sustainable Development Goals inserted in the UN 2030 Agenda, based on the understanding of the very principle of sustainable development itself. Moreover, there was the analysis of the interface between SDGs 8 and the fundamentality of decent and decent work for modern democracy, which is associated with the idea of right to work in fair and egalitarian conditions as an instrument for coping with social inequalities.

Then, there was the theoretical conceptualization of *algorithms*, *machine learning*, as well as links were established between AI tools and labor law. Furthermore, discrimination assessments were considered in different modalities, with emphasis on algorithmic discriminatory practices. At the same time, empirical research was mapped from foreign literature in which racist and sexist vies scans were found in algorithms related to the pre-contractual, maintenance and professional ascension phases. Emphasis was placed on how discriminatory practices also offend SDDs 5 and 10, which deal respectively with gender equality and the reduction of inequalities.

Once such ills were identified from algorithmic biases, it was analyzed how such mathematical formulas could act in a counter-majority manner, in favor of inclusive and diverse policies, as instruments

that are reatortory. At this juncture, the need for data accuracy, audits, accountability, intelligibility, transparency of Artificial Intelligence mechanisms was ratified, in order to enhance equity in labor relations, with the conformation of algorithmic vieses operating in favor of the principle of isonomy.

## 2 SUSTAINABLE DEVELOPMENT GOALS

The Sustainable Development Goals represent a global call to action to eliminate poverty, protect the environment, climate and safeguard for populations, regardless of ethnic and territorial origins, peace and prosperity. Acting towards the achievement of these objectives means contributing directly to the achievement of the UN 2030 Agenda.

According to José María Gimeno Feliu (2021, p. 67-68), the United Nations Sustainable Development Goals, foreseen in 2030 (adopted on 25 September 2015 and effective from January 2016), in order to promote convergence between EU countries, in societies and with the rest of the world, had an indisputable impact on the public agendas of all public authorities. The 17 objectives, under the motto "Transform Our World", present an integrated and indivisible character, encompassing economic, social and environmental aspects (they are a highly ambitious and transformative strategy for the future). The United Nations Agenda proposes, among other objectives, sustained, inclusive and sustainable economic growth as something essential to prosperity. In addition, the Agenda addresses factors that generate violence, insecurity and injustice, such as inequalities, corruption, poor governance, etc. (free translation)

### 2.1 PRINCIPLE OF SUSTAINABLE DEVELOPMENT

The concept of sustainable development itself can presupposition its understanding as a meta-principle, which would go beyond the idea of being a mere right. According to Jamile Mata Diz (2019, p. 86), the principle of sustainable development is based on two types of solidarity that complement each other, well elucidated in Sachs' words "the chronic solidarity with the present generations and the diachronic solidarity with future generations." Furthermore, the author (DIZ, 2019, p. 87-88) continues in the sense that:

As a metaprinciple of environmental law, sustainable development permeates any initiative, governmental or not, public or private, besides serving as a mandamental basis for the creation of new principles, norms and acts that promote due environmental protection. Furthermore, despite criticism stemming from its non-binding nature and even the categorization of the principle of international law, according to Lowe<sup>9</sup>, it is undeniable that sustainable development has been elevated to the condition of metaprinciple by establishing the search "for balance of conflicting interests of economic growth, environmental protection and social justice, whether in judicial decisions or in the elaboration of norms and policies at national and international level.

In Brazil, the right to sustainable development is intrinsically related to the recognition that much of social, civil and political rights are systematically denied in dadas partes of the planet, due to social inequality and, above all, economic disparities peoples and nations. Therefore, it is the presupposition of

achieving sustainable development globally to try to equalize economic differences and policy that result in extremely harmful social rights.

The international courts and, at the national level, also the Supreme Court, have judged that constitutes the relevance of the implementation of such a principle in a concrete way. At the European level, according to Jamile Mata Diz (2013, p. 10), not the current founding normative instrument (Treaty of Lisbon), the principle of integration is expressly provided for in Article 11 of the EU Functioning Treaty (TFEU) by establishing that " *Environmental protection requirements should be integrated into the definition and implementation of Union policies and actions, in particular with the aim of promoting sustainable development.*" . It is, therefore, a ratification of the relevance of actions between the different peoples with a view to enabling effective sustainable development.

The express prediction of such a meta principle in the Treaty of Lisbon stems from a maturing of the movement, for example, which refers to the Treaty of Amsterdam, according to which the principle of sustainable development was among the objectives of the European Community. It is therefore a question of delimiting the implementation of a high level of environmental protection as one of the European Union's absolute priorities.

According to Jamile Mata Diz (2019, p. 90-91), sob the doctrinal aspect, the principle has been analyzed from the perspective of the triple bottom line, created in 1994 by Elkington, in which it is determined that "organizations must take into account aspects not only economic, but also social and environmental, which relate to their respective activities". The concept received criticism stemming from the lack of clarity when considering and applying the variables proposed by the method, but the importance of the triple bottom line is undeniable for maintaining the defense of sustainable development in several areas, and increasingly it becomes evident the need for a legal order consistent with the highest level of environmental protection.

## 2.2 SOD 8 AND THE RIGHT TO DECENT WORK

Formalised by the ILO in 1999, the concept of decent work embodies its historic mission of providing opportunities for men and women to have access to a labor with productivity and quality, in free, equitable, safe circumstances, with the primacy of human dignity. Respect for decent work is a *sine qua non condition* for "overcoming poverty, reducing social inequalities, ensuring democratic governance and sustainable development." ORGANIZAÇÃO INTERNACIONAL DO TRABALHO, [s.d.]

The Philadelphia Declaration destines the coisification of human labor (item "I", "a"), by disciplining that labor is not a commodity. The Universal Declaration of Human Rights (1948) advocates the right of all to have decent working conditions and employment opportunities (art. XXIII), in line with the also provisions of Art. XIV of the American Declaration of The Rights and Duties of Man (1948). Adopting a similar starting point, the Pact of Economic, Social and Cultural Rights protects freely chosen or accepted work, as well as encourages full productive employment (art. 6). The Protocol of San Salvador

(Art. 6) and the Mercosur Socio-Labor Declaration (art. 14) ratify the provision for fair work mechanisms and promotion of employment.

Furthermore, the expansion of the effective guarantee of decent work is one of the goals of the SUSTAINABLE DEVELOPMENT Goals of the UN 2030 Agenda. In the same vein, see the Declaration on Fundamental Principles and Rights at Work (1998), which enshrines eight fundamental themes with a view to the consecration of decent work. This is the choice of priority issues that have led to the recognition <sup>1</sup>of *core obligations*, i.e. Conventions of mandatory observance for ILO members, even if they have not ratified the respective instruments. The ILO Centennial Declaration for the Future of Work (2019) reinforces the need to urgently combat child labor, neo-slavery, guarantee trade union freedom, collective bargaining, and ban any form of discrimination aimed at employment or occupation, as ways to promote the existence of decent and decent work.

In the meantime, the prediction of the right to decent work and economic growth as the eighth objective of the Sustainable Development Goals represented a significant advance for the recognition of the normativity of social rights, as it represented the perception that decent work is an essential factor for the construction of sustainable development.

Targets for achieving decent work have been recognized, in the context of this objective, which reflect the concerns of the International Labour Organization with the preponderant challenges that permeate labour rights. Targets related to the improvement of environmental working conditions, eradication of forced labor, exploitation of child labor were expected. At this moment, due to its close relationship with the scope of this research, it is worth noting the importance of goals 8.5 and 8.8<sup>2</sup>, which reveal special care for women's rights, as historically marginalized workers and subjected to undignified working conditions. The understanding that it is necessary to guarantee a minimum civilizing level, according to Maurício Godinho Delgado (2016, p. 1465-1467), with a view to safeguarding a decent work, according to Gabriela Neves Delgado (2006, p. 55), and decent, permeates the effectiveness of labor human rights in all stages of professional hiring, maintenance and ascension.

### **3 ARTIFICIAL INTELLIGENCE AND DISCRIMINATION**

#### **3.1 MACHINE LEARNING AND ALGORITHMS**

With regard to artificial intelligence mechanisms, Resolution No. 332 of August 21, 2020, of the National Council of Justice conceptualizes algorithm as "Art. 3º (...) finite sequence of instructions executed by a computer program, with the aim of processing information for a specific purpose;" (NATIONAL

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<sup>1</sup> For more information on the eight conventions considered fundamental by the ILO, see alvarenga, Rúbia Zanotelli from. *The declaration of fundamental principles and rights at work in 1998 and the ILO fundamental conventions commented on*. Healthy Paulo: Ltr, 2018.

<sup>2</sup> See content of such goals on the website: <https://brasil.un.org/pt-br/sdgs/8>, namely: "8.5 By 2030, achieve full and productive employment and decent work for all women and men, including young people and people with disabilities, and equal pay for work of equal value" and "8.8 Protect labor rights and promote safe and protected working environments for all workers, including migrant workers, in particular migrant women, and people in precarious jobs."

COUNCIL OF JUSTICE, 2020). The algorithm can refer to any statement, such as computer code, that performs a set of commands. This statement is essential to how computers process data. They would thus be coded procedures to transform the data entry into the desired output, based on specific calculations. (ARTICLE 19, 2018, p. 8, English free translation)

These are mathematical formulas designed and elaborated by programmers, engineers, technicians, with scientific knowledge predominantly in the area of exact, without responsibility for ethical, moral or socio-legal barriers that impose guidelines for non-discriminatory conduct (FRAZÃO, 2021b, p. 2)

In the epicenters of technological communities, the absences of ethnic plurality, inclusion of vulnerable groups and diversity of views are revealed not only in the low hiring of technicians from such marginalized groups (VINUESA *et al*, p. 3, 2020, free translation of English); but, above all, in the poor representation of historically excluded groups that integrate decision-making centers in the preparation of *machine learning*, as referenced by research by Joy Buolamwini, computer scientist and researcher at MIT (*Massachusetts Institute of Technology*) *Media Lab* in the documentary *Coded Bias* (NETFLIX, 2020).

Machine learning often uses algorithms trained with a vastness of data to improve system performance on a task over time. Tasks tend to involve decision-making or pattern recognition, with many output possibilities and a variety of domains and forms. (ARTICLE 19, 2018, p. 9, English). In this context, in addition to the algorithmic evives being able to emanate from the values and priorities of those who train and project them, it is possible that algorithmic discrimination snares from non-representative training data, *when the dataset*, or the database, for algorithmic formulas, is insufficient. (KERTYSOVA, 2019, p.5, Free English translation)

The investigation on the reasonableness of implementing artificial intelligence mechanisms in admission stages, as well as in the course of the employment relationship, has in its bulge the understanding of how to deal with algorithmic opacity, especially in view of the complexity of neural networks stalked in automated decisions. (KERTYSOVA, 2019, p.5, English translation) In parallel, in the wake of maja brkan's (2019, p.71), it is essential to recognize that any technology is in itself neutral, and that democracy and other public values are affected by the human use of this technology and its purpose, as determined by humans.

### 3.2 ALGORITHMIC DISCRIMINATION

The concept of discrimination in its sense of illegitimate inequality presupposes the occurrence of arbitrary, unacceptable, unjustifiable, intolerable distinctions (MALLET, 2010), given the circumstances and standards then in force. It substantiates, therefore, the externalization of prejudice, through the use of discrimen factors, of unjustly disqualifying criteria (DELGADO, 2010, 108), in direct offense to the principle of neutrality (art. 5, *caput*, CFRB).

Discrimination can occur directly when there is a violation of the principle of equal treatment, arbitrarily and unmotivatedly. Furthermore, it can occur indirectly, when there is no apparent intention to

discriminate, but apparently neutral provisions, criteria, or practices put certain people or groups at a disadvantage when compared to the others (CARLOS, 2019, p. 87)

The concept of indirect discrimination (JAKUTIS, 2006, p. 59) is thus associated with the theory of disproportionate impact or adverse impact (as precedent of U.S. law *Griggs v. Duke Power*), and indirect illegitimate discrimination is sealed by ILO Conventions 100 and 111, which *represent cores*, according to the ILO Declaration of Principles 1998. Where such provision, criterion or practice may be objectively justified in attention to a reasonable purpose, indirect discrimination is not configured.

Artificial intelligence mechanisms have an increasing influence on labor relations, given the technological developments in the realm of the Cyber Revolution, Industry 4.0, or the Fourth Industrial Revolution in *the gig economy* (KALIL, 2019, p. 99). As brought by Katarina Kertysova (2019, p.2), despite its numerous benefits, AI-driven systems generate a number of ethical issues and pose new risks to human rights and democratic policies. Concerns raised by the community of experts include the lack of algorithmic justice (leading to discriminatory practices such as racial and gender bias), content personalization resulting in partial information blindness ("filter bubble"), violation of user privacy, potential user manipulation, or manipulation of video and audio without the consent of the individual.

Algorithmic discrimination occurs when there is *contamination of the input database* by certain vieses that produce distortions in *outputs*, revealing a result in non-conformity or with negative effects that exceed the programmer's goal. This practice is configured when certain content is negatively valued or excluded from the *output corresponding* to what the artifice understands as appropriate, with a fulcrum in criteria considered unjustly disqualifying. (MINISTÉRIO PÚBLICO DO TRABALHO, 2021, p. 21)

At first glance, the alternative of a "blind choice" of resumes only of technically more skilled workers proved to be a commendable solution. However, in practice, the formulas elaborated to make such previous selections were as or more prejudiced, racist (SWEENEY, 2013, p. 44, free translation of English) and sexist (LINDOSO, 2019, p. 116), than human interviewers themselves. In the wake of the explanation explained by Tania Sourdin (SOURDIN, 2018, p. 1129), some forms of Artificial Intelligence that are in use have already demonstrated that there may be significant risks in the use of these tools in terms of bias, as well as that programmers and other decision makers can replicate human prejudice even without intending to do so.

Regarding the repercussion of algorithms in labor relations, Cathy O'Neil (2016, p.17, English) describes a ranking situation of teachers in Washington according to arbitrary scores they received from data crossings performed by algorithms. The statistics and probabilities of a teacher being a bad hire, or an incompetent teacher, came from algorithmic results, which could not be explained even by the educational institutions that adopted them. In addition to being weakly offensive to the core of human rights, the results of the aforementioned research with teachers in Washington revealed disharmony between algorithmic scores and the opinions of students, principals, about the competence of negatively evaluated teachers. (O'NEIL, 2016, p.19, English translation)

### 3.3 CORRELATIONS BETWEEN ALGORITHMIC DISCRIMINATION, SDGs 5 (GENDER EQUALITY) AND SDGS 10 (REDUCTION OF INEQUALITIES)

Empirical research in foreign literature has demonstrated the presence of algorithms reflecting racist, sexist vieses (SILVA; KENNEY, 2019, p. 37, free translation of Human Decisions), resulting in the practice of algorithmic discrimination in labor relations (KLEINBERG; LUDWIG; MULLAINATHAN; SUNSTEIN, 2019, p. 164, English). The reproduction of structural racism in algorithmic formulas is reflected in advertisements directed according to criteria of race, color (SWEENEY, 2013, p. 44, free translation of English) and accentuates unfairly disqualifying criteria since the stages of hiring in industrial relations. (O'NEIL, 2016, p. 95, English translation)

In the United States, empirical research with pre-contractual algorithmic mechanisms has shown evidence of direct and indirect discrimination. As brought by Cathy O'Neil (O'NEIL, 2016, p. 95), data surveys conducted in 2002 by MIT researchers revealed the preference of curriculum selection systems for "typically white" names, compared to "typically black".

In addition to the lack of diversity in data sets, the affront to SDGs 10 for identified racist biases reflects the lack of gender, race, and ethnicity diversity in the AI workforce. Diversity is one of the main principles that support innovation and social resilience, which will become essential in a society exposed to changes associated with AI involvement. Social resilience is also promoted by decentralization, that is, by the implementation of AI technologies adapted to the cultural context and the particular needs of each different region. (VINUESA *et al*, p. 4, 2020, English free translation)

In addition to the refractive to social practices that reveal structural racism, the fight against algorithmic discrimination permeates the refractive of the sexual division of labor (ARAÚJO, 2019, p. 377), through the safeguarding of women's rights, victims of sexist, patriarchal, oppressive conduct, which segregate them from fair conditions in the labor market. (TEODORO, 2020, p. 105)

With regard specifically to discrimination against women and minorities, Ricardo Vinuesa *et al* (2020, p. 3) points out that there is another important gap in AI in the context of the Sustainable Development Goal of n. 5 on gender equality: there is not enough research to assess the potential impact of technologies such as intelligent algorithms, recognition, or enhanced learning, of discrimination against women and minorities. Examples, machine learning algorithms trained uncritically, without monitoring regular news articles, inadvertently learned and reproduced social prejudices against women and girls, which are incorporated into current languages (VINUESA *et al*, 2020, p. 3, English free translation)

Moreover, also by way of example, Cássio Casagrande (2020, p. 147) cites a situation that occurred in the company Amazon, in which the use of algorithms to control employee productivity demonstrated results in which the workers more "slow" in the performance of their tasks, according to *the software*, would be pregnant women. The average fulfillment of tasks was obtained from the calculation of the time spent on *personal scanners* that employees use to ship the products from their shelves and mats. Pregnant workers, who spent time on breaks to go to the bathroom, due to the peculiar condition of pregnancy, had

their physiological demands misinterpreted by the algorithms, which classified them as employees who, because they were unproductive, should be dispensed with.

The above examples corroborate the thesis of the great generic risk of AI systems, represented by the production of a result that reveals problems marked by opacity, arbitrariness of criteria and conclusions, correlate to discretion, discrepancy with fundamental rights and other legal principles, linking the system to deepening inequality and unpredictability of the impact of its application of automated correlations and inferences. (PEIXOTO, 2020a, p. 55). The use of algorithmic mechanisms in affront to fundamental rights infringes the premise of transparency (KROST, GOLDSCHMIDT, 2021, p. 68), data surveillance and accountability of artificial intelligence tools and, therefore, should be restrain.

### 3.4 CONFORMATION OF VIESES AND COMPENSATORY ACTIONS

Empirically proven the possible ills of using intelligence tools to artificial, selena Silva and Martin Kenney (2019, p. 39) scored that the bias of the algorithms themselves can be solved. As these authors assert, digital processes create a record that can be examined and analyzed with *software tools*. In the analogue world, ethnic or other discrimination was difficult and costly to study and identify. From another band, in the digital context, the captured data is often permanent and can help identify and monitor progress in addressing ethnic prejudice, among other types of discrimination.

The use of beneficial algorithms has also been suggested, in the logic of positive discrimination, compensatory actions and reparatory proposals. Depending on Cass Sunstein (2018, p.1), well-designed algorithms should be able to avoid cognitive biases of various kinds. Furthermore, it is possible that algorithms are engendered in such a way as to avoid taking into account race (or other factors) when used illegally, as well as being designed in such a way as to produce any type of racial, sexual, desired balance and thus reveal compensation summations between various social values. In this second perspective, the skewed formulation of algorithms would be intended to balance competing social values, achieving a new transparency on some difficult tradeoffs.

In the same sense, favorable to the potentially beneficial use of algorithms, say Jon Kleinberg, Jens Ludwig, Sendhil Mullainathan, Cass R Sunstein (2019, p. 114, English free translation) that, when algorithms are involved, proving discrimination will be easier, should be or can be done to be. The law prohibits algorithm discrimination, and this prohibition can be implemented by regulating the process by which algorithms are designed. This implementation can codify the most common approach to building machine learning classification algorithms in practice and adding detailed record keeping requirements.

Still in the wake of Jon Kleinberg, Jens Ludwig, Sendhil Mullainathan, Cass R Sunstein (2019, p. 114), such an approach would provide valuable transparency about the decisions and choices made in the construction of algorithms, as well as about trade-offs between relevant values. The key challenges to the realization of this mister refer, in a sense, to the fact that, in a crucial sense, algorithms are not decipherable: it is not possible to determine what an algorithm will do by reading the underlying code. Such unviability



is more than a cognitive limitation; it's a mathematical impossibility. To know what an algorithm will do, one must perform the task at hand, collecting an observed gap, such as differences in hiring rates by gender, to decide whether the difference should be attributed to discrimination as defined by law. Such assignments do not require a read of the code. Instead, there may be an examination of the data provided to the algorithm, as well as polling its outputs, which is eminently feasible. The opacity of the algorithm does not prevent scholars from scrutinizing its construction or experimenting with its behavior, two activities that are impossible with humans.

Among the possible benefits of an isonomic use of artificial intelligence tools, it is possible to mention the saving of time, the reduction of discretion in relation to the making of choices, the construction of intelligent statistics, as well as the rationalization of the decision-making process. (GOMES; NUNES; ROCHA; PEIXOTO, p. 6, 2021) This is a premise widely applicable to the use of algorithms in industrial relations.

On this path, Cinzia Arruzza, Tithi Bhattacharya and Nancy Fraser (2019, p. 12), assert that the feminism that must be in mind recognizes that it needs to respond to a crisis of great proportions. There are living standards in the fall, ecological disasters imminent; violent wars, intensified expropriation; mass migrations found barbed wire; racism and xenophobia were encouraged; and there was the reversal of rights earned to harsh penalties, both social and political. In this scenario, the equitable access of workers to the labor market represents a primacy not only of the principle of neutrality (art. 5, *caput*, CRFB), but of the consecration of the very matrix principle of the dignity of the human person (art. 1º, III, CFRB).

Transparency and controls of algorithmic tools should be understood as *essential forms of accountability*, accuracy, of the system, with the use of algorithms the advantage of not being obscured by the ambiguity of human decision-making. (KLEINBERG; LUDWIG; MULLAINATHAN; SUNSTEIN, 2019, p. 116, English). In this perspective, the conformation of algorithmic vieses in industrial relations would embodyan effective achievement of the Sustainable Development Goals, especially the goals contained in objectives 5, 8 and 10 of the UN 2030 Agenda.

#### **4 FINAL CONSIDERATIONS**

In the present research, there was an analysis ofthe Sustainable Development Goals that are correlated with algorithmic discrimination, with a view to analyzing the fight against inequalities , including gender, as well as safeguarding decent work. Considerationshave been made about the Sustainable Development Goals in the context of the UN 2030 Agenda, as well as the sustainable development goal.

The right to decent and decent work was analyzed not only under the spectrum of SDGs8 goals, but as a primary foundation for tackling racism, sexism and social disparities, so that closely related to SDGs 5 and 10. The right to work is a fundamental human right that is closely linked to the realization of

sustainable development, since it enables the individual to receive a compensation that helps him in subsistence and fills him/her as a social being in construction.

The algorithmic discriminatory practices, in the bulge of Industry 4.0, were analyzed based on their impacts on labor relations, in contractual phases, of professional maintenance and rise. It was empirically found in foreign literature that algorithmic biases are responsible for perpetuation of exclusions from historically marginalized groups, such as women and black people, in the labor area. These are, therefore, practices that substantially address the goals contained in the Sustainable Development Goals 5, 8 and 10 of the UN 2030 Agenda.

Algorithmic discrimination has different reasons. On the one hand, they may result from previous prejudiced configurations elaborated by programmers according to the orders emanating from decision-making centers of technology and *software companies*. On the other hand, it is also possible that *they come from datasets and databases* that do not represent the ethnic, racial, gender plurality that permeate society.

It is essential to ratify that the algorithms themselves are free of values, but they can emanate the arbitrariness, discretion, of the technicians who conduct machine learning. Algorithmic justice, therefore, is fully feasible, in a context of data control, system accuracy, frequent and permanent *dataset audits*, which enable the use of algorithmic instruments in a democratic, transparent, intelligible and even compensatory and counter-majority manner. To achieve algorithmic justice thus means promoting sustainable development in a material and substantial way, as it represents the effective protection of human rights and social fundamentals.

## REFERENCES

ARAÚJO, Adriane Reis de. EQUIDADE DE GÊNERO NO TRABALHO E O

PATRIARCADO: O IMPACTO DA VIOLÊNCIA CONTRA A MULHER NA DESIGUALDADE SALARIAL. In: ARAÚJO, Adriane Reis de; LOPES, Andrea Lino; GUGEL, Maria Aparecida; COELHO, Renata. (Org.) *Direitos Humanos no Trabalho pela Perspectiva da Mulher*. Belo Horizonte: RTM - MARIO GOMES DA SILVA – ME, 2019. p. 375-391.

ARTICLE 19, April 2018. *Privacy and Freedom of Expression In the Age of Artificial Intelligence*. [s.l.] [s.n.]

ASSOCIAÇÃO BRASILEIRA DE NORMAS TÉCNICAS. NBR 6023 – nov. 2018. Informação e documentação – Referências - Elaboração. Rio de Janeiro: ABNT, 2018, 74p.

\_\_\_\_\_. NBR 6027: informação e documentação: sumário: elaboração. Rio de Janeiro, 2003.

\_\_\_\_\_. NBR 6028: informação e documentação: resumo: elaboração. Rio de Janeiro, 2003.

\_\_\_\_\_. NBR 10520: informação e documentação: citação: elaboração. Rio de Janeiro, 2002.

\_\_\_\_\_. NBR 14724: informação e documentação: elementos textuais: elaboração. Rio de Janeiro, 2011.

BRASIL. Constituição da República Federativa do Brasil de 1988. Diário Oficial da União. Disponível em [http://www.planalto.gov.br/ccivil\\_03/Constituicao/ConstituicaoCompilado.htm](http://www.planalto.gov.br/ccivil_03/Constituicao/ConstituicaoCompilado.htm) Acesso em 01 ago. 2021.

\_\_\_\_\_. Decreto-Lei n. 5452 de 1º de maio de 1943. Consolidação das Leis do Trabalho. Diário Oficial da União. Disponível em [http://www.planalto.gov.br/ccivil\\_03/decreto-lei/Del5452compilado.htm](http://www.planalto.gov.br/ccivil_03/decreto-lei/Del5452compilado.htm) Acesso em 01 ago. 2021.

\_\_\_\_\_. Lei n. 7347 de 24 de julho de 1985. Disciplina a ação civil pública de responsabilidade por danos causados ao meio-ambiente, ao consumidor, a bens e direitos de valor artístico, estético, histórico, turístico e paisagístico (VETADO) e dá outras providências. Diário Oficial da União. Disponível em [http://www.planalto.gov.br/ccivil\\_03/leis/l7347orig.htm](http://www.planalto.gov.br/ccivil_03/leis/l7347orig.htm) Acesso em 01 ago. 2021.

\_\_\_\_\_. Lei Complementar n. 75 de 20 de maio de 1993. Dispõe sobre a organização, as atribuições e o estatuto do Ministério Público da União. Diário Oficial da União. Disponível em [http://www.planalto.gov.br/ccivil\\_03/leis/lcp/Lcp75.htm](http://www.planalto.gov.br/ccivil_03/leis/lcp/Lcp75.htm) Acesso em 03 ago. 2021.

BRKAN, Maja. Artificial Intelligence and Democracy: The Impact of Disinformation, Social Bots and Political Targeting. *Interdisciplinary Review of Emerging Technologies*, Delphi, v. 2(2), p. 66–71, 2019. <https://doi.org/10.21552/delphi/2019/2/4>

BROUSSARD, Meredith. *Artificial Unintelligence: How Computers Misunderstand the World*. Cambridge: MIT Press, 2019.

CARLOS, Vera Lúcia. O PRINCÍPIO DA IGUALDADE E NÃO DISCRIMINAÇÃO E A PROTEÇÃO DA MULHER NO MERCADO DE TRABALHO. In: ARAÚJO, Adriane Reis de; LOPES, Andrea Lino; GUGEL, Maria Aparecida; COELHO, Renata. (Org.) *Direitos Humanos no Trabalho pela Perspectiva da Mulher*. Belo Horizonte: RTM - MARIO GOMES DA SILVA – ME, 2019. p. 76-93.

CARRERA, Fernanda. A raça e o gênero da estética e dos afetos: algoritmização do racismo e do sexismo em bancos contemporâneos de imagens digitais. *Matrizes*. São Paulo, v.14, n. 2, p. 217-240, maio/ago. 2020.

CASAGRANDE, Cássio. O DIREITO DO TRABALHO DOS FLINTSTONES AOS JETSONS E O CASO “AMAZON. In: *Revista do Tribunal Superior do Trabalho*, Brasília, a. IX, n. 86, 4ª Revolução Industrial, p. 143/151, Março/20. Disponível em:

[https://juslaboris.tst.jus.br/bitstream/handle/20.500.12178/170737/2020\\_casagrande\\_cassio\\_direito\\_trabalho.pdf?sequence=1](https://juslaboris.tst.jus.br/bitstream/handle/20.500.12178/170737/2020_casagrande_cassio_direito_trabalho.pdf?sequence=1) . Acesso em set. 2021.

CONSELHO NACIONAL DE JUSTIÇA, Resolução n. 332 de 21 de agosto de 2020. Poder Judiciário. Brasília. Disponível em <https://atos.cnj.jus.br/files/original191707202008255f4563b35f8e8.pdf> Acesso em ago. 2021.

DELGADO, Gabriela Neves. *Direito Fundamental ao Trabalho Digno*. Salvador: LTr, 2006.

\_\_\_\_\_. O TRABALHO ENQUANTO SUPORTE DE VALOR. *Revista da Faculdade de Direito da UFMG*. Belo Horizonte, n. 49, jul./dez., 2006.

DELGADO, Maurício Godinho. *Curso de Direito do Trabalho*. 15 ed. São Paulo: LTr, 2016.

\_\_\_\_\_. Proteções contra discriminação na relação de emprego. In: RENAULT, Luiz Otávio Linhares; VIANA, Márcio Túlio; CANTELLI, Paula Oliveira (Coord.). *Discriminação*. 2. ed. São Paulo: LTr, 2010.

DIZ, Jamile Bergamaschine Mata. OS OBJETIVOS DO DESENVOLVIMENTO SUSTENTÁVEL E SUA INCORPORAÇÃO PELA UNIÃO EUROPEIA E PELO BRASIL. P. 84-13. in: *Desenvolvimento sustentável na contemporaneidade*. Organizado por Jamile Bergamaschine Mata Diz e Daniel Gaio. Belo Horizonte: Arraes Editores, 2019. 178 p.

\_\_\_\_\_.; GOULART, Rayelle Campos Caldas. A APLICAÇÃO DO PRINCÍPIO DA INTEGRAÇÃO AMBIENTAL NAS POLÍTICAS SETORIAIS. 2013.

FELIU, José María Gimeno. *Los objetivos de sostenibilidad e inclusividad de la Agenda de Naciones Unidas y su incidência en la contratación pública. De las ideas a la acción*. Claves 32. La Agenda 2030. Implicaciones y retos para las administraciones locales. Fundación Democracia y Gobierno Local. 2021, Madrid.

FRAZÃO, Ana. Discriminação algorítmica: Compreendendo o que são os julgamentos

algorítmicos e o seu alcance na atualidade. Parte I. Net. Disponível em:

<https://www.jota.info/opiniao-e-analise/colunas/constituicao-empresa-e-mercado/discriminacao-algoritmica-16062021> 2021a. Acesso em: 1 ago. 2021.

FRAZÃO, Ana. Discriminação algorítmica: o papel e a responsabilidade dos programadores e das empresas de tecnologia. Net. Disponível em: <https://www.jota.info/opiniao-e-analise/colunas/constituicao-empresa-e-mercado/discriminacao-algoritmica-a-responsabilidade-dos-programadores-e-das-empresas-14072021> 2021b. Acesso em: 1 ago. 2021.

GOMES, Luisa Caroline; NUNES, Thâmylla da Cruz; ROCHA, Quithéria Maria de Souza; PEIXOTO, Fabiano Hartmann. RELATÓRIO TÉCNICO CONCLUSIVO. SEMINÁRIO: PROCESSO E INTELIGÊNCIA ARTIFICIAL. DR.IA. BRASÍLIA, 2021. HTTPS. Disponível em: [WWW.DRIA.UNB.BR](http://WWW.DRIA.UNB.BR) DOI: 10.29327/542942

GUSTIN, Miracy Barbosa de Sousa; DIAS, Maria Tereza Fonseca; NICÁCIO, Camila Silva.

*(Re)Pesando a pesquisa jurídica: teoria e prática*. 5 ed. São Paulo: Almedina, 2020.

JAKUTIS, Paulo. *Manual De Estudo Da Discriminação No Trabalho*. São Paulo: LTr. 2006.

KALIL, Renan Bernardi. *Capitalismo de plataforma e Direito do Trabalho: crowdwork e trabalho sob demanda por meio de aplicativos*. 2019. Tese (Doutorado em Direito do Trabalho) - Faculdade de Direito, Universidade de São Paulo, São Paulo, 2019. Disponível em: [https://www.teses.usp.br/teses/disponiveis/2/2138/tde-07082020-133545/publico/5183780\\_Tese\\_Parcial.pdf](https://www.teses.usp.br/teses/disponiveis/2/2138/tde-07082020-133545/publico/5183780_Tese_Parcial.pdf). Acesso em: 5 ago. 2021. Doi:10.11606/T.2.2019.tde-07082020-133545

- KERTYSOVA, Katarina. Artificial Intelligence and Disinformation. *In: Security and Human Rights*. [s.n.], v. 29, ed. 1-4, p. 1-29, 2019.
- KIRK, Mary. *Gender and information technology : moving beyond access to co-create global partnership*. Hershey/Nova York: Information Science Reference, 2009.
- KLEINBERG, Jon; LUDWIG, Jens; MULLAINATHAN, Sendhil; SUNSTEIN, Cass R. Discrimination in the Age of Algorithms, *Journal of Legal Analysis*, Oxford, v. 10, p. 113-174, 2019. <https://doi.org/10.1093/jla/laz001>
- KROST, Oscar. GOLDSCHMIDT, Rodrigo. INTELIGÊNCIA ARTIFICIAL (I.A.) E O DIREITO DO TRABALHO: POSSIBILIDADES PARA UM MANEJO ÉTICO E SOCIALMENTE RESPONSÁVEL. *In: Revista do Tribunal Superior do Trabalho*, São Paulo, v. 87, n. 2, p. 55-71, abr./jun. 2021. Disponível em <https://juslaboris.tst.jus.br/handle/20.500.12178/189451> Acesso em 31 jul. 2021.
- LINDOSO, Maria Cristine Branco. *DISCRIMINAÇÃO DE GÊNERO EM PROCESSOS DECISÓRIOS AUTOMATIZADOS*. 2019. Dissertação (Mestrado em Direito) – Faculdade de Direito, Universidade de Brasília, Brasília, 2019. Disponível em [https://repositorio.unb.br/bitstream/10482/38524/1/2019\\_MariaCristineBrancoLindoso.pdf](https://repositorio.unb.br/bitstream/10482/38524/1/2019_MariaCristineBrancoLindoso.pdf). Acesso em: ago. 2021.
- MALLET, Estêvão. IGUALDADE, DISCRIMINAÇÃO E DIREITO DO TRABALHO. *Revista do Tribunal Superior do Trabalho*, Brasília, vol. 76, n. 3, p. 17-51.
- MARONA, Marjorie. *Acesso à qual justiça? A construção da cidadania brasileira para além da concepção liberal*. 2013. Tese (Doutorado) - Faculdade de Filosofia e Ciências Humanas, Universidade Federal de Minas Gerais, Belo Horizonte, 2013. Disponível em: <https://repositorio.ufmg.br/handle/1843/BUOS-9M4L5G>. Acesso em ago. 2021.
- MINISTÉRIO PÚBLICO DO TRABALHO. Cartilha Digital INTELIGÊNCIA ARTIFICIAL, TECNOLOGIA DIGITAL E DISCRIMINAÇÃO NO TRABALHO DIREITOS E CONCEITOS BÁSICOS. Uma cartilha elaborada pelo Grupo de Estudos Diversidade e Tecnologia, 2021. Disponível em [https://mpt.mp.br/pgt/publicacoes/cartilhas/inteligencia-artificial-tecnologia-digital-e-discriminacao-no-trabalho/@@display=file/arquivo\\_pdf](https://mpt.mp.br/pgt/publicacoes/cartilhas/inteligencia-artificial-tecnologia-digital-e-discriminacao-no-trabalho/@@display=file/arquivo_pdf) Acesso em ago. 2021.
- NETFLIX. *CODED BIAS*. China; Estados Unidos da América; Reino Unido da Grã-Bretanha e Irlanda do Norte Documentário, 2020. Disponível em: <https://www.netflix.com/br/title/81328723> Acesso em ago. 2021.
- NOBLE, Safiya Umoja. *Algorithms of Oppression: How Search Engines Reinforce Racism*. Nova York: New York University Press, 2018.
- O'NEIL, Cathy. *Weapons of math destruction: how big data increases inequality and threatens democracy*. 1. Ed. New York: Crown Publishers, 2016.
- ORGANIZAÇÃO INTERNACIONAL DO TRABALHO, *Trabalho decente*. Brasília. [s.d.],
- ORSINI, Adriana Goulart de Sena. Acesso à Justiça pela Via dos Direitos Trabalhistas. Net. Disponível em: [https://www.academia.edu/49266501/ACESSO\\_%C3%80\\_JUSTI%C3%87A\\_PELA\\_VIA\\_DOS\\_DIREITOS\\_TRABALHISTAS](https://www.academia.edu/49266501/ACESSO_%C3%80_JUSTI%C3%87A_PELA_VIA_DOS_DIREITOS_TRABALHISTAS), 2018. Acesso em ago. 2021.

PEIXOTO, Fabiano Hartmann. *Direito e inteligência artificial: referenciais básicos: com comentários à resolução CNJ 332/2020*. Brasília, DR.IA, 2020a. Coleção inteligência artificial e jurisdição, v. 2, PDF. ISBN nº 978-65-00-08585-3

\_\_\_\_\_. DIREITO E INTELIGÊNCIA ARTIFICIAL NA (NÃO) REDUÇÃO DE DESIGUALDADES GLOBAIS: DECISÕES AUTOMATIZADAS NA IMIGRAÇÃO E SISTEMAS DE REFUGIADOS. *Revista Direitos Culturais*, Santo Ângelo, v. 15, n. 37, p. 305-320, set./dez. 2020b. DOI: <http://dx.doi.org/10.20912/rdc.v15i37.222>

SARLET, Ingo Wolfgang. *Dignidade da Pessoa Humana e Direitos Fundamentais na Constituição Federal de 1988*. 10. ed., rev., atual e ampl. Porto Alegre: Livraria do Advogado, 2001.

\_\_\_\_\_. Os Direitos dos Trabalhadores como Direitos Fundamentais na Constituição Federal Brasileira de 1988. In: SARLET, Ingo Wolfgang et al. *Diálogos entre o Direito do Trabalho e o Direito Constitucional: estudos em homenagem a Rosa Maria Weber*. São Paulo: Saraiva, 2014.

SARMENTO, Daniel. *Direitos Fundamentais e Relações Privadas*. 2. ed. Rio de Janeiro: Lumens Juris, 2006

SILVA, Selena; KENNEY, Martin; Algorithms, platforms, and ethnic bias. *Communications of the ACM*. Nova York, v. 62, n.11, p. 37-39, Nov. 2019. DO: 10.1145/3318157.

SOURDIN, Tania. JUDGE V ROBOT? ARTIFICIAL INTELLIGENCE AND JUDICIAL DECISION-MAKING. *UNSW Law Journal*, Nova Gales do Sul (Austrália), v. 41 (4), p. 1114-1133, 2018.

SUNSTEIN, Cass R. *Algorithms, Correcting Biases*. Preliminary draft 12/12/18. For Social Research. [s.n.t]

SWEENEY, Latanya. Discrimination in online ad Delivery. *Communications of the ACM*. Nova York, v. 56, n. 5, p. 44-54, Mai. 2013. DO: 10.1145/2447976.2447990.

TEODORO, Maria Cecília Máximo. A distopia da proteção do mercado de trabalho da mulher e a reprodução do desequilíbrio dos gêneros. In: MIRAGLIA, Livia Mendes Moreira; TEODORO, Maria Cecília Máximo; SOARES, Maria Clara Persilva. *Feminismo, trabalho e literatura: reflexões sobre o papel da mulher na sociedade contemporânea*. Belo Horizonte: Editora Fi, 2020, p. 103/143.

VINUESA, Ricardo *et al.* The role of artificial intelligence in achieving the Sustainable Development Goals. *NATURE COMMUNICATIONS. Perspective*. [s.l.] v.11, p. 1-10, 2020. <https://doi.org/10.1038/s41467-019-14108->

ZEIDE, Elana. *Artificial Intelligence in Higher Education: Applications, Promise and Perils, and Ethical Questions*. [s.l.] EDUCAUSEREVIEW, Summer 2019.