Is that a fully automated decision? Comparing ADM regulation under EU and Brazil's data protection law

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Key points:

- The paper provides a comprehensive comparative analysis of ADM systems' regulation in Brazil and the European Union. It examines the legal frameworks governing ADM under the Brazilian General Data Protection Law (LGPD) and the EU General Data Protection Regulation (GDPR), highlighting similarities and differences.
- The article identifies significant interpretative challenges in defining "decisions solely based on automated processing" within both data protection frameworks. The lack of consensus among scholars underscores the complexity of determining what constitutes a decision in ADM systems, including semi-automated systems.
- A comparative analysis reveals that while the GDPR explicitly prohibits automated decisions that produce legal or significant effects without appropriate safeguards (e.g., human intervention, the right to explanation), the LGPD offers a right to review automated decisions but lacks clarity on mandatory human intervention. The majority of Brazilian scholars view this data subject's right as a human out of the loop mechanism.

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- The EU benefits from an evolving body of judicial precedents and detailed guidance from data protection authorities, such as the EDPB, which have established robust interpretations of ADM-related provisions. In contrast, Brazil's judiciary and regulatory authority are still developing their approach, with limited jurisprudential or regulatory clarity on Art. 20 LGPD.
- By examining court rulings and decisions by data protection authorities, the paper provides insights into how legal and regulatory frameworks are evolving to address ADM systems, calling for a nuanced understanding of ADM's sociotechnical nature and the interplay between technological advancements and legal norms for future regulatory measures.

Keyworks:

Automated decision-making (ADM); Comparative law; EU and Brazilian law; Human intervention; Semi-automated systems.

1. Introduction

In the developing field of technological innovations, Automated Decision-Making (ADM) systems are increasingly becoming an integral part of our lives. These systems, which operate by processing data to make decisions without human intervention, are gaining prominence in various sectors including finance, healthcare, welfare services and social media. The pervasive nature of ADM systems has prompted a global movement towards establishing regulatory frameworks to govern their use and implications. Regulatory initiatives are underway in various jurisdictions to address the complexities posed by ADM systems. The European Union (EU) has

taken significant steps with the introduction of the Artificial Intelligence Act (hereinafter, AI Act)[3], which aims to regulate artificial intelligence (AI), including AI-based ADM systems. Meanwhile, in Brazil, legislative initiatives are emerging with bills introduced in Congress[4] and with the Brazilian Data Protection Authority's (ANPD) regulatory agenda actively addressing ADM issues.[5]

This paper presents a comparative analysis of data protection regulations for ADM in the European Union (EU) and Brazil, focusing on how these regulations are applied in practice. To clarify its scope, while we discuss the regulation of ADM systems within the framework of data protection laws, such as Brazil's General Data Protection Law (hereafter, LGPD)[6] and the EU General Data Protection Regulation (hereafter, GDPR)[7], this study is distinct and separate from the broader regulatory issues addressed by the EU's AI Act and possible Bills that tackle the same issue in Brazil. The AI Act encompasses a wider range of AI systems and is designed to manage the risks associated with various forms of AI, beyond the specific context of ADM systems that process personal data. Consequently, this paper focuses exclusively on ADM as it pertains to data protection laws and does not cover the broader AI system regulations proposed by the AI Act.

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[3] Regulation (EU) 2024/1689 of the European Parliament and of the Council of 13 June 2024 laying down harmonised rules on artificial intelligence and amending Certain Union Legislative Acts (Artificial Intelligence Act). Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32024R1689&qid=1722855365150.

[4] Senado Federal, *Projeto de Lei nº 2.338/2023,* Dispõe sobre o desenvolvimento, fomento, uso ético e responsável da inteligência artificial com base na centralidade da pessoa humana <https://legis.senado.leg.br/sdleg-getter/documento/download/37c068d8-46d7-472e-99bf-c3cf7afea396> accessed 01 May 2024.

[5] *See* Brazilian Data Protection Authority's regulatory agenda for the years 2023-2024. Available at: https://www.in.gov.br/en/web/dou/-/resolucao-cd/anpd-n-11-de-27-de-dezembro-de-2023-534947737.

[6] *Lei nº 13.709 de 14 de agosto de 2018* Lei Geral de Proteção de Dados Pessoais (LGPD). <https://www.planalto.gov.br/ccivil_03/_ato2015-2018/2018/lei/l13709.htm> accessed 01 March 2024.

[7] 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 2016 L 119/1.

To illustrate how both jurisdictions apply data protection law to ADM systems in practice, the paper draws on a qualitative assessment of recent DPA and court decisions, as discussed in secondary sources, including scholarly articles and doctrinal commentaries on Art. 22 GDPR. The selection of EU decisions was based on cases that showcase a variety of GDPR interpretations and applications. Notably, the SCHUFA decision by the Court of Justice of the European Union (hereafter, CJEU) offers for the first time a significant interpretation of Art. 22 GDPR, setting a binding judicial precedent across the EU regarding ADM.[8] Furthermore, the recent *Dun & Bradstreet Austria* ruling has added an important layer to EU jurisprudence, by addressing profiling practices and some parameters under which automated decisions may be explainable under the GDPR.[9] In Brazil, where there is still scarce substantive administrative activity on ADM (i.e., regulatory guidance and enforcement), the analysis emphasizes court rulings to provide insights into the current understanding and application of Art. 20 LGPD, as examined in doctrinal sources.

Historically, since the 1970s, data protection law has laid down legal provisions for the automated processing of personal data.[10] These provisions form the cornerstone of regulating ADM systems. However, interpreting and applying these legal provisions, such as Art. 20 of the LGPD, and Art. 22 of the GDPR, presents significant challenges. In various real-world scenarios,

[8] Case C–642/21 *Land Hessen v SCHUFA Holding AG* [2023] ECLI:EU:C:2023:957.

[9] Case C–203/22 *CK v Dun & Bradstreet* [2025] ECLI:EU:C:2024:745.

[10] Lee A. Bygrave, 'Article 22 [Automated individual decision-making, including profiling]' in Christopher Kuner, Lee A. Bygrave and Christopher Docksey (eds.) *The EU General Data Protection Regulation (GDPR) – A Commentary* (Oxford University Press 2020) 529; Sebastião B Vale and Gabriela Zanfir-Fortuna , 'Automated Decision-Making Under the GDPR: Practical Cases from Courts and Data Protection Authorities' (Future of Privacy Forum 2022) 6.

the application of these provisions remains ambiguous. For instance, does the refusal of a bank loan based on an AI-generated credit score constitute a fully automated decision? Can the deplatforming of drivers in ride-hailing apps be considered solely based on automated processing? When a fully automated decision occurs, what rights are afforded to the data subject? Is there an *ex post* right to an explanation? Additionally, what mechanisms or safeguards can data subjects use to challenge these decisions?

Two of the critical issues requiring further analysis are (i) the conceptual vagueness surrounding the term "decision solely based on automated processing" and (ii) which data subject rights derive from ADM regulation in data protection law. The meaning of a concept or term is vague when no sharp boundary can be drawn separating its positive extension from its negative extension.[11] In other words, there is semantic vagueness "if and only if there is doubt as to its application to borderline cases."[12] With regard to ADM regulation, European and Brazilian data protection scholars have recently been questioning the scope of application of such rules and the legal definition of "decision solely based on automated processing"[13], given the diverse levels of

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[11] Dominic Hyde, *Vagueness, logic, and ontology* (Ashgate 2008) 2. As Hyde posits, "[t]he most common instances of vague predicates are those for which the applicability of the predicate just seems to fade off, as in the above examples, and it consequently appears that no sharp boundary could conceivably be drawn separating the predicate's positive extension from its negative extension.".

[12] Humberto Ávila, *Teoria da indeterminação no Direito: entre a indeterminação aparente e a determinação latente* (Malheiros-Juspodivm 2022) 38.

[13] Maja Brkan, 'AI-Supported Decision-Making under the General Data Protection Regulation' [2017] Proceedings of the 16th edition of the International Conference on Artificial Intelligence and Law - ICAIL '17 3 <http://dl.acm.org/citation.cfm?doid=3086512.3086513>; Reuben Binns and Michael Veale, 'Is That Your Final Decision? Multi-Stage Profiling, Selective Effects, and Article 22 of the GDPR' (2021) 11 International Data Privacy Law 319; Francesca Palmiotto, 'When Is a Decision Automated? A Taxonomy for a Fundamental Rights Analysis' (2024) 25 German Law Journal 210; Gianclaudio Malgieri, 'Automated Decision-Making and Data Protection in Europe', *Research Handbook on Privacy and Data Protection Law* (2022) 438-440; Peter AE Davis and Sebastian F Schwemer, 'Rethinking Decisions under Article 22 of the GDPR: Implications for Semi-Automated Legal Decision-Making' (2023) 3423 CEUR Workshop Proceedings 81; Caitlin Mulholland and Isabella Z. Frajhof, 'Inteligência artificial e Lei Geral de Proteção de Dados Pessoais: breves anotações sobre o direito à explicação perante a tomada

human involvement and the multiple stages at which automated processing comes into play in ADM systems. The uncertainties regarding which data subjects' rights are triggered by these systems also underscore the need for a detailed and comparative examination. The heated debate on both sides of the Atlantic over the existence of a right to explanation in the context of ADM is probably the most compelling manifestation of this state of affairs.[14]

To address these meaningful hermeneutic challenges, we ask two research questions: 1) What does a decision based solely on automated processing mean both in the EU law and Brazil's legal system? 2) What rights and legal protections does it entail for data subjects in these two jurisdictions? To answer these questions, we take a comparative law perspective using a

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de decisões por meio de machine learning' in FRAZÃO, Ana Frazão and Caitlin Mulholland (eds), *Inteligência artificial e Direito: ética, regulação e responsabilidade* (Revista dos Tribunais 2019) 265-292.; Miriam Wimmer and Danilo Doneda, '"Falhas de IA" e a Intervenção Humana em Decisões Automatizadas: Parâmetros para a Legitimação pela Humanização' (2021) 18 Revista Direito Público 374; MBB Fernandes and CHM Baptista de Oliveira, 'O Artigo 20 da LGPD e os desafios interpretativos ao direito à revisão das decisões dos agentes de tratamento pelos titulares de dados' (2020) 8 Revista de Direito e as Novas Tecnologias 1; MRR Korkmaz, *Decisões automatizadas: explicação, revisão e proteção na era da inteligência artificial* (Thomson Reuters Brasil 2023).

[14] There is a vast literature on this subject, both in the EU and in the Brazilian space. *See* Sandra Wachter, Brent Mittelstadt and Luciano Floridi, 'Why a Right to Explanation of Automated Decision-Making Does Not Exist in the General Data Protection Regulation' (2017) 7 International Data Privacy Law 76; Andrew Selbst and Julia Powles, 'Meaningful Information and the Right to Explanation' (2017) 7 International Data Privacy Law 233; Gianclaudio Malgieri and Giovanni Comandé, 'Why a Right to Legibility of Automated Decision-Making Exists in the General Data Protection Regulation' (2017) 7 International Data Privacy Law 243; Lilian Edwards and Michael Veale, 'Slave to the Algorithm? Why a "Right to an Explanation" Is Probably Not the Remedy You Are Looking For' (2017) 16 Duke Law & Technology Review 18; Renato L Monteiro, 'Existe Um Direito à Explicação Na Lei Geral de Proteção de Dados Do Brasil?', vol 39 (2018) <https://igarape.org.br/wp-content/uploads/2018/12/Existe-um-direito-a-explicacao-na-Lei-Geral-de-Protecao-de-Dados-no-Brasil.pdf> accessed 15 May 2024; Caitlin Mulholland and Isabella Z Frajhof, 'Inteligência artificial e Lei Geral de Proteção de Dados Pessoais: breves anotações sobre o direito à explicação perante a tomada de decisões por meio de *machine learning*' in Ana Frazão and Caitlin Mulholland (eds), *Inteligência artificial e Direito: ética, regulação e responsabilidade* (Revista dos Tribunais 2019); Renato L Monteiro and Sinuhe Cruz, 'Direitos dos titulares: fundamentos, limites e aspectos práticos' in DSL Francoski; FA Tasso (eds), *A Lei Geral de Proteção de Dados Pessoais LGPD: aspectos práticos e teóricos relevantes no setor público e privado* (Revista dos Tribunais 2021); Carlos A Souza, Christian Perrone and Eduardo Magrani, 'O direito à explicação entre a experiência europeia e a sua positivação na LGPD' in Danilo Doneda et al. (eds), *Tratado de Proteção de Dados Pessoais* (Forense 2021); Isabela Ferrari and Daniel Becker, 'Direito à explicação e decisões automatizadas: reflexões sobre o princípio do contraditório' in D Nunes, PHS Lucon and EN Wolkart (eds), *Inteligência Artificial e Direito Processual: Os Impactos da Virada Tecnológica no Direito Processual* (JusPodivm 2021).

combination of functional, analytical, and law-in-context methods.[15] We adopt the functional method to merge theoretical examination with practical and empirical analysis of how legal institutions in Brazil and the EU tackle the sociotechnical complexities of ADM. By studying the functional equivalence[16] between the regulatory approaches to ADM across the Atlantic, we can identify "similarity in difference".[17] Our study builds upon existing scholarship and proposes a comprehensive exploration of the multifaceted nature of ADM, particularly focusing on the interpretation of Art. 20 of the LGPD and Art. 22 of the GDPR. In our methodological design, the other two methods are complementary (i) to scrutinize the legal concept of "decision solely based on automated processing" as well as the data subject rights connected to ADM in both the EU and Brazil's jurisdictions (analytical method); and (ii) to effectively understand data protection law in action regarding ADM and its application by institutions (i.e. Data Protection Authorities) and courts in both systems (law-in-context method).

The relevance of our work lies in its contribution to filling existing gaps in the understanding of ADM systems as sociotechnical systems and in the legal interpretation of applicable data protection regulation, particularly in the Brazilian context, where data protection legal doctrine and the institutionalization of data protection legal culture is still in its early days. Although much of the analysis done in Brazil are solely focused on legislative comparisons across jurisdictions, or merely making *de facto* comparisons without adopting rigorous comparative law methodology, our research aims to provide a nuanced understanding of the principles of ADM and

[15] Mark van Hoecke, 'Methodology of Comparative Legal Research' [2016] Law and Method 279.
[16] Ralf Michaels, 'The Functional Method of Comparative Law' in Mathias Reimann and Rreinhard Zimmermann (eds), *The Oxford Handbook of Comparative Law* (2nd edn, Oxford University Press 2019) 356-357.
[17] ibid 371.

their application in legal practice, thus informing the ongoing legislative and regulatory discourse in both jurisdictional scenarios.

The structure of this paper is thus designed to guide readers through both an examination of ADM and a contrast between how it is regulated in practice under EU and Brazilian data protection law. We begin by exploring the theoretical characteristics of ADM, followed by an analysis of the conceptual components of a "decision solely based on automated processing." This analysis builds on existing scholarly work that proposes relevant taxonomies and underscores the nuances of human involvement in ADM systems and also on insights from sociotechnical theory, which conceptualize these systems as sociotechnical systems. Subsequently, we analyze the data subjects' rights in relation to ADM.

Our comparative study between the EU and Brazil highlights the parallels and contrasts in ADM system regulation, particularly focusing on decisions by Data Protection Authorities and court rulings. This comparative approach highlights the possible convergence of legal systems in addressing ADM challenges. Our analysis aims to contribute to the ongoing discussions on ADM as a legal concept, providing insights into the interplay between technological advancements and legal frameworks especially in Brazil. Ultimately, this paper seeks to inform and guide the evolving legislative and regulatory processes and Brazilian case law, thereby fostering a deeper understanding of ADM systems and their significant repercussions in Brazilian legal culture.

2. Automated decision-making: what does it mean? What rights and legal protection does it trigger?

Decision-making systems may involve a blend of human and machine (or artificial agents[18]) within its sociotechnological framework. When it comes to ADM systems, automation takes on a key role by relying on its capacity to process data to render decisions without direct human involvement. The complexity of these systems can vary significantly. They may simply display *automaticity*, "referring to the capacity of a machine to activate and achieve its purposes without further human intervention (e.g., a landmine)"[19], or, by deploying machine learning (ML) algorithms, display different degrees of *decisional autonomy* insofar as they are designed to learn from historical data and adapt dynamically to their environment independent of their human designers.[20]

These systems are at the center of significant legal discussions, particularly under the framework of data protection regulation, such as the GDPR, or the LGPD.[21] At first glance, ADM systems function as fully automated processes, leaving no room for human interaction. An example of a fully automated decision is the determination of a factory worker's pay based on their

[18] *Artificial agent* is an artifact, a human creation that has agency. In accordance with Mireille Hildebrandt, "[t]he crucial and most elementary characteristic of agency is the capability of an entity to sense its environment and to act upon it. The most important step from deterministic to other types of agent is an agent's capability to learn from the combination of action and perception and thus to improve its performance in relation to the goals it aims to reach". Mireille Hildebrandt, *Smart Technologies and The End(s) of Law* (Edward Elgar 2015) 30.

[19] Karen Yeung, 'Why Worry About Decision-Making by Machine?' in Karen Yeung and Martin Lodge (eds), *Algorithmic Regulation* (Oxford University Press 2019) 22.

[20] Karen Yeung, 'Why Worry About Decision-Making by Machine?' in Karen Yeung and Martin Lodge (eds), *Algorithmic Regulation* (Oxford University Press 2019) 22.

[21] Stine Lomborg, Anne Kaun and Sne Scott Hansen, 'Automated decision-making: Toward a people-centered approach' (2022) 17/8 Sociology Compass <https://doi.org/10.1111/soc4.13097> accessed 29 July 2024; NCM Reis and GR Furtado, 'Decisões Automatizadas : Definição , Benefícios e Riscos' (2022) 11 Civilistica.com 1 <http://civilistica.com/decisoes- automatizadas/>.

productivity, which is automatically tracked. The decision regarding the worker's payment for each shift is made by referencing the productivity data collected automatically.[22]

Among data protection scholars, different classifications and typologies of ADM systems are proposed. According to Maja Brkan, for example, ADM is broadly defined as "taking a decision without human intervention"[23] and it includes various types of decisions. Brkan distinguishes between three categories of ADM: (i) procedural and substantive; (ii) algorithmic and non-algorithmic; and (iii) rule-based versus law-based decisions. Firstly, the contrast between procedural and substantive automated decision-making refers to ensuring fairness and accuracy. Procedural fairness requires that all decisions regarding similar or comparable facts follow the same automated procedure. Substantive fairness ensures that these decisions are non-discriminatory, particularly those involving algorithms.[24] With regard to the second classification, algorithmic automated decision-making involves the use of computer algorithms, which are defined as precise sets of steps that a computer can execute to accomplish a task. Conversely, non-algorithmic automated decision-making does not utilize such algorithms.[25] Thirdly, rule-based automated decisions are derived from business policies, such as profiling for targeted advertising. In contrast, law-based automated decisions are based on binding legal rules, such as issuing fines for speeding.

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[22] Information Commissioner's Office, *Automated decision-making and profiling* <https://ico.org.uk/for-organisations/uk-gdpr-guidance-and-resources/individual-rights/automated-decision-making-and-profiling/what-does-the-uk-gdpr-say-about-automated-decision-making-and-profiling/#id2> accessed 25 May 2024.

[23] Maja Brkan, 'Do Algorithms Rule the World? Algorithmic Decision-Making and Data Protection in the Framework of the GDPR and Beyond' (2019) 27 International Journal of Law and Information Technology 91, 93.

[24] ibid 94.

[25] ibid 94-95.

In light of the so-called "algorithmic society"[26] and recent breakneck developments in the field of AI, algorithmic ADM is garnering increasing attention. Though representing and acting upon our environment and material world, AI systems capture and ingest data (inputs) to produce various outputs, such as predictions (e.g., probability of loan default), recommendations (e.g., personalized content in social media feeds), classifications (e.g., categorizing emails as spam), and content generation (e.g., creating text or images in response to prompts)[27]. An AI system can be considered fully automated when its outputs and/or subsequent actions are executed without any human involvement or oversight.[28] For instance, the decision to deplatform a driver from a ride-hailing app due to an unsatisfactory accumulated score, if made automatically by the software system without any human consideration or analysis whatsoever, exemplifies a fully automated decision-making.

However, numerous practical situations are not as clear-cut as the aforementioned example. Instead, they often fall into a gray zone where automated processing and artificial agents'

[26] Rik Peeters and Marc Schuilenburg, 'The Algorithmic Society: An Introduction' in Rik Peeters and Marc Schuilenburg (Eds.) *The Algorithmic Society: Technology, Power, and Knowledge* (Routledge 2021).

[27] According to the updated definition of the Organisation for Economic Cooperation and Development (OECD): "An AI system is a machine-based system that, for explicit or implicit objectives, infers, from the input it receives, how to generate outputs such as predictions, content, recommendations, or decisions that can influence physical or virtual environments. Different AI systems vary in their levels of autonomy and adaptiveness after deployment." [OECD, 'Explanatory memorandum on the updated OECD definition of an AI system', *OECD Artificial Intelligence Papers*, No. 8 (OECD Publishing 2024) 4 https://doi.org/10.1787/623da898-en]. The legal definition of the EU AI Act in Art. 3(1) is very similar: "AI system' means a machine-based system that is designed to operate with varying levels of autonomy and that may exhibit adaptiveness after deployment, and that, for explicit or implicit objectives, infers, from the input it receives, how to generate outputs such as predictions, content, recommendations, or decisions that can influence physical or virtual environments [...].".

[28] *See* David Leslie, 'Explaining Decisions Made with AI' (Information Commissioner's Office-Alan Turing Institute 2022) 7.

behavior[29] are blended with human interventions.[30] Scholars have been classifying these situations as "semi-automated decisions"[31], "decision support systems"[32], "hybrid decision-making"[33], "quasi-automation"[34], "partially automated systems"[35], "multi-stage profiling systems"[36] or "human-in-the-loop systems"[37]. On the face of it, any human involvement in a system might suggest the inapplicability of data protection law provisions on ADM, which typically require decisions to be *solely* based on automated processing.[38] Nevertheless, concerns arise regarding the quality of human involvement and its capacity to interrupt the automated process. To avoid

[29]For a more detailed understanding of machine behavior and its status as a new object of scientific study, *see* Iyad Rahwan and others, 'Machine Behaviour' (2019) 568 Nature 477 <http://dx.doi.org/10.1038/s41586-019-1138-y>.

[30] Council of Europe, 'Algorithms and Human Rights: Study on the Human Rights Dimensions of Automated Data Processing Techniques' (2018) 7.

[31] Simona Demková, 'The Decisional Value of Information in European Semi-Automated Decision-Making' (2021) 14 Review of European Administrative Law 29.

[32] AlgorithmWatch, 'Automating Society: Taking Stock of Automated Decision-Making in the EU' (2019) 9.

[33] Terese Enarsson, Lena Enqvist and Markus Naarttijärvi, 'Approaching the Human in the Loop–Legal Perspectives on Hybrid Human/Algorithmic Decision-Making in Three Contexts' (2022) 31 Information and Communications Technology Law 123, 124.

[34] Ben Wagner, 'Liable, but Not in Control? Ensuring Meaningful Human Agency in Automated Decision-Making Systems' (2019) 11 Policy and Internet 104, 114.

[35] Claire Hall, 'Challenging Automated Decision-Making by Public Bodies: Selected Case Studies from Other Jurisdictions' (2020) 25 Judicial Review 8 <https://doi.org/10.1080/10854681.2020.1732738>.

[36] Reuben Binns and Michael Veale, 'Is That Your Final Decision? Multi-Stage Profiling, Selective Effects, and Article 22 of the GDPR' (2021) 11 International Data Privacy Law 319, 321.

[37] Rebecca Crootof and others, 'Humans in the Loop' (2023) 76 Vanderbilt Law Review 429, 441.

[38] Reuben Binns and Michael Veale, 'Is That Your Final Decision? Multi-Stage Profiling, Selective Effects, and Article 22 of the GDPR' (2021) 11 International Data Privacy Law 319, 320; Núria López, 'Decisões automatizadas: o futuro regulatório de inteligência artificial' in D S L Francoski and F A Tasso (Eds.) *A Lei Geral de Proteção de Dados Pessoais: Aspectos Práticos e Teóricos Relevantes no Setor Público e Privado* (Thomson Reuters Brasil 2021) 851. Wachter and others describe this as a legal loophole both in the DPD and GDPR: "Automated decision-making is defined in both the Directive and GDPR as decision-making based *solely* on automated processes. Quite crucially, this creates a loophole whereby even nominal involvement of a human in the decision-making process allows for an otherwise automated mechanism to avoid invoking elements of the right of access (both in the Directive and GDPR) addressing automated decisions." Sandra Wachter, Brent Mittelstadt and Luciano Floridi (n 11) 88.

qualifying as a decision solely based on automated processing, guidelines point out and scholars argue that there must be *meaningful human input.*[39]

The issue of the relevance of human involvement in semi-automated systems is expressed through concerns about natural persons not having any real influence on the outcome of the decision-making process,[40] or instances of fabricated human intervention, where and individual is allocated to merely "rubber-stamp"[41] or make only a "token gesture"[42], which ultimately amounts to an empty procedural step. Additionally, automation bias and algorithmic opacity raise significant doubts about the real efficacy human participation has in the decision-making process.[43]

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[39] In general, *see* Article 29 Data Protection Working Party, 'Guidelines on Automated Individual Decision-Making and Profiling for the Purposes of Regulation 2016/679' (2017) 20-21; Caitlin Mulholland and Isabella Z. Frajhof, 'Inteligência artificial e Lei Geral de Proteção de Dados Pessoais: breves anotações sobre o direito à explicação perante a tomada de decisões por meio de machine learning' in FRAZÃO, Ana Frazão and Caitlin Mulholland (Eds.). *Inteligência artificial e Direito: ética, regulação e responsabilidade* (Revista dos Tribunais 2019) 275; Maja Brkan, 'Do Algorithms Rule the World? Algorithmic Decision-Making and Data Protection in the Framework of the GDPR and Beyond' (2019) 27 International Journal of Law and Information Technology 91, 101; NCM Reis and GR Furtado, 'Decisões Automatizadas : Definição , Benefícios e Riscos' (2022) 11 Civilistica.com 1 <http://civilistica.com/decisoes- automatizadas/>.

[40] Isak Mendoza and Lee A Bygrave, 'The Right Not to Be Subject to Automated Decisions Based on Profiling' in Tatiana-Eleni Synodinou and others (eds), *EU Internet Law: Regulation and Enforcement* (Springer International Publishing 2017) 87.

[41] Michael Veale and Lilian Edwards, 'Clarity, Surprises, and Further Questions in the Article 29 Working Party Draft Guidance on Automated Decision-Making and Profiling' (2018) 34 Computer Law and Security Review 398.

[42] Article 29 Data Protection Working Party, 'Guidelines on Automated Individual Decision-Making and Profiling for the Purposes of Regulation 2016/679' (2017) 21.

[43] Simona Demková, 'The Decisional Value of Information in European Semi-Automated Decision-Making' (2021) 14 Review of European Administrative Law 29, 45-47. Excessive reliance on algorithms might affect human decision-making, a concept known as automation bias, which is not to be mistaken for algorithmic bias. While both concepts relate to biases in automated systems, automation bias refers to the tendency of humans to favor suggestions from automated systems, even when those suggestions are incorrect or suboptimal. As Skitka, Mosier and Burdik posit, this type of cognitive bias manifests when people use automated systems' outcomes "as a heuristic replacement for more vigilant and complete information search and processing." (Linda J Skitka, Kathleen L Mosierand and Mark D Burdik, 'Automation Bias, Accountability, and Verification Behaviors' (2000) 52 International Journal of Human-Computer Studies 701 <https://doi.org/10.1006/ijhc.1999.0349>). This bias stems from cognitive factors such as trust in technology and a desire for efficiency, leading to an over-reliance on automated outputs. On the other hand, algorithmic bias originates from the algorithms themselves, arising from biased training data or design flaws that result in discriminatory outcomes for certain groups. This perspective sees the ethical and moral dimensions algorithmic bias (Batya Friedman and Helen Nissenbaum, 'Bias in Computer Systems' (1996) 14 ACM Transactions on Information Systems 330 <https://nissenbaum.tech.cornell.edu/papers/Bias%20in%20Computer%20Systems.pdf>

Automation bias refers to the tendency to over-rely on automated systems,[44] while algorithmic opacity describes the highly complex and incomprehensible inner workings of AI-based ADM systems[45]. Together, these factors "render it more difficult for the responsible agent to understand, consult, or otherwise verify the output, i.e. to meaningfully exercise their decision-making discretion."[46]. As a result, the applicability of data protection law ADM rules in these scenarios remains uncertain.

Michael Veale and Reuben Binns introduce three different ways in which "multi-stage profiling systems" (or semi-automated systems) can usually be structured. Depending on the role automation plays in assisting decision-making, these systems can be used for *supporting*, *triaging* and *summarization*. *Decision-support systems* are designed to furnish information to human decision-makers, thereby aiding them in deciding a case. However, they are not the exclusive source of information considered by the decision maker; they are merely one of several sources of

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accessed 29 December 2025). However, the term can also be understood in a neutral way – e.g., statistical bias (Sina Fazelpour and David Danks, 'Algorithmic bias: Senses, sources, solutions' (2021) 16 Philosophy Compass <https://doi.org/10.1111/phc3.12760>).

[44] K Goddard, A Roudsari and JC Wyatt, 'Automation Bias: Empirical Results Assessing Influencing Factors' (2014) 83 International Journal of Medical Informatics 368 <https://www.sciencedirect.com/science/article/pii/S1386505614000148>. We find in Toronto's pilot AI project to warn swimmers a concrete example of automation bias. Toronto's experiment with AI to predict water safety at polluted beaches failed significantly, with a model often misclassifying unsafe water as safe, opening beaches on nearly 50 days with hazardous E. coli levels. The AI, developed by Cann Forecast, proved less accurate than prior methods and highlighted broader concerns about governments' use of predictive algorithms. Data published by the city showed that the posted swimming flags at beaches never differed from the model's predictions, demonstrating that officials overseeing the algorithmic system relied on its results every time. Paris Martineau, 'Toronto Tapped Artificial Intelligence to Warn Swimmers. The Experiment Failed' The Information (04 November 2022) <https://www.theinformation.com/articles/when-artificial-intelligence-isnt-smarter> accessed 21 December 2024.

[45] The authors acknowledge that the problems associated with opacity and inscrutability do not apply to all AI systems, but in particular to so-called black-box AI models, such as those using neural networks and deep learning approaches. In general, *see* Jenna Burrell J, 'How the Machine "Thinks:" Understanding Opacity in Machine Learning Algorithms' (2016) 3 Big Data & Society 1.

[46] Simona Demková, 'The Decisional Value of Information in European Semi-Automated Decision-Making' (2021) 14 Review of European Administrative Law 29, 47.

information that may be taken into account.[47] For instance, a system used to support civil servants in determining which course of action to undertake in order to best assist a job seeker in finding employment.[48] In *triage systems,* "new cases are profiled and categorized," determining the "future decision pathway that the case continues along."[49] The authors mention the example of the Allegheny Family Screening Tool, which is a predictive system that operates at the screening stage. This is when a call screening worker must decide whether to investigate an allegation of child neglect that comes through the hotline. The system scores the child's risk between 1 and 20, and children with scores of 20 are automatically screened in unless manually overridden by a supervisor. In other instances, the decision to screen in or out is entirely at the discretion of the human operator.[50]

As to the *automatic summarization systems*, "[o]ne or more human decisions or assessments are recorded as structured data, and that data is summarized or consolidated automatically to generate an overall score or assessment which is used to make a decision."[51] As an example of this type of system, Veale and Binns refer to handwritten assessments, such as exam scripts or employee evaluations, that are scanned and processed using optical character recognition

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[47] Reuben Binns and Michael Veale, 'Is That Your Final Decision? Multi-Stage Profiling, Selective Effects, and Article 22 of the GDPR' (2021) 11 International Data Privacy Law 319, 322.

[48] It is worth looking up for the Public Employment Service Austria (AMS) algorithmic system case: Doris Allhutter and others, 'Algorithmic Profiling of Job Seekers in Austria: How Austerity Politics Are Made Effective' (2020) 3 Frontiers in Big Data 1.

[49] Reuben Binns and Michael Veale, 'Is That Your Final Decision? Multi-Stage Profiling, Selective Effects, and Article 22 of the GDPR' (2021) 11 International Data Privacy Law 319, 322.

[50] *See* Rhema Vaithianathan and others, 'Developing Predictive Models to Support Child Maltreatment Hotline Screening Decisions: Allegheny County Methodology and Implementation' (2017) 26 <https://www.alleghenycountyanalytics.us/wp-content/uploads/2019/05/Methodology-V1-from-16-ACDHS-26_PredictiveRisk_Package_050119_FINAL.pdf> accessed 1 June 2024.

[51] Reuben Binns and Michael Veale, 'Is That Your Final Decision? Multi-Stage Profiling, Selective Effects, and Article 22 of the GDPR' (2021) 11 International Data Privacy Law 319, 323.

(OCR) or optical mark recognition (OMR). This automated process converts handwritten scores into data and performs basic numerical operations, such as tallying totals and calculating averages. The resulting data is then used, possibly automatically, to make decisions, such as assigning exam grades or selecting job applicants. It is worth noting that more recently, generative AI models such as ChatGPT have increasingly been used for text summarization in general.[52] These models can certainly be integrated into semi-automated systems to do this task.

Overall, the proposed taxonomy offers a valuable conceptual framework for analyzing ADM arrangements across various sectors and application scenarios. These include contexts such as migration and asylum governance,[53] as well as the education domain, particularly with the increasing adoption of automated assessment tools.[54]

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[52] In general, see 'Learning to summarize with human feedback' <https://openai.com/index/learning-to-summarize-with-human-feedback/> accessed 03 June 2024.

[53] Francesca Palmiotto, 'When Is a Decision Automated? A Taxonomy for a Fundamental Rights Analysis' (2024) 25 German Law Journal 210. Francesca Palmiotto builds on Veale's and Binns' taxonomy to identify three primary uses of ADM systems: internal case management, flagging potential suspects and generating evidence in administrative and judicial proceedings. *Automated triage* is used to categorize applications and assign them to caseworkers based on prior experience and skills, who then make the final decision for applicants automatically assigned to them by a triage system - e.g., visa, residency, citizenship, settlement, or asylum application. *Automated suspicion* functions somewhat like a specialized form of triage. It triggers follow-up actions or further investigation by officials when suspects of illegal behavior or potential security threats are identified. For instance, in the EU, passenger name record information from flights originating outside Europe is utilized to prevent, detect and prosecute terrorist offenses and crimes, as provided for in Directive 2016/681. Finally, there is the *automated evidence*. It takes place when the output of an automated system is used to prove a fact that is relevant to the final decision of a competent authority. As Palmiotto mentions, the German immigration authority, for example, employs a digital tool for name transliteration to convert asylum seekers' names into the Latin alphabet and also to support dialect identification. *See* also: Derya Ozkul, 'Automating Immigration and Asylum: The Uses of New Technologies in Migration and Asylum Governance in Europe' (2023) 41 <https://www.rsc.ox.ac.uk/publications/automating-immigration-and-asylum-the-uses-of-new-technologies-in-migration-and-asylum-governance-in-europe>.

[54] Liane Colonna refer to Veale and Binns' research to scrutinize ADM systems usage in formative and summative assessments (Liane Colonna, 'Teachers in the Loop? An Analysis of Automatic Assessment Systems under Article 22 GDPR' (2024) 14 International Data Privacy Law 3 <https://doi.org/10.1093/idpl/ipad024>).

The meaning of what constitutes a "decision" is another key issue regarding data protection law ADM regulation. Thus far, there has been no consensus among legal scholars about this notion. One prominent line of interpretation of the term posits that a decision signifies an attitude of some sort that is taken towards a data subject that is likely to be acted upon.[55] Whislt this is all but a conclusive conceptualization, scholars point out that there is room for a more expansive interpretation.[56] This approach suggests that the meaning of a decision can be understood beyond the final step and in closer proximity to the concrete outcomes of automated processing. In other words, the definition could also be understood to encompass the intermediate decisional steps that occur along the ADM, leading to the final outcome.[57] For example, the inferred profile (i.e., profile creation) that is applied to job-seekers further up in the ADM process could be considered a decision. With regards to AI systems, this line of thought is likely to consider

[55] Isak Mendoza and Lee A Bygrave, 'The Right Not to Be Subject to Automated Decisions Based on Profiling' in Tatiana-Eleni Synodinou and others (eds), *EU Internet Law: Regulation and Enforcement* (Springer International Publishing 2017) 87; Lee A Bygrave, 'Article 22 [Automated individual decision-making, including profiling]' in Christopher Kuner, Lee A Bygrave and Christopher Docksey (eds.) *The EU General Data Protection Regulation (GDPR) – A Commentary* (Oxford University Press 2020) 532. See also: Lilian Edwards and Michael Veale, 'Slave to the Algorithm? Why a "Right to an Explanation" Is Probably Not the Remedy You Are Looking For' (2017) 16 Duke Law & Technology Review 18, 46; David Leslie, 'Explaining Decisions Made with AI' (Information Commissioner's Office-Alan Turing Institute 2022) 7.

[56] Laurens Naudts, Pierre Dewitte and Jef Ausloos, 'Meaningful Transparency through Data Rights: A Multidimensional Analysis' in Eleni Kosta, Ronald Leenes and Irene Kamara (eds), *Research Handbook on EU Data Protection Law* (Edward Elgar 2022) 549; Peter AE Davis and Sebastian F Schwemer, 'Rethinking Decisions under Article 22 of the GDPR: Implications for Semi-Automated Legal Decision-Making', *CEUR Workshop Proceedings* (2023) <https://ceur-ws.org/Vol-3423/paper8.pdf> accessed 01 August 2024.

[57] Reuben Binns and Michael Veale, 'Is That Your Final Decision? Multi-Stage Profiling, Selective Effects, and Article 22 of the GDPR' (2021) 11 International Data Privacy Law 319; Laurens Naudts, Pierre Dewitte and Jef Ausloos, 'Meaningful Transparency through Data Rights: A Multidimensional Analysis' in Eleni Kosta, Ronald Leenes and Irene Kamara (eds), *Research Handbook on EU Data Protection Law* (Edward Elgar 2022) 549; Peter AE Davis and Sebastian F Schwemer, 'Rethinking Decisions under Article 22 of the GDPR: Implications for Semi-Automated Legal Decision-Making', *CEUR Workshop Proceedings* (2023) <https://ceur-ws.org/Vol-3423/paper8.pdf> accessed 01 August 2024.

algorithmic outcomes such as predictions, classifications and recommendations, which affect individuals, to be decisions.[58]

Such complex and multifaceted configurations within ADM systems, intertwined with factors such as automation bias and opacity, indicate that these systems are not merely technical systems. Rather, they constitute *sociotechnical systems* and must be interpreted as such.[59] This implies that ADM systems do not exist in a void; they are shaped by human social interactions and institutional environments, and they, in turn, influence these social and institutional relations. To put it differently, "a sociotechnical perspective means viewing society and technology together as one coherent system. In other words, 'it is not possible to understand the "social" without the "technical," nor the "technical" without the "social."'[60] Therefore, as sociotechnical systems, the quality and integration of human involvement must be considered in a holistic analysis of ADM systems' processes, extending beyond purely technical or computational aspects.[61]

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[58] *See* J Gerards and F Zuiderveen Borgesius , 'Protected Grounds and the System of Non-Discrimination Law in the Context of Algorithmic Decision-Making and Artificial Intelligence' (2022) 20 Colorado Technology Law Journal 1, 5.

[59] In general: Karen Yeung and Martin Lodge, 'Algorithmic Regulation: An Introduction' in Karen Yeung and Martin Lodge (eds), *Algorithmic Regulation* (Oxford University Press 2019) 8; Mireille Hildebrandt, *Smart Technologies and The End(s) of Law* (Edward Elgar 2015); Lilian Edwards and Michael Veale, 'Slave to the Algorithm? Why a "Right to an Explanation" Is Probably Not the Remedy You Are Looking For' (2017) 16 Duke Law & Technology Review 18; Stone J and Mittelstadt B, 'Legitimate Power, Illegitimate Automation: The Problem of Ignoring Legitimacy in Automated Decision Systems' <http://arxiv.org/abs/2404.15680>; Liana Colonna, 'Teachers in the Loop? An Analysis of Automatic Assessment Systems under Article 22 GDPR' (2024) 14 International Data Privacy Law 3 <https://doi.org/10.1093/idpl/ipad024>.

[60] "Generally, a sociotechnical perspective means viewing society and technology together as one coherent system. In other words, it is not possible to understand the "social" without the "technical," nor the "technical" without the "social." Explaining the outcomes of any technology requires focusing on the messier "middle ground" between these two realms." BJ Chen and J Metcalf, 'Explainer: A Sociotechnical Approach to AI Policy' (2024) <https://datasociety.net/wp-content/uploads/2024/05/DS_Sociotechnical-Approach_to_AI_Policy.pdf> accessed 05 August 2024.

[61] Rashida Richardson, 'Defining and Demystifying Automated Decision Systems' (2022) 81 Maryland Law Review 785, 789 ("AI and ADS are socio-technical systems that depend on and must be responsive to the contextual settings in which they function"). Council of Europe, 'Algorithms and Human Rights: Study on the Human Rights Dimensions

One way data protection law addresses the risks and impacts of ADM on individuals is through the enactment of data subjects' rights. France, for example, had already introduced broad data protection laws, through Act. n. 78-17 of 6 January 1978 on Data Processing, Data Files and Individual Liberties, which included a general prohibition of "automatic processing of data" for profiling purposes (Art. 2) and a data subject's right to know and contest the information utilized in automated processing (Art. 3).[62] The same can be said about the EU's Directive 95/46/EC (hereafter, DPD),[63] which granted the right to data subjects not to be subjected to a decision based solely on automated processing of data, an embryo very similar to what would be included in the GDPR in 2016.[64]

These legal protections arise from concerns about how automated decisions in both public and private sectors could interfere with the human dignity of individual natural persons.[65]

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of Automated Data Processing Techniques' (2018) 8 ("It should be noted that algorithms as discussed here do not exist meaningfully without interaction with human beings. Mathematic or computational constructs do not by themselves have adverse human rights impacts but their implementation and application to human interaction does."). With the same approach *see* AlgorithmWatch, 'Automating Society: Taking Stock of Automated Decision-Making in the EU' (2019) 9: "By saying *systems* instead of *technologies* we point to the fact that we need to take a holistic approach here: an ADM system, in our use of the term, is a socio-technological framework that encompasses a decision-making model, an algorithm that translates this model into computable code, the data this code uses as an input—either to 'learn' from it or to analyze it by applying the model—and the entire political and economic environment surrounding its use. This means that the decision itself to apply an ADM system for a certain purpose—as well as the way it is developed (i.e. by a public sector entity or a commercial company), procured and finally deployed—are parts of this framework."

[62] *Loi n° 78-17 du 6 janvier 1978 relative à l'informatique, aux fichiers et aux libertés* <https://www.legifrance.gouv.fr/loda/id/LEGIARTI000006528059/1978-07-23/#LEGIARTI000006528059> accessed 15 December 2024.

[63] Directive 95/46/EC of the European Parliament and of the Council of 24 October 1995 on the protection of individuals with regard to the processing of personal data and on the free movement of such data, OJ 1995 L 281/31.

[64] Isak Mendoza and Lee A Bygrave, 'The Right Not to Be Subject to Automated Decisions Based on Profiling' in Tatiana-Eleni Synodinou and others (eds), *EU Internet Law: Regulation and Enforcement* (Springer International Publishing 2017) 83-85.

[65] Lee A Bygrave, 'Automated Profiling - Minding the Machine: Article 15 of the EC Data Protection Directive and Automated Profiling' (2001) 17 Computer Law and Security Review 17; Meg L Jones, 'The Right to a Human in the Loop: Political Constructions of Computer Automation and Personhood' (2017) 47 Social Studies of Science 216, 225; Michael Veale and Irina Brass, 'Administration by Algorithm? Public Management Meets Public Sector Machine

Additionally, it could be argued that the basis of the legal regime on data subjects' rights related to ADM is grounded in securing the participation of individuals in decisions made by computer systems that impact their legal sphere, thereby giving them the opportunity to influence the outcomes of algorithmic data processing.[66]

Both the EU GDPR and Brazil's General Data Protection Law provide data subjects with certain entitlements to be informed about decisions made exclusively through automated means. These rights include claims to understand the rationale, criteria and the potential consequences of such automated processing on the individuals concerned (Arts. 13-15 GDPR; Art. 20 §1 LGPD). They also encompass the data subject's right of access (Art. 15 GDPR; Arts. 9 and 19 II LGPD).

To shield data subjects from the inherent risks of ADM systems, the EU data protection legal framework provides the right not to be subjected to a decision based solely on automated processing (Art. 22(1) GDPR), alongside several safeguards and rights for the limited cases in which ADM is permitted. One such safeguard is the right to contest or challenge the result of the automated decision taken that affects data subjects. Under the Brazilian legal system, the data

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Learning' in Karen Yeung and Martin Lodge (eds), *Algorithmic Regulation* (Oxford University Press 2019) 139; Edoardo Celeste and Giovanni De Gregorio, 'Digital Humanism: The Constitutional Message of the GDPR' (2022) 3 Global Privacy Law Review 4, 15. In its opinion issued before the CJEU in Case C–642/21, Advocate General Pikamäe posits that the restrictions on ADM provided for in Art 22 GDPR "seek to protect human dignity" (Case C–642/21 *Land Hessen v SCHUFA Holding AG* [2023] Opinion of AG Pikamäe, para 19).

[66] This element of participation is clearly expressed in a 1990 communication of the Commission of the European Communities, during the discussions for a Directive proposal on the protection of personal data: "This provision is designed to protect the interest of the data subject in participating in the making of decisions which are of importance to him. The use of extensive data profiles of individuals by powerful public and private institutions deprives the individual of the capacity to influence decision-making processes within those institutions, should decisions be taken on the sole basis of his 'data shadow'" (Explanatory text for Proposal for a Council Directive concerning the protection of individuals in relation to the processing of personal data, COM(90) 314 final – SYN 287 <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:51990DC0314&from=EN> accessed 03 August 2024).

subjects' right to review in case a decision is solely based on automated processing has some relevant specificities, which will be discussed in greater detail in the next sections.

Overall, even a superficial comparison of data subjects' rights across jurisdictions, triggered by the recognition of a decision as automated, reveals the enshrinement of critical rights for the protection of fundamental rights and freedoms in the face of increasingly complex sociotechnical systems such as ADM systems. In the following sections, we will delve deeper into the characteristics of ADM legal regimes on both sides of the Atlantic, their conceptual elements according to legislation, legal doctrine and their jurisprudential application.

3. Regulatory approaches to ADM across the pond: EU and Brazil legal frameworks

Legal regulation of ADM systems is not new; it dates back to at least the 1970s. However, recent technological advancements in the field of AI not only expanded the ADM landscape and its societal impacts dramatically but also ended up substantially contributing to the emergence of new regulatory approaches, such as the newly approved EU proposal on harmonized rules on AI systems. As previously discussed, ADM systems are complex sociotechnical constructs that present challenges to institutions in both the EU and in Brazil. Addressing these challenges effectively requires a nuanced understanding of the interpretation and application of legal norms related to decisions made solely based on automated data processing, with the overarching goal of protecting individuals and upholding fundamental values such as human dignity.[67]

[67] Meg L Jones (n 65). Meg Leta Jones' comparative study underlines the fundamental underpinning of European digital policymaking regarding ADM systems by human dignity. The importance of human dignity is also baked into Brazilian data protection law, not only due to the influence of EU data protection legislation, but also due to the role played by Brazilian private law scholars and their personality rights doctrine in the conceptualisation of the right to privacy and the right to the protection of personal data. See Rafael AF Zanatta and Danilo Doneda, 'Personality Rights

The subsequent analysis explores the regulatory frameworks implemented in the EU and Brazil to tackle the challenges posed by ADM systems. Since this paper examines the regulation of ADM systems, focusing exclusively on their treatment under data protection laws in Brazil and the European Union, broader AI regulations, while relevant, fall outside the scope of this analysis.

3.1. ADM regulation in the EU law

The core of ADM regulation in EU data protection law: Art. 22(1) of the GDPR

The EU data protecion law core regulatory undertaking to address the risks stemming from contemporary ADM systems is inscribed in Art. 22 of the GDPR. This legal provision was, as a general rule, adapted from the DPD, more specifically from its Art. 15, which was once metaphorically described as a "house of cards"[68] in view of the multiple conditions it incorporated. This metaphor ultimately proved apt, given the provision's limited practical application.[69]

In addition to Art. 22, the GDPR contains other provisions related to ADM. Arts. 13(2)(f), 14(2)(g), and 15(1)(h) establish the right of data subjects to be informed about the existence of automated decision-making, including profiling.[70] These provisions also require the disclosure of meaningful information about the logic involved, as well as the significance and anticipated

in Brazilian Data Protection Law: a historical perspective' in M Albers and IW Sarlet (eds.) *Personality and DataProtection Rightson the Internet: Brazilian and German Approaches* (Springer 2022).

[68] Lee A Bygrave (n 65) 21.

[69] *See* Isak Mendoza and Lee A Bygrave, 'The Right Not to Be Subject to Automated Decisions Based on Profiling' in Tatiana-Eleni Synodinou and others (eds), *EU Internet Law: Regulation and Enforcement* (Springer International Publishing 2017) 81. Some scholars replicate this kind of criticism towards Art. 22 of the GDPR: Lee A Bygrave, 'Minding the Machine v2.0: The EU General Data Protection Regulation and Automated Decision-Making' in Karen Yeung and Martin Lodge (eds), *Algorithmic Regulation* (Oxford Univesity Press 2019); Guilherme Lazcoz and Paul de Hert, 'Humans in the GDPR and AIA Governance of Automated and Algorithmic Systems. Essential Pre-Requisites against Abdicating Responsibilities' (2023) 50 Computer Law and Security Review <https://doi.org/10.1016/j.clsr.2023.105833>.

[70] The GDPR defines "profiling" in Art. 4(4). In contrast, the Brazilian LGPD does not offer a legal concept of the term.

consequences of such processing—at least in cases falling under Art. 22(1) and (4). Furthermore, Directive 2016/680 (the Law Enforcement Directive)[71] contains a provision in Art. 11 analogous to Art. 22 of the GDPR, albeit with certain textual distinctions.

One of the initial hermeneutic challenges encountered in interpreting Art. 22 concerned its legal nature, specifically whether it constitutes a qualitative prohibition or confers upon data subjects a right to oppose automated decisions.[72] On one hand, the notion of a prohibition finds its origins in prior national legislation of EU Member States, both preceding and following the DPD. On the other hand, the literal wording of Art. 22(1), which suggests an individual right for data subjects, aligns with the adoption of a data subject-request model inspired by Art. 15 of the DPD.[73]

In 2017, the Article 29 Data Protection Working Party (WP29) issued its *Guidelines on Automated Individual Decision-Making and Profiling for the purposes of Regulation 2016/679*, which were later endorsed by the European Data Protection Board (EDPB).[74] As part of the institutional framework established by the GDPR, the EDPB serves as the formal successor to the

[71] Directive (EU) 2016/680 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 by competent authorities for the purposes of the prevention, investigation, detection or prosecution of criminal offences or the execution of criminal penalties, and on the free movement of such data, and repealing Council Framework Decision 2008/977/JHA, OJ 2016 L 119/89. Art. 11 (1) of the LED stipulates: "Member States shall provide for a decision based solely on automated processing, including profiling, which produces an adverse legal effect concerning the data subject or significantly affects him or her, to be prohibited unless authorised by Union or Member State law to which the controller is subject and which provides appropriate safeguards for the rights and freedoms of the data subject, at least the right to obtain human intervention on the part of the controller."

[72] Sandra Wachter, Brent Mittelstadt and Luciano Floridi (n 11) 95-96; Maja Brkan, 'Do Algorithms Rule the World? Algorithmic Decision-Making and Data Protection in the Framework of the GDPR and Beyond' (2019) 27 International Journal of Law and Information Technology 91, 98.

[73] Sandra Wachter, Brent Mittelstadt and Luciano Floridi (n 11) 95-96.

[74] During its first plenary meeting the EDPB endorsed the GDPR related WP29 documents: EDPB, *Endorsement 1/2018* <https://www.edpb.europa.eu/news/news/2018/endorsement-gdpr-wp29-guidelines-edpb_en> accessed 10 January 2025.

WP29. In these guidelines, the EDPB interprets Art. 22(1) as "a general prohibition for decision-making based solely on automated processing."[75] This interpretation is widely supported in scholarly commentary and is the predominant perspective on the EU regulatory framework.[76] The CJEU's subsequent jurisprudence ultimately upheld this understanding, as will be further delineated in section 4.1.

According to scholars such as as Meg Leta Jones, Guilhermo Lazcoz, Paul de Hert and others,[77] the Art. 22(1) prohibition manifests the GDPR's *human in the loop approach*. This rule ensures that when algorithmic systems involves machine decision-making, human assessment must be injected into the algorithmic process. *Human intervention* is thus considered an

[75] Article 29 Data Protection Working Party, 'Guidelines on Automated Individual Decision-Making and Profiling for the Purposes of Regulation 2016/679' (2017) 19.

[76] Among the extensive body of literature and authors that align with this perspective, we will briefly cite a select few: Isak Mendoza and Lee A Bygrave, 'The Right Not to Be Subject to Automated Decisions Based on Profiling' in Tatiana-Eleni Synodinou and others (eds), *EU Internet Law: Regulation and Enforcement* (Springer International Publishing 2017); Gianclaudio Malgieri, 'Automated Decision-Making and Data Protection in Europe', *Research Handbook on Privacy and Data Protection Law* (2022); Sandra Wachter, Brent Mittelstadt and Luciano Floridi (n 11); Maja Brkan, 'Do Algorithms Rule the World? Algorithmic Decision-Making and Data Protection in the Framework of the GDPR and Beyond' (2019) 27 International Journal of Law and Information Technology 91. For accounts challenging this prevailing interpretation, see: Luca Tosoni, 'The Right to Object to Automated Individual Decisions: Resolving the Ambiguity of Article 22(1) of the General Data Protection Regulation' (2021) 11 International Data Privacy Law 145; CIPL, Comments by the Centre for Information Policy Leadership on the Article 29 Data Protection Working Party's "Guidelines on Automated Individual Decision-Making and Profiling" < https://www.informationpolicycentre.com/uploads/5/7/1/0/57104281/cipl_comments_to_wp29_guidelines_on_automated_individual_decision-making_and_profiling.pdf#page=9.12> accessed 10 January 2025.

[77] *See* Meg L Jones, 'The Right to a Human in the Loop: Political Constructions of Computer Automation and Personhood' (2017) 47 Social Studies of Science 216; Guilherme Lazcoz and Paul de Hert, 'Humans in the GDPR and AIA Governance of Automated and Algorithmic Systems. Essential Pre-Requisites against Abdicating Responsibilities' (2023) 50 Computer Law and Security Review <https://doi.org/10.1016/j.clsr.2023.105833>; Terese Enarsson, Lena Enqvist and Markus Naarttijärvi, 'Approaching the Human in the Loop–Legal Perspectives on Hybrid Human/Algorithmic Decision-Making in Three Contexts' (2022) 31 Information and Communications Technology Law 123.

indispensable component of decision-making.[78] Consequently, data controllers are not allowed to engage in ADM unless they can demonstrate compliance with one of the legal bases outlined in Art. 22(2).

The application of the Art. 22(1) general prohibition is subject to three cumulative prerequisites: (i) there must be a *decision* (ii) *based solely on automated processing*, including profiling, (iii) that *produces legal effects* concerning the interested party or *similarly significantly affect* him or her.

The GDPR's prohibitive regime is triggered only when the automated processing qualifies as a *decision*. Data protection scholars have debated the conceptualization of this term since the era of the Data Protection Directive (DPD). Commenting on Article 15(1) of the DPD, Bygrave argued for a broad interpretation of the notion.[79] Building on his earlier conception, the author contends that "a decision probably means that a particular attitude or stance is taken towards a person and this attitude/stance has a degree of binding effect in the sense that it must—or, at the very least, is likely to—be acted upon."[80] In the context of AI-based ADM systems, this definition aligns closely with the notion of a decision as an action taken (or likely to be taken) based on AI system outputs, such as predictions or recommendations. While this perspective appears to

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[78] Guilherme Lazcoz and Paul de Hert, 'Humans in the GDPR and AIA Governance of Automated and Algorithmic Systems. Essential Pre-Requisites against Abdicating Responsibilities' (2023) 50 Computer Law and Security Review <https://doi.org/10.1016/j.clsr.2023.105833>.

[79] Lee A Bygrave, *Data Protection Law: Approaching Its Rationale, Logic and Limits* (Kluwer Law International 2002) 321.

[80] Lee A Bygrave, 'Article 22 [Automated individual decision-making, including profiling]' in Christopher Kuner, Lee A Bygrave and Christopher Docksey (eds.) *The EU General Data Protection Regulation (GDPR) – A Commentary* (Oxford University Press 2020) 532.

dominate scholarly discourse,[81] alternative viewpoints posit the possibility of algorithmic outputs themselves encompassing the definition of a decision.[82]

Although the EDPB's guidelines does not explicitly define what constitutes a decision, it has consistently recognized that delivering targeted advertising based on profiling qualifies as one.[83] For example, targeted advertisements delivered through a social network's recommender system, which infers personal interests, fall within this category.[84] Whether Art. 22 of the GDPR applies, according to the EDPB, depends more on the legal relevance or significance of the targeted advertising's effects on the data subject (third prerequisite) than on the nature of the processing.

In addition to the EDPB's guidance, Recital 71 of the GDPR suggests that an expansive approach should be adopted in interpreting the term decision. Though not legally binding, the

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[81] Isak Mendoza and Lee A Bygrave, 'The Right Not to Be Subject to Automated Decisions Based on Profiling' in Tatiana-Eleni Synodinou and others (eds), *EU Internet Law: Regulation and Enforcement* (Springer International Publishing 2017) 87; Lilian Edwards and Michael Veale, 'Slave to the Algorithm? Why a "Right to an Explanation" Is Probably Not the Remedy You Are Looking For' (2017) 16 Duke Law & Technology Review 18, 46; David Leslie, 'Explaining Decisions Made with AI' (Information Commissioner's Office-Alan Turing Institute 2022) 7; Gianclaudio Malgieri, 'Automated Decision-Making and Data Protection in Europe' in Gloria González Fuster, Rosamunde Van Brakel and Paul De Hert (eds), *Research Handbook on Privacy and Data Protection Law: Values, Norms and Global Politics* (Edward Elgar 2022) 433; Laurens Naudts, Pierre Dewitte and Jef Ausloos, 'Meaningful Transparency through Data Rights: A Multidimensional Analysis' in Eleni Kosta, Ronald Leenes and Irene Kamara (eds), *Research Handbook on EU Data Protection Law* (Edward Elgar 2022) 549.

[82] J Gerards and F Zuiderveen Borgesius , 'Protected Grounds and the System of Non-Discrimination Law in the Context of Algorithmic Decision-Making and Artificial Intelligence' (2022) 20 Colorado Technology Law Journal 1, 5; Teresa RH Ballell, *Guiding Principles for Automated Decision-Making in the EU* (European Law Institute 2022) 9 <https://www.europeanlawinstitute.eu/fileadmin/user_upload/p_eli/Publications/ELI_Guiding_Principles_for_Automated_Decision-Making_in_the_EU.pdf#page=8.10> accessed 13 january 2025.

[83] Article 29 Data Protection Working Party, 'Guidelines on Automated Individual Decision-Making and Profiling for the Purposes of Regulation 2016/679' (2017) 22; EDPB, 'Guidelines 8/2020 on the targeting of social media users' (2021) 25-26.

[84] *See* Arvind Narayanan, *Understanding Social Media Recommendation Algorithms* (Knight First Amendment Institute 2023) <https://s3.amazonaws.com/kfai-documents/documents/4a9279c458/Narayanan---Understanding-Social-Media-Recommendation-Algorithms_1-7.pdf> accessed 11 January 2025; X Zhou and others, 'The State-of-the-Art in Personalized Recommender Systems for Social Networking' (2012) 37 Artificial Intelligence Review 119.

recital refers to *measures* that individuals should not be subjected to, specifically referencing the evaluation of personal aspects related to a natural person. This implies that a range of measures may fall within the concept of a decision, based on ML-generated outputs, such as recommendations and classifications.[85] Such an interpretation broadens the scope of Art. 22, ensuring greater protection for the fundamental right to the protection of personal data in the context of multi-stage ADM systems.[86] While it does not resolve all the complexities of where the decisions are located in the profiling process – the "locating decisions" problem[87]–, it does open up the opportunity to contextually apply the EU ADM regulation to semi-automated systems such as decision-support and triage systems.

Notably, the introduction of the AI Act raises questions about how this broad interpretation of a decision will be harmonized with the legal text of the new regulation. The AI Act refers to decisions both as AI system outputs (Arts. 3(1), 60(4)(k), 61(1)(d)) and as actions (to be) taken based on these outputs (Art. 86(1)). One potential way forward may be to adopt a two-pronged approach: depending on the system's function and context of deployment the decision can

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[85] "In the context of the Data Protection Directive it has been argued that a 'decision' has to be interpreted broadly and Recital 71 of the GDPR clearly states that 'decision' may include a 'measure'. One of the critical elements under the Data Protection Directive was that 'the decision to which a person may object must be based on a profile of that person',56 but under the GDPR the decision or the measure may be based on any form of automated processing, even if no profile has been created, as long as it produces legal effects or similarly significantly affects data subjects." (Dimitra Kamarinou, Christopher Millard and Jatinder Singh, 'Machine Learning with Personal Data' in Ronald Leenes and others (eds.), *Data Protection and Privacy: The Age of the Intelligent Machines* (Hart Publishing 2017) 98).

[86] Peter AE Davis and Sebastian F Schwemer, 'Rethinking Decisions under Article 22 of the GDPR: Implications for Semi-Automated Legal Decision-Making' (2023) 3423 CEUR Workshop Proceedings 81.

[87] *See* Reuben Binns and Michael Veale, 'Is That Your Final Decision? Multi-Stage Profiling, Selective Effects, and Article 22 of the GDPR' (2021) 11 International Data Privacy Law 319, 325-326.

be either an output (e.g., a score calculated by a ML-based credit scoring system) or an action driven by an AI-based output (e.g., welfare benefit revocation based on a false positive from a risk profiling system).

The second condition to apply Art. 22(1) prohibition is that the decision ought to be *based solely on automated processing*, meaning that the decision-making process must lack meaningful or effective involvement by a natural person. As previously noted, this provision mandates the inclusion of a human in the loop within ADM systems. In other words, the EU regulatory framework requires a mechanism for *human intervention* in automated processes. This constitutes the first of two governance mechanisms. The second mechanism, referred to as *human out of the loop*, functions as a safeguard that can be activated upon data subjects' request in case Art. 22(2) exceptions are met by the data controller.[88] We will return to this second mechanism further below.

Human intervention, in this context, must be *meaningful*. It can serve either to prevent the application of the Article 22(1) prohibition in semi-automated systems[89] or to act as an appropriate safeguard available at the request of data subjects challenging the result of a lawful fully automated

[88] "There are two kind of human intervention mechanisms in the GDPR. We have distinguished between Article 22(1) GDPR-decisions, that include human intervention as an essential component -in the loop- for decision-making, and Article 22(2) GDPR-decisions based solely on automated processing, that include human intervention as a safeguard -out of the loop- on request." (Guilherme Lazcoz and Paul de Hert, 'Humans in the GDPR and AIA Governance of Automated and Algorithmic Systems. Essential Pre-Requisites against Abdicating Responsibilities' (2023) 50 Computer Law and Security Review <https://doi.org/10.1016/j.clsr.2023.105833>).

[89] Article 29 Data Protection Working Party, 'Guidelines on Automated Individual Decision-Making and Profiling for the Purposes of Regulation 2016/679' (2017) 21.

decision.[90] The EDPB emphasizes that to qualify as meaningful human involvement, the oversight by a human agent must be substantial, "carried out by someone who has the authority and competence to change the decision," going beyond mere tokenism or rubber-stamping.[91] The fabrication of the human involvement by means of introducing a nominal human into the loop[92] or a mere light-touch intervention[93] is inconsistent with EU data protection law. A human agent engaged in meaningful involvement must have the possibility of actively influencing the decision-making process[94] rather than simply endorse machine-generated outcomes due to cognitive biases, for example.

Determine in practice what is and what is not meaningful involvement might be a hard task, notably in scenarios of human-computer collaboration in semi-automated systems. Liane Collana illustrates this in the field of education and automatic assessment. From a socio-technical standpoint, it proves arduous to perceive human decisions and automated assessment technology decisions as isolated events: "the automatic assessment software technologically mediates the

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[90] Article 29 Data Protection Working Party, 'Guidelines on Automated Individual Decision-Making and Profiling for the Purposes of Regulation 2016/679' (2017) 27.

[91] Article 29 Data Protection Working Party, 'Guidelines on Automated Individual Decision-Making and Profiling for the Purposes of Regulation 2016/679' (2017) 21.

[92] Michael Veale and Lilian Edwards, 'Clarity, Surprises, and Further Questions in the Article 29 Working Party Draft Guidance on Automated Decision-Making and Profiling' (2018) 34 Computer Law and Security Review 398, 400.

[93] "If the legal world allows a mere light-touch intervention to qualify as human intervention the whole protective mechanism of Article 22 GDPR falls flat on its face." (Guilherme Lazcoz and Paul de Hert, 'Humans in the GDPR and AIA Governance of Automated and Algorithmic Systems. Essential Pre-Requisites against Abdicating Responsibilities' (2023) 50 Computer Law and Security Review <https://doi.org/10.1016/j.clsr.2023.105833>).

[94] "In order for the decision not to be based solely on automated processing, the human should assess the substance of the decision and not be involved merely as another (empty) procedural step." (Maja Brkan, 'Do Algorithms Rule the World? Algorithmic Decision-Making and Data Protection in the Framework of the GDPR and Beyond' (2019) 27 International Journal of Law and Information Technology 91, 101).

teacher's practices, creating hybrid decisions made by both the human and the software."[95] The distinction between the outcome of an automated assessment, such as a system-generated recommendation to assign a grade of F to a student, and a decision made independently by a teacher to assign the same grade, is not always clear-cut.[96]

The third and final prerequisite for applying Article 22(1) is that the automated decision must produce *legal effects or similarly significantly affect* the data subject. This ensures that only decisions with significant and "serious impactful effects"[97] fall within the scope of the GDPR's prohibition. A legal effect occurs when a decision based solely on automated processing impacts an individual's legal rights, such as their freedom to associate, participate in elections, or initiate legal proceedings. Additionally, a legal effect may involve altering a person's legal status or affecting their rights and duties in a contract.[98]

Whilst the concept of legal effect is relatively straightforward, the phrase "similarly significant affects him or her" is quite vague. In accordance with the EDPB guidelines, the threshold of significance implies similarity to the seriousness of a decision with legal

[95] Liana Colonna, 'Teachers in the Loop? An Analysis of Automatic Assessment Systems under Article 22 GDPR' (2024) 14 International Data Privacy Law 3, 10.
[96] ibid 10.
[97] Article 29 Data Protection Working Party, 'Guidelines on Automated Individual Decision-Making and Profiling for the Purposes of Regulation 2016/679' (2017) 21.
[98] ibid 21.

consequences.[99] The EDPB further elaborates that for data processing to significantly affect an individual, its effects must be sufficiently considerable or important to merit attention.[100]

Interestingly, legal and similarly significant effects can be either negative or positive. Unlike Art. 11 of the LED, which explicitly limits its scope to "adverse" legal effects, the GDPR provision on ADM is neutral regarding the value of a decision's effects.[101] This distinction has led scholars such as Veale and Binns to argue that, by contrasting these two regulatory frameworks, one can infer that "the legislator intended the [Art. 22(1) GDPR] provision to apply to significant effects regardless of their valence."[102] This interpretation underscores the broader applicability of the GDPR in addressing automated decisions that impact individuals, whether positively or negatively.

As a context-dependent concept, the interpretation of what is *significant* will require determining if it is reasonably foreseeable that the automated decision—including those in semi-automated systems—is impactful for some individuals who would be subject to it.[103] For instance,

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[99] ibid 21.

[100] ibid 21.

[101] Similar to the LED legal framework, the AI Act determines that, when it comes to high-risk AI systems, the right to explanation provided for in Art. 86 is triggered only if the decision "affects that person in a way that they consider to have an adverse impact on their health, safety or fundamental rights."

[102] Reuben Binns and Michael Veale, 'Is That Your Final Decision? Multi-Stage Profiling, Selective Effects, and Article 22 of the GDPR' (2021) 11 International Data Privacy Law 319, 328. *See* Francesca Palmiotto, 'When Is a Decision Automated? A Taxonomy for a Fundamental Rights Analysis' (2024) 25 German Law Journal 210, 217-218; Diana Dimitrova, 'The Right to Explanation under the Right of Access to Personal Data: Legal Foundations in and beyond the GDPR' (2020) 6 European Data Protection Law Review 211, 218-219; Gianclaudio Malgieri, 'Automated Decision-Making in the EU Member States: The Right to Explanation and Other "Suitable Safeguards" in the National Legislations' (2019) 35 Computer Law and Security Review.

[103] Reuben Binns and Michael Veale, 'Is That Your Final Decision? Multi-Stage Profiling, Selective Effects, and Article 22 of the GDPR' (2021) 11 International Data Privacy Law 319, 327.

distinguishing between different types of exams and assessments is crucial when analyzing the significance of the effects of AI-based automatic assessment systems on students.[104] Also, awareness about the situation of vulnerability of data subjects, or groups of data subjects, affected by the ADM system is very important.[105] Data subjects in position of vulnerability are more likely to suffer the effects of automated decisions, as they are at greater risk of harm and the violation of their (fundamental) rights—for example, in the context of ADM systems used for border control and migration management[106].

Compared with the other two legal conditions in Article 22(1), this criterion is arguably the "key threshold question"[107] that entities utilizing ADM systems in the EU must address when evaluating the potential applicability of this provision.

Safeguarding data subjects' rights against fully automated decisions

[104] Liana Colonna, 'Teachers in the Loop? An Analysis of Automatic Assessment Systems under Article 22 GDPR' (2024) 14 International Data Privacy Law 3, 14.

[105] Article 29 Data Protection Working Party, 'Guidelines on Automated Individual Decision-Making and Profiling for the Purposes of Regulation 2016/679' (2017) 22; Lee A Bygrave, 'Article 22 [Automated individual decision-making, including profiling]' in Christopher Kuner, Lee A Bygrave and Christopher Docksey (eds.) *The EU General Data Protection Regulation (GDPR) – A Commentary* (Oxford University Press 2020) 535; Maja Brkan, 'Do Algorithms Rule the World? Algorithmic Decision-Making and Data Protection in the Framework of the GDPR and Beyond' (2019) 27 International Journal of Law and Information Technology 91, 103; Veale M and Edwards L, 'Clarity, Surprises, and Further Questions in the Article 29 Working Party Draft Guidance on Automated Decision-Making and Profiling' (2018) 34 Computer Law and Security Review 398, 402 <https://doi.org/10.1016/j.clsr.2017.12.002>. On the notion of vulnerability in the EU data protection law, *see* Gianclaudio Malgieri, *Vulnerability and Data Protection Law* (Oxford University Press 2023).

[106] Francesca Palmiotto, 'When Is a Decision Automated? A Taxonomy for a Fundamental Rights Analysis' (2024) 25 German Law Journal 210, 217.

[107] Peter AE Davis and Sebastian F Schwemer, 'Rethinking Decisions under Article 22 of the GDPR: Implications for Semi-Automated Legal Decision-Making' (2023) 3423 CEUR Workshop Proceedings 81.

Art. 22(2) of the GDPR allows for exceptions to the Art. 22(1) general prohibition under certain circumstances. These include cases where the decision (i) is necessary for entering into or performing a contract between the data subject and the data controller, (ii) is authorized by Union or Member State law, or (iii) is based on the data subject's explicit consent. In such instances, the lawful use of ADM systems by data controllers must be accompanied by appropriate safeguards to protect the rights, freedoms, and legitimate interests of data subjects.[108]

This requirement includes a non exhaustive list of rights or appropriate safeguards,[109] such as the rights to obtain human intervention, to express one's point of view and to contest the decision. Recital 71 of the GDPR emphasizes the need for suitable safeguards against potential risks associated with ADM processes that have legal or significant effects. It denotes the importance of implementing measures that ultimately will forward fairness, transparency and accountability in ADM.

The right to obtain human intervention constitutes what can be described as the second form of human intervention provided for in the GDPR: the human out of the loop mechanism. This mechanism differs from the *human in the loop* approach in that the distinction lies in the timing of the human involvement—whether it occurs before or after the decision made by the algorithmic system. Under the legal bases of Article 22(2), the system operates and adopts decisions without

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[108] Art. 22(3) and (4) of the GDPR. *See* Maja Nišević and others, 'Understanding the legal bases for automated decision-making under the GDPR' in Eleni Kosta, Ronald Leenes and Irene Kamara (eds.) *Research Handbook on EU Data Protection Law* (Edward Elgar 2022) 440.

[109] Lee A Bygrave, 'Article 22 [Automated individual decision-making, including profiling]' in Christopher Kuner, Lee A Bygrave and Christopher Docksey (eds.) *The EU General Data Protection Regulation (GDPR) – A Commentary* (Oxford University Press 2020) 538; Article 29 Data Protection Working Party, 'Guidelines on Automated Individual Decision-Making and Profiling for the Purposes of Regulation 2016/679' (2017) 32.

human intervention by default, meaning there is no human in the loop. A human out of the loop safeguard, or the right to obtain human intervention, "can be defined as a second-step review of the automated decision,"[110] activated upon the data subject's request.[111-112]

The rights to express one's point of view and to contest an automated decision are best understood as complementary safeguards, as Gianclaudio Malgieri posits.[113] Contestation allows the data subject to challenge or dispute a decision, while the right to express one's point of view enables the data subject to provide arguments or reasoning as to why the decision is inadequate or incorrect.

An intense debate sparked across the EU and beyond regarding whether the GDPR ensures a *right to explanation* as a safeguard in cases where Article 22(2) applies. Although the EU regulation does not literally and explicitly grant a legal right to explanation, Recital 71 suggests the development of mechanisms that allow individuals to understand the rationale behind algorithmic decisions that affect them. This issue has sparked considerable scholarly discussion.

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[110] Guilherme Lazcoz and Paul de Hert, 'Humans in the GDPR and AIA Governance of Automated and Algorithmic Systems. Essential Pre-Requisites against Abdicating Responsibilities' (2023) 50 Computer Law and Security Review <https://doi.org/10.1016/j.clsr.2023.105833>.

[111] Maja Brkan refers to this safeguard as a right to be exercised at the "request that the fully automated decision becomes non-automated through human intervention." (Maja Brkan, 'Do Algorithms Rule the World? Algorithmic Decision-Making and Data Protection in the Framework of the GDPR and Beyond' (2019) 27 International Journal of Law and Information Technology 91, 107).

[112] "The data subject's right to obtain human intervention of the data controller in the decision-making is one of the most important safeguards, explicitly mentioned in many Member States law. This right is explicitly recognized in several Member States laws (Belgian law, which mentions just this safeguard, but also Dutch, German, Irish, Hungarian law) and indirectly mentioned also in the UK Data Protection Act 2018 ('the right to request the controller to take a new decision that is not based solely on automated processing')." (Gianclaudio Malgieri, 'Automated Decision-Making in the EU Member States: The Right to Explanation and Other "Suitable Safeguards" in the National Legislations' (2019) 35 Computer Law and Security Review).

[113] ibid.

Some scholars argue for recognizing a new right to algorithmic explanation,[114] while others adopt a more skeptical stance, emphasizing the limitations of the GDPR provisions[115] and concluding that data subjects' rights are more constrained than anticipated, with no real right to explanation.[116] A third group proposes a contextual interpretation of Articles 13–15 and 22, arguing that these provisions, when read together, uphold a right to explanation grounded in the GDPR's core principles of transparency and accountability.[117]

The prevailing scholarly interpretation towards the existence of a right to explanation follow two hermeneutic approaches to deduce this right to from the GDPR legal text[118]: the first relies directly on Art. 22(3) GDPR safeguards combined with Recital 71;[119] the second rests on the

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[114] Bryce Goodman and Seth Flaxman, 'European Union Regulations on Algorithmic Decision-Making and a 'Right to Explanation'' (2016) 38 AI Magazine 50 <https://doi.org/10.1609/aimag.v38i3.2741>.

[115] Lilian Edwards and Michael Veale, 'Slave to the Algorithm? Why a "Right to an Explanation" Is Probably Not the Remedy You Are Looking For' (2017) 16 Duke Law & Technology Review 18.

[116] Sandra Wachter, Brent Mittelstadt and Luciano Floridi, 'Why a Right to Explanation of Automated Decision-Making Does Not Exist in the General Data Protection Regulation' (2017) 7 International Data Privacy Law 76; Sandra Wachter, Brent Mittelstadt and Chris Russell, 'Counterfactual Explanations Without Opening the Black Box: Automated Decisions and the GDPR' (2018) 31 Harvard Journal of Law & Technology 841.

[117] Andrew Selbst and Julia Powles, 'Meaningful Information and the Right to Explanation' (2017) 7 International Data Privacy Law 233; Gianclaudio Malgieri and Giovanni Comandé, 'Why a Right to Legibility of Automated Decision-Making Exists in the General Data Protection Regulation' (2017) 7 International Data Privacy Law 243; Maja Brkan, 'Do Algorithms Rule the World? Algorithmic Decision-Making and Data Protection in the Framework of the GDPR and Beyond' (2019) 27 International Journal of Law and Information Technology 91, 112; Margot E Kaminski, 'The Right to Explanation, Explained' (2019) 34 Berkeley Technology Law Journal 189; Diana Dimitrova, 'The Right to Explanation under the Right of Access to Personal Data: Legal Foundations in and beyond the GDPR' (2020) 6 European Data Protection Law Review 211; Lee A Bygrave, 'Article 22 [Automated individual decision-making, including profiling]' in Christopher Kuner, Lee A Bygrave and Christopher Docksey (eds.) *The EU General Data Protection Regulation (GDPR) – A Commentary* (Oxford University Press 2020) 538; Claude Castelluccia and Daniel Le Métayer, 'Understanding algorithmic decision-making: opportunities and challenges' (European Parliament 2019) <https://www.europarl.europa.eu/RegData/etudes/STUD/2019/624261/EPRS_STU(2019)624261_EN.pdf#page=70.08> accessed 15 January 2025.

[118] Ljubiša Metikoš and Jef Ausloos, 'The Right to an Explanation in Practice: Insights from Case Law for the GDPR and the AI Act' (2024) Available at SSRN <https://ssrn.com/abstract=4996173>.

[119] Recital 71 of the GDPR reads: "[...] any case, such processing should be subject to suitable safeguards, which should include specific information to the data subject and the right to obtain human intervention, to express his or her

right to "meaningful information about the logic involved", present in Arts. 13–15 and 22(3) of the GDPR. The first position is criticized because it hinges on the fragile support of a recital, not in legal text. According to CJEU precedents recitals are not binding.[120-121] Conversely, the second approach argues for an interpretative value of recital 71[122] in a systematic reading of transparency rights and notification obligations to give "meaningful information about the logic involved, as well as the significance and the envisaged consequences" inscribed in Arts. 13(2)(f), 14(2)(g) and 15(1)(h), associated with the appropriate safeguards requirement under Art. 22(3) of the GDPR.[123]

Interestingly, scholars defending this systematic interpretation are backed by the EDPB justification of the right to contest an automated decision. The EDPB asserts that "the data subject will only be able to challenge a decision or express their view if they fully understand how it has been made and on what basis."[124] A very strong argument can be made that the goal of the right to explanation is connected to the *contestability* of ADM systems. The possibility (or 'affordance') of contesting automated decisions is predicated upon the data subject's capacity to comprehend the

point of view, *to obtain an explanation of the decision reached after such assessment* and to challenge the decision." (italics added).

[120] CJEU, Giuseppe Manfredi v. Regione Puglia, Case C-308/97, Judgment of 25 November 1998, paras 29–30; CJEU, Criminal Proceedings against Nilsson, Hagelgren & Arrborn, Case C-162/97, Judgment of 19 November 1998, para 54.

[121] Sandra Wachter, Brent Mittelstadt and Luciano Floridi, 'Why a Right to Explanation of Automated Decision-Making Does Not Exist in the General Data Protection Regulation' (2017) 7 International Data Privacy Law 76; Sandra Wachter, Brent Mittelstadt and Chris Russell, 'Counterfactual Explanations Without Opening the Black Box: Automated Decisions and the GDPR' (2018) 31 Harvard Journal of Law & Technology 841; Ljubiša Metikoš and Jef Ausloos, 'The Right to an Explanation in Practice: Insights from Case Law for the GDPR and the AI Act' (2024) Available at SSRN <https://ssrn.com/abstract=4996173>.

[122] Gianclaudio Malgieri and Giovanni Comandé, 'Why a Right to Legibility of Automated Decision-Making Exists in the General Data Protection Regulation' (2017) 7 International Data Privacy Law 243, 254-255.

[123] As we will see below, in the Case C–203/22 *CK v Dun & Bradstreet*, the CJEU adopted this interpretation.

[124] Article 29 Data Protection Working Party, 'Guidelines on Automated Individual Decision-Making and Profiling for the Purposes of Regulation 2016/679' (2017) 27.

rationale underpinning the system's output and/or decision.[125] Bayamlıoğlu, Lazcoz, and de Hert contend that contestation, rather than human intervention (human out of the loop mechanism), forms the cornerstone of the safeguards under Article 22(3) and should inform a teleological interpretation of the provision.[126]

One last point of contention that worth noting in this quite abridged account on the right to explanation debate at the EU level relates to the type(s) of explanation(s) data subjects should receive or have access to, whether it ought to be general (or model-centric or global) and/or specific (subject-centric or local). The general explanation type relates to the system as a whole, whilst the specific explanation type relates to the specific decisions being made. Some scholars have argued that only descriptions of the general ADM system functionality need to be disclosed.[127] They argue this on the basis of Arts. 13(2)(f) and 14(2)(g) of the GDPR being *ex ante* rights. These provisions

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[125] Ljubiša Metikoš and Jef Ausloos, 'The Right to an Explanation in Practice: Insights from Case Law for the GDPR and the AI Act' (2024) Available at SSRN <https://ssrn.com/abstract=4996173>; Margot E Kaminski and Jennifer M Urban, 'The Right to Contest AI' (2021) 121 Columbia Law Review 1957, 1979-1980; Marco Almada, 'Human Intervention in Automated Decision-Making: Toward the Construction of Contestable Systems', Proceedings of the Seventeenth International Conference on Artificial Intelligence and Law (Association for Computing Machinery 2019) <https://doi.org/10.1145/3322640.3326699> accessed 11 January 2025; Emre Bayamlıoğlu, 'The Right to Contest Automated Decisions under the General Data Protection Regulation: Beyond the so-Called "Right to Explanation"' [2021] Regulation and Governance 1 <https://doi.org/10.1111/rego.12391>; Guilherme Lazcoz and Paul de Hert, 'Humans in the GDPR and AIA Governance of Automated and Algorithmic Systems. Essential Pre-Requisites against Abdicating Responsibilities' (2023) 50 Computer Law and Security Review <https://doi.org/10.1016/j.clsr.2023.105833>.

[126] Emre Bayamlıoğlu, 'The Right to Contest Automated Decisions under the General Data Protection Regulation: Beyond the so-Called "Right to Explanation"' [2021] Regulation and Governance 1 <https://doi.org/10.1111/rego.12391>; Guilherme Lazcoz and Paul de Hert, 'Humans in the GDPR and AIA Governance of Automated and Algorithmic Systems. Essential Pre-Requisites against Abdicating Responsibilities' (2023) 50 Computer Law and Security Review <https://doi.org/10.1016/j.clsr.2023.105833>. Contrary to this view, *see* Sandra Wachter, Brent Mittelstadt and Chris Russell, 'Counterfactual Explanations Without Opening the Black Box: Automated Decisions and the GDPR' (2018) 31 Harvard Journal of Law & Technology 841, 874.

[127] Sandra Wachter, Brent Mittelstadt and Luciano Floridi, 'Why a Right to Explanation of Automated Decision-Making Does Not Exist in the General Data Protection Regulation' (2017) 7 International Data Privacy Law 76, 83-85; Sandra Wachter, Brent Mittelstadt and Chris Russell, 'Counterfactual Explanations Without Opening the Black Box: Automated Decisions and the GDPR' (2018) 31 Harvard Journal of Law & Technology 841, 867-868.

require the data controller to provide information about the logic involved and expected consequences of the processing to the data subject. They, then, discard the existence of a right to an explanation of the automated decision, mainly because the relevant text in the *ex post* right Art. 15(1)(h) is identical to the texts in *ex ante* rights in Arts. 13(2)(f) and 14(2)(g). The EDPB guidance is utilized to endorse the argument, given its affirmation that Art. 15(1)(h) "says that the controller should provide the data subject with information about the *envisaged consequences* of the processing, rather than an explanation of a *particular* decision."[128]

Nevertheless, a majority of legal scholars maintain that the right to explanation encompasses both general and specific explanations. Recent EDPB guidance on the right of access suggests a shift in its stance on Art. 15(1)(h). The guidance states that, whenever possible, information under this provision "*has to be more specific in relation to the reasoning that lead to specific decisions concerning the data subject who asked for access.*"[129] (italics added).

All in all, in the EU data protection law sphere, there is a hermeneutic construction that underpins the application of the right to explanation as an appropriate safeguard, alongside the other explicit safeguards delineated in Art. 22(3) of the GDPR, as will be demonstrated in Section 4.1. Furthermore, at the legislative level, certain Member States have enshrined this right in their national legislation, drawing upon Art. 22(2)(b) GDPR, for example, France, and the EU itself passed the AI Act with a clear provision on an individual right to explanation in Art. 86.

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[128] Article 29 Data Protection Working Party, 'Guidelines on Automated Individual Decision-Making and Profiling for the Purposes of Regulation 2016/679' (2017) 27.

[129] EDPB, 'Guidelines 01/2022 on data subject rights - Right of access' (2023) 40 <https://www.edpb.europa.eu/system/files/2023-04/edpb_guidelines_202201_data_subject_rights_access_v2_en.pd> accessed 17 January 2025.

3.2. ADM regulation under the Brazilian legal system

The core of ADM regulation in Brazil: Art. 20 of the LGPD

The first piece of legislation to cover ADM under the Brazilian jurisdiction was enacted in 2011 as Law nº 12.414, also known as Positive Credit Registry Act (*Lei do Cadastro Positivo* – LCP)[130]. In the context of credit and financial systems, the LCP is complementary to the Consumer Protection Code – CDC[131] and refers to a framework that keeps track of consumers' positive credit behavior, so that financial institutions can create a credit history with a set of financial and payment data relating to credit operations and payment obligations either concluded or pending (Art. 3, LCP). This credit information is then processed to assess creditworthiness, which can be used to make decisions about granting or denying loans as well as other financial services. Despite not specifically regulating credit scoring systems – according to the Superior Court of Justice (STJ) binding precedent *Recurso Especial n. 1.419.697*[132] –, the LCP occupies a pivotal role in shaping how Brazilian institutions govern the utilization of this kind of algorithmic system.[133]

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[130] *Lei nº 12.414, de 9 de junho de 2011*. Disciplina a formação e consulta a bancos de dados com informações de adimplemento, de pessoas naturais ou de pessoas jurídicas, para formação de histórico de crédito <https://www.planalto.gov.br/ccivil_03/_ato2011-2014/2011/lei/l12414.htm?rel=outbound> accessed 01 March 2024.

[131] *Lei nº 8.078, de 11 de setembro de 1990*. Dispõe sobre a proteção do consumidor e dá outras providências <http://www.planalto.gov.br/ccivil_03/leis/l8078compilado.htm> accessed 01 March 2024.

[132] *Recurso Especial nº 1.419.697/RS* [2014] Superior Court of Justice <https://scon.stj.jus.br/SCON/GetInteiroTeorDoAcordao?num_registro=201303862850&dt_publicacao=17/11/2014> accessed 21 May 2024.

[133] Juliano Maranhão and Ricardo R Campos, 'Proteção de Dados de Crédito na Lei Geral de Proteção de Dados' (2019) 16 Revista Direito Público 132. See also Laura S Mendes and Marcela Mattiuzzo, 'Algorithms and Discrimination: The Case of Credit Scoring in Brazil' in Marion Albers and Ingo W Sarlet (eds.), *Personality and Data Protection Right on the Internet – Brazilian and German Approaches* (Springer 2022) 407-443.

Remarkably, Brazilian policymakers incorporated the influence of European data protection law into this legislation.[134] The legal text underscores the safeguarding of principles such as purpose limitation, data quality and necessity. Mandates within the LCP stipulate that collected and stored personal data must be accurate – construed as "objective, clear, truthful and easily understandable information" – and relevant to the "assessment of the economic situation of the registered person" (Art. 3, § 1 LCP) or the "credit risk to the consumer" (Art. 3, § 3, I LCP). Data irrelevant to these specified purposes is deemed excessive or unnecessary, thereby proscribed from processing (Art. 3, § 3, I LCP), paralleling the prohibition of using sensitive personal data[135] for assessing consumer credit risk (Art. 3, § 3, II, LCP).

As to the individual rights accorded to consumers before users of credit history databases, a provision germane to ADM surfaces in Art. 5, VI LCP. This clause affords consumers the right to "request the consulting business to review a decision made exclusively by automated means," thereby delineating a right to review fully automated decisions taken by financial institutions or other enterprises with access to credit information.[136] Additionally, Art. 5, IV, establishes the right

[134] Leonardo R Bessa, *Cadastro positivo: comentários à Lei 12.414, de 09 de junho de 2011* (Revista dos Tribunais . 2011) 91-94; Laura S Mendes and Marcela Mattiuzzo, 'Algorithms and Discrimination: The Case of Credit Scoring in Brazil' in Marion Albers and Ingo W Sarlet (eds.), *Personality and Data Protection Right on the Internet – Brazilian and German Approaches* (Springer 2022) 428.

[135] The LCP defines sensitive data as information pertaining to social and ethnic origin, health, genetic makeup, sexual orientation and political, religious and philosophical convictions.

[136] Leonardo R Bessa, *Cadastro positivo: comentários à Lei 12.414, de 09 de junho de 2011* (Revista dos Tribunais . 2011) 116-117; Victor D Silveira, 'O uso de dados alternativos para a elaboração de escores de crédito no Brasil: das promessas aos perigos' in J Oms (ed.), *O consumidor na era da pontuação de crédito* (Casa do Direito 2023) 275–296.

of access to principal elements and criteria utilized in risk analysis, excluding information classified as trade secrets. Some scholars link this provision to a "right to explanation."[137]

Notwithstanding the importance of such legal protection for consumers in the financial sector, this provision on ADM has not been of much use in practice.[138] The actual hallmark of the regulation of ADM systems surfaced not until the passing of the LGPD (2018) and its coming into force (2020).[139] Art. 20 of the LGPD reads as follows:

> The data subject has the right to request for the review of decisions made solely based on automated processing of personal data affecting their interests, including decisions intended to define their personal, professional, consumer and credit profile, or aspects of their personality.

A literal analysis of the text reveals three conditions necessary for the application of the legal provision: (i) a decision must be made, (ii) solely based on the automated processing of personal data, and (iii) affecting the relevant interests of the data subjects.

The concept of a decision within the context of ADM systems remains underexplored by Brazilian scholars. Current debates suggest that the term has a broad meaning, but scholars diverge.

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[137] TMM de Lima and MF Freire de Sá, 'Inteligência Artificial e Lei Geral de Proteção de Dados Pessoais: O Direito à Explicação nas Decisões Automatizadas' (2020) 26 Revista Brasileira de Direito Civil 227; Renato L Monteiro and Sinuhe N Cruz, 'Desafios da Transparência e Direito à Informação no Desenvolvimento de Algoritmos de *Credit Scoring*: Uma Análise sob a Ótica do Devido Processo Informational' in J Oms (ed), *O Consumidor Na Era Da Pontuação de Crédito* (Casa do Direito 2022) 170.

[138] For instance, during the process of writing this paper, no results were found in a search conducted specifically for Art. 5 VI LCP in the database of the STJ website (www.stj.jus.br).

[139] The Brazilian General Data Protection Law, enacted in August 2018, was implemented in stages. Most provisions came into effect on September 18, 2020. However, the administrative sanctions chapter, governing penalties for non-compliance, only entered into force on August 1, 2021. This phased approach allowed organizations time to align their practices with the new legal framework.

One interpretative perspective posits that the concept encompasses the results of machine operations, irrespective of whether these operations are formalised and institutionalised. This interpretation theoretically covers a wide range of scenarios, from the refusal of a loan through a credit scoring system that classifies the applicant as high risk, to the recommendation of products and services in an e-commerce platform. To put it another way, this view is broad enough to potentially comprehend all types of AI systems' outputs.

Conversely, referencing the work of Veale and Edwards, Maria Regina Korkmaz suggests that not all outputs of AI-based ADM systems, such as predictions, can be effectively translated into actionable decisions.[140] A similar approach is adopted by Marco Almada and Juliano Maranhão.[141] However, a significant caveat is introduced, thereby establishing a third and more restrictive approach. They further conceptualise decisions as a specific type of AI output, excluding recommendation system outputs such as newsfeed updates, despite these systems potentially affecting data subjects' interests similarly to fully automated decisions. No further justification is given for why actionable decisions based on recommendations are preemptively excluded from the scope of Art. 20.[142]

The second condition established in Art. 20 of the LGPD is that the decision must result solely from automated processing. This implies integration into a chain of processing operations carried out without significant human intervention – i.e., without a *human in the loop mechanism*.

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[140] Maria Regina R Korkmaz, *Decisões automatizadas: explicação, revisão e proteção na era da inteligência artificial* (Thomson Reuters Brasil 2023) 262.
[141] Marco Almada and Juliano Maranhão, 'Contribuições e limites da Lei Geral de Proteção de Dados para a regulação da inteligência artificial no Brasil' (2023) 20 Direito Público 385, 389.
[142] ibid 394.

Caitlin Mulholland and Isabella Frajhof argue that this refers to a decision taken without any human intervention that could alter its final outcome.[143] In the same vein, some scholars uphold that the real and active influence of the individual (or group of individuals) over the automated decision-making process is secured only if the following factors are taken into account: (i) fabrication of human intervention, (ii) automation bias, (iii) "interpretability" of the AI system and (iv) the relative independence of the human reviewer.[144] Factors (i) to (iii) and their roles in assessing the quality of human involvement in ADM systems were explained in Section 2. The fourth factor means that the reviewer or intervener must have a certain degree of independence to effectively change the automated decision without being subject to negative consequences or internal retaliation from the data controller.

The majority of legal scholars support this interpretation, emphasizing that the absence of meaningful human involvement is crucial for the applicability of ADM regulation in Brazil. Actually, in underscoring the real influence the human agent must have over the decision-making process, which is evaluated based on factors such as the agent's competence and authority, most scholars refer to the EDPB guidelines on ADM and European legal doctrine to bolster their arguments.[145]

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[143] Caitlin Mulholland and Isabella Z Frajhof, 'Inteligência artificial e Lei Geral de Proteção de Dados Pessoais: breves anotações sobre o direito à explicação perante a tomada de decisões por meio de *machine learning*' in Ana Frazão and Caitlin Mulholland (eds), *Inteligência artificial e Direito: ética, regulação e responsabilidade* (Revista dos Tribunais 2019) 275.

[144] *See* Maria Regina R Korkmaz, *Decisões automatizadas: explicação, revisão e proteção na era da inteligência artificial* (Thomson Reuters Brasil 2023) 255-267; Núria Lopez, 'Decisões automatizadas: o futuro regulatório de inteligência artificial' in D S L Francoski and F A Tasso (Eds.) *A Lei Geral de Proteção de Dados Pessoais: Aspectos Práticos e Teóricos Relevantes no Setor Público e Privado* (Thomson Reuters Brasil 2021) 851.

[145] Renato L Monteiro, 'Desafios para a efetivação do direito à explicação na Lei Geral de Proteção de Dados do Brasil' (Doctoral Thesis, Universidade de São Paulo, 2022); NCM Reis and GR Furtado, 'Decisões Automatizadas :

The third and final legal requirement set forth in Art. 20 is that the decision in question must affect the "interests" of the data subject. This condition ensures that only decisions with significant implications for individuals are subject to regulatory scrutiny. Notably, the wording differs from that of GDPR Art. 22, which requires that the automated decision "produces legal effects" concerning the data subject or "similarly significantly affects" him or her. Initially, the LGPD legal text indicates a broader conceptualisation of the effects brought about by the decision. The legislation goes as far as exemplifying cases in which relevant interests may be affected, such as in *application* of personal, professional, consumer and credit profiles.[146]

If we take the term at face value, it could be interpreted as encompassing a vast array of economic interests that are not directly relevant from a legal standpoint. For instance, from this perspective, the automatic online issuance of discount tickets as part of a mall Christmas marketing effort could be seen as affecting consumer interest in obtaining the best possible discount rates. Although Brazilian data protection scholars have not been explicit about the understanding of the notion of "interest," there is a trend of interpreting the concept as a *legally relevant or legally*

Definição , Benefícios e Riscos' (2022) 11 Civilistica.com 1 http://civilistica.com/decisoes- automatizadas/; Maria Regina R Korkmaz, *Decisões automatizadas: explicação, revisão e proteção na era da inteligência artificial* (Thomson Reuters Brasil 2023); MBB Fernandes and CHM Baptista de Oliveira, 'O Artigo 20 da LGPD e os desafios interpretativos ao direito à revisão das decisões dos agentes de tratamento pelos titulares de dados' (2020) 8 Revista de Direito e as Novas Tecnologias 1.

[146] We understand profiling as a technique in which personal data is automatically or semi-automatically processed. There are at least two steps to this process: profile creation and profile application. According to Bosco and others, "[p]rofiling is a technique of (partly) automated processing of personal and/or non-personal data, aimed at producing knowledge by inferring correlations from data in the form of profiles that can subsequently be applied as a basis for decision-making. A profile is a set of correlated data that represents a (individual or collective) subject. Constructing profiles is the process of discovering unknown patterns between data in large data sets that can be used to create profiles. Applying profiles is the process of identifying and representing a specific individual or group as fitting a profile and of taking some form of decision based on this identification or representation." (Francesca Bosco and others, 'Profiling Technologies and Fundamental Rights. An Introduction' in Niklas Creemers, Daniel Guagnin and Bert Jaap Koops (eds), *Profiling Technologies in Practice: Applications and Impact on Fundamental Rights and Values* (Wolf Legal Publishers 2017) 9).

protected interest.[147] In practice, it means that this condition is met even in situations in which a subjective right (*"direito subjetivo"*) is not at stake or interfered with, but there is at least a legally protected interest, such as in the examples or profile application set forth by Art. 20 of the LGPD.

Legally protected interests, interestingly, can be either individual or collective.[148] This raises the question of whether Art. 20 of the LGPD applies to algorithmic outcomes derived from automated processing of group data that ultimately affect individuals. As an example, one could mention the protected interests of job seekers against unlawful recruiting discriminatory practices based on gender or ethnicity provided for by Law nº 9,029, of April 13th of 1995.[149] Discriminatory outcomes may result from processing individually identifiable data or proxy group data associated with protected categories (e.g., ZIP code might work as a proxy for race), depending on the design and functioning of the ADM system in question.[150]

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[147] See DSS Hosni and PBL Martins, 'Tomada de Decisão Automatizada e Regulamentação Da Proteção de Dados: Alternativas Coletivas Oferecidas Pela Lei Geral de Proteção de Dados Pessoais' (2020) 1 Internet & Sociedade 77. 90; Caitlin Mulholland and Isabella Z Frajhof, 'Inteligência artificial e Lei Geral de Proteção de Dados Pessoais: breves anotações sobre o direito à explicação perante a tomada de decisões por meio de *machine learning*' in Ana Frazão and Caitlin Mulholland (eds), *Inteligência artificial e Direito: ética, regulação e responsabilidade* (Revista dos Tribunais 2019) 281; Marco Almada and Juliano Maranhão, 'Contribuições e limites da Lei Geral de Proteção de Dados para a regulação da inteligência artificial no Brasil' (2023) 20 Direito Público 385, 391. Korkmaz adopts a different perspective. In addition to using a GDPR-like language ("legal effects"), she argues that the effects over the data subjects' legal sphere ought to be *negative* (Maria Regina R Korkmaz, *Decisões automatizadas: explicação, revisão e proteção na era da inteligência artificial* (Thomson Reuters Brasil 2023) 280).

[148] *See* in general, JO Ascensão, *Direito Civil – Teoria Geral* (v3, Coimbra Editora 2002) 106-120.

[149] *Lei nº 9.029 de 13 de abril de 1995* Proíbe a exigência de atestados de gravidez e esterilização, e outras práticas discriminatórias, para efeitos admissionais ou de permanência da relação jurídica de trabalho, e dá outras providências <https://www.planalto.gov.br/ccivil_03/leis/l9029.htm#:~:text=LEI%20N%C2%BA%209.029%2C%20DE%2013,trabalho%2C%20e%20d%C3%A1%20outras%20provid%C3%AAncias.> accessed 01 August 2024. On the theoretical underpinnings of what a subjective right and a legally protect interest are, *see* EN de Souza, 'Situações Jurídicas Subjetivas: Aspectos Controversos' (2015) 1 Civilistica.com 1 <https://civilistica.emnuvens.com.br/redc/article/view/207/169> accessed 01 August 2024; JO Ascensão, *Direito Civil - Teoria Geral* (v3, Coimbra Editora 2002).

[150] *See* DC Machado, 'The Protection of Vulnerable Algorithmic Groups through Collective Data Protection in the Onlife World: A Brazilian Perspective' (2024) 54 Computer Law and Security Review <https://doi.org/10.1016/j.clsr.2024.106027>. In the context of group data and collective interests, some Brazilian

In a public consultation on AI and the review of automated decisions released in late 2024, the Brazilian DPA included a series of questions addressing ADM systems, particularly those employing AI, and their implications for data subjects' rights. In its introductory remarks, the DPA highlighted that one of the central issues posed by these systems is their potential to "produce *legal effects or significantly impact the interests of individuals*."[151] It further noted that the LGPD establishes the "right to understand the criteria" underlying an automated decision and the "right to request a review [...] to prevent or mitigate errors, biases, or unlawful or abusive discrimination that may result from automated decisions that *negatively affect the individual*."

While these statements do not carry the weight of official regulatory guidance, they provide insight into how the Brazilian DPA sees one of Art. 20's prerequisites. Notably, the DPA departs from the literal text of the LGPD ("interests") to adopt language more closely aligned with the GDPR, referencing "legal effects" and "significant impacts." Additionally, it qualifies the third

scholars advocate for an interpretation of Art. 12, § 2, of the LGPD that extends the scope of data protection law to the earlier stages of ML-based profiling processes, such as model and profile creation. Although not directly related to ADM systems like Article 20, this provision could potentially apply to the development phases of multi-stage profiling systems. Art. 12, § 2, stipulates that anonymized data can fall under the scope of data protection law if used to construct a behavioral profile "of a particular natural person, if that person is identified." Nonetheless, the literal interpretation of this provision creates a seeming paradox: anonymized data, by definition, is excluded from the legal regime governing personal data. Applying this rule to situations where anonymized data is processed to create specific profiles of precisely *identified* individuals challenges this exclusion. This specific profile creation pertains to an individual, as it is derived upon the processing his or her personal information. To ensure the relevance of this provision in the context of algorithmic profiling, it should be construed to include the development of group profiles generated by algorithmic profiling systems (e.g., credit scoring systems). There is no similar provision in the EU GDPR. For a different perspective, making the case that only individual interests trigger the right to revision, *see* Marco Almada and Juliano Maranhão, 'Contribuições e limites da Lei Geral de Proteção de Dados para a regulação da inteligência artificial no Brasil' (2023) 20 Direito Público 385, 395.

[151] ANPD, *Tomada de Subsídios: Inteligência Artificial e Revisão de Decisões Automatizadas* <https://www.gov.br/participamaisbrasil/tomada-de-subsidios-inteligencia-artificial-e-revisao-de-decisoes-automatizadas> accessed 17 January 2025.

condition by emphasizing interests that are negatively affected, signaling a focus on safeguarding data subjects from adverse consequences of ADM systems.

Data subjects' rights in the context of ADM: right to review and right to explanation

Once an ADM meets all these three criteria it triggers the data subject's claim to a right to revision. This right serves to challenge and defend, and may be conceived of as a form of contestation that necessitates a critical review of the factors, inferences and reasons that underpin the fully automated decision.[152] The exercise of the right to review does not guarantee a change in the result;[153] however, it does provide a means of temporarily neutralizing the effects of the decision while the review is underway.[154] Furthermore, the outcome of the review may have implications for the data subject's (legal) interests.

The first version of the LGPD's bill mentioned specifically that the review of automated decisions should be carried out by humans. The idea was to avoid automated reviews that resulted necessarily in the same result as the previous decision that gave cause to the right to review. The revision analysis had to be carried out by a natural person, in accordance with the provisions of the regulations of the ANPD, which should take into account the nature and size of the data controller or the volume of data processing operations.

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[152] *See* Carlos A Souza, Christian Perrone and Eduardo Magrani, 'O direito à explicação entre a experiência europeia e a sua positivação na LGPD' in Danilo Doneda and others (Eds.), *Tratado de proteção de dados pessoais* (Forense 2021) 266; Marco Almada and Juliano Maranhão, 'Contribuições e limites da Lei Geral de Proteção de Dados para a regulação da inteligência artificial no Brasil' (2023) 20 Direito Público 385, 394-395.

[153] Caitlin Mulholland and Isabella Z Frajhof, 'Inteligência artificial e Lei Geral de Proteção de Dados Pessoais: breves anotações sobre o direito à explicação perante a tomada de decisões por meio de *machine learning*' in Ana Frazão and Caitlin Mulholland (eds), *Inteligência artificial e Direito: ética, regulação e responsabilidade* (Revista dos Tribunais 2019) 281.

[154] Maria Regina R Korkmaz, *Decisões automatizadas: explicação, revisão e proteção na era da inteligência artificial* (Thomson Reuters Brasil 2023) 346.

The original text was approved by Congress containing this provision,[155] but then was vetoed by then President Jair Bolsonaro, under the argument that the text, by providing that any and all decisions based solely on automated processing were subject to human review, was "contrary to public interest, given that such a requirement will make the current business models of many companies, notably startups, unfeasible, as well as impacting the analysis of credit scoring and new business models of financial institutions."[156] The pervasive idea of a supposedly negative effect on innovation and business activities due to data subjects' rights, although long-overcome in academia,[157] still resonated with a more economic liberal-leaning government and the veto was subsequently sustained in Congress.

The removal of the clause explicitly requiring human review ignited a vigorous debate among scholars concerning the nature of the review process: must it be conducted by a human, or can it be performed by a machine?[158] The majority of the scholarly work that has emerged since then argues for the importance of the review being the responsibility of a human.[159] This means

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[155] During the legislative procedure in Congress regarding the Interim Executive Order nº 879 of 2018, a third paragraph was introduced in Art. 20 of the LGPD. It reads as follows: "Art. 20. [...] § 3º The review referred to in the heading of this article must be carried out by a natural person, as provided for in regulations of the national authority, which will take into account the nature and size of the organization or the volume of data processing operations."

[156] President's General Secretary, Message 288, of 8 July [2019] <https://www.planalto.gov.br/ccivil_03/_Ato2019-2022/2019/Msg/VEP/VEP-288.htm> accessed 29 July 2024.

[157] *See* Mariana Mazzucato, *The Entrepreneurial State: Debunking Public vs. Private Sector Myths* (Anthem Press 2014) 207-208; Edoardo Celeste, *Digital Constitutionalism: The Role of Internet Bills of Rights* (1ed, Routledge 2022) 194-195 <https://library.oapen.org/bitstream/handle/20.500.12657/75991/9781000685190.pdf;jsessionid=983031AA03A03AEBDED1E6DCC43986D2?sequence=1>.

[158] *See* MBB Fernandes and CHM Baptista de Oliveira, 'O Artigo 20 Da LGPD e Os Desafios Interpretativos Ao Direito à Revisão Das Decisões Dos Agentes de Tratamento Pelos Titulares de Dados' (2020) 8 Revista de Direito e as Novas Tecnologias 1, 5; Carlos A Souza, Christian Perrone and Eduardo Magrani, 'O direito à explicação entre a experiência europeia e a sua positivação na LGPD' in Danilo Doneda et al. (eds), *Tratado de Proteção de Dados Pessoais* (Forense 2021) 260-261.

[159] L Bergstein , F de CA Gama and MA Câmara, 'Proteção de Dados Pessoais e as Decisões Automatizadas nas Relações de Consumo: Os Direitos à Explicação e Revisão' (2022) 140 Revista de Direito do Consumidor 359; Miriam

that, in order to comply with a data subject's review request, the data controller must put in place a *human out of the loop mechanism*. Regardless of the veto to the reference to a natural person in the final legal text, a teleological interpretation of Art. 20 renders the human review as a form of human intervention to enable *contestability* of ADM systems.[160] This view is congruous to Wimmer and Doneda's argument on the possibility to articulate different mechanisms of human intervention or oversight throughout the stages of the automated decision-making process.[161]

Besides the scholarly debate, the gap regarding explicitly mandating human revision and oversight in ADM processes has prompted significant advocacy efforts aimed at strengthening legal protections against the potential harms of ADM systems. Civil society organizations have been at the forefront of these efforts, calling for legislative amendments to reinstate explicit requirements for meaningful human intervention in ADM systems.[162]

Wimmer and Danilo Doneda, '"Falhas de IA" e a Intervenção Humana em Decisões Automatizadas: Parâmetros para a Legitimação pela Humanização' (2021) 18 Revista Direito Público 374; Sérgio MCA Negri and Maria Regina R Korkmaz, 'Decisões automatizadas e a proteção de crianças e adolescentes' in P Laterça, E Fernandes, C De Teffé and S Branco (eds.) *Privacidade e proteção de dados de crianças e adolescentes* (ITS Rio 2021) 127; Maria Regina R Korkmaz, *Decisões automatizadas: explicação, revisão e proteção na era da inteligência artificial* (Thomson Reuters Brasil 2023). In contrast, Souza, Perrone and Magrani hold that the human review is not mandatory, but rather a best practice (Carlos A Souza, Christian Perrone and Eduardo Magrani, 'O direito à explicação entre a experiência europeia e a sua positivação na LGPD' in Danilo Doneda et al. (eds), *Tratado de Proteção de Dados Pessoais* (Forense 2021) 267).

[160] Diego Machado, *Algoritmos e proteção de dados pessoais* (Almedina 2023). Marco Almada and Juliano Maranhão argue that one of the right to revision's underlying goals is to promote contestability. However, when it comes to the intervention of a natural person in the review process they reject the possibility of this interpretation of art. 20. This rejection is attributed to the fact that the human review was not reintroduced to the legal text after being vetoed. Consequently, they adopt a historical interpretation method (Marco Almada and Juliano Maranhão, 'Contribuições e limites da Lei Geral de Proteção de Dados para a regulação da inteligência artificial no Brasil' (2023) 20 Direito Público 385, 394 and 403).

[161] Miriam Wimmer and Danilo Doneda, '"Falhas de IA" e a Intervenção Humana Em Decisões Automatizadas: Parâmetros Para a Legitimação Pela Humanização' (2021) 18 Revista Direito Público 374, 378.

[162] Coalizão de Direitos na Rede, "Vetos à LGPD: Congresso retoma sanções e evidencia importância da revisão humana de decisões automatizadas" (7 October 2019) <https://direitosnarede.org.br/2019/10/07/vetos-a-lgpd-congresso-retoma-sancoes-e-evidencia-importancia-da-revisao-humana-de-decisoes-automatizadas/> accessed 10 January 2025.

The broader discourse on AI regulation in Brazil reflects these concerns. The ongoing discussions surrounding the Brazilian AI Bill emphasize the critical role of human oversight as a governance mechanism for algorithmic accountability. Advocates argue that without explicit statutory provisions mandating human intervention, ADM systems may operate with limited transparency and accountability, increasing the risks of infringing upon fundamental rights such as the right to non-discrimination and right to effective judicial remedies.[163]

In addition to the primary provision concerning the right to review, Art. 20 of the LGPD introduces additional safeguards in ADM systems. First, Art. 20, §1, establishes the data subject's right to access information regarding the underlying criteria and procedures used in the automated decision-making process. This provision aims to enhance transparency and ensure individuals are adequately informed about how such decisions are made. Second, Article 20, §2, grants the Brazilian DPA a form of administrative prerogative to conduct algorithmic audits. These audits are intended to assess ADM systems for potential discriminatory effects, thereby addressing concerns about non-discrimination, fairness and equality in ADM systems.

Under the Brazilian legal system, the debate over the existence of a right to explanation is closely tied to the interpretation of Art. 20 §1 of the LGPD. This legal provision reads as follows:

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[163] Civil society organizations are proposing alterations to the Bill in order to safeguard a right to revision of automated decisions of any AI system and to improve the wording of article 6.3 of its latest text. See: Coalizão de Direitos na Rede, 'Regular para promover uma IA responsável e protetiva de direitos: alertas sobre retrocessos, ameaças e garantias de direitos no PL nº 2.338/23' (*Coalizão de Direitos na Rede*, 29 November 2024) <https://direitosnarede.org.br/2024/11/29/regular-para-promover-uma-ia-responsavel-e-protetiva-de-direitos-alertas-sobre-retrocessos-ameacas-e-garantias-de-direitos-no-pl-no-2-338-23/> accessed 10 January 2025; Arthur AM Barbosa and others, *'Documento Preto I: Contribuições do Aqualtune Lab para o debate sobre regulação de Inteligência Artificial no Brasil'* <https://aqualtunelab.com.br/wp-content/uploads/2022/11/AQUALTUNELAB-DocumentoPreto-A5-V2-web.pdf> accessed 10 January 2025.

§1 Whenever requested to do so, the controller shall provide clear and adequate information regarding the criteria and procedures used for an automated decision, subject to commercial and industrial secrecy.

For a fully automated decision to be subject to review, the reasons and justifications for the outcome must first be provided in a comprehensible manner to the data subject. In Brazil, scholars have aligned their discussions with European and global debates on the GDPR's right to explanation, engaging in an intense discussion regarding the transparency of ADM systems and their capacity to present sufficient information to explain automated decisions and outcomes, including those derived from automated profiling.

In this context, Art. 20 §1 of the LGPD has emerged as a key legal basis for a right to explanation, although a comparable provision was already enshrined in Art. 5 IV of Law nº 12,414/2011. Unlike the EU, where data protection scholars have presented diverging interpretations regarding the legal basis for the right to explanation under the GDPR, the Brazilian legal discourse exhibits a more unified perspective. In Brazil, this data subject right is grounded in the principles of transparency and accountability[164] (Art. 6, VI and X, LGPD) and the right of

[164] Renato L Monteiro, 'Desafios para a efetivação do direito à explicação na Lei Geral de Proteção de Dados do Brasil' (Doctoral Thesis, Universidade de São Paulo, 2022) 172; Isabella Z Frajhof, 'Direito à explicação e proteção de dados pessoais nas decisões por algoritmos de inteligência artificial' (Doctoral Thesis, Pontifícia Universidade Católica do Rio de Janeiro, 2022) 194, 198; César Beck, Murilo M Boff and Thami C Piaia, 'Lei Geral de Proteção de Dados e a revisão de decisões automatizadas: os mecanismos de regulação baseados em uma inteligência artificial ética (2022) 17 Revista Eletrônica Direito e Política 509 <https://periodicos.univali.br/index.php/rdp/article/view/19067> accessed 20 January 2025.

access (Arts. 9, I-II, 18, I-II, and 19, II, LGPD), serving as a necessary premise for exercising the right to review.[165]

Interestingly, the European debate regarding the types of information encompassed within the right to explanation—whether general (model-centric or global) or specific (subject-centric or local)—has not been mirrored in Brazilian data protection law discussions. Scholars argue that under the LGPD, the right to explanation generally includes both general (model-centric or global) and specific (subject-centric or local) explanations.[166] First, the wording of Article 20, §1, explicitly refers to *post hoc* information about the criteria and procedures *used* to generate the automated decision that affects a legally protected interest of the data subject. Second, the terms "criteria" and "procedures" are sufficiently broad to contextually encompass information about the ADM system's functionality (general explanation). Supporting this interpretation, Art. 19, II, of the LGPD provides that, upon a right-of-access request, data processing agents must furnish a "clear and complete statement indicating the origin of the data, the absence of registration, *the criteria used and the purpose of the processing*." [167] (italics added).

If a data controller justifiably believes that providing such an explanation would infringe on trade secrets, they may resist the information request. However, while this legal defense is permissible against the data subject, the controller remains subject to oversight by the ANPD,

[165] Carlos A Souza, Christian Perrone and Eduardo Magrani, 'O direito à explicação entre a experiência europeia e a sua positivação na LGPD' in Danilo Doneda et al. (eds), *Tratado de Proteção de Dados Pessoais* (Forense 2021) 263; Diego Machado, *Algoritmos e proteção de dados pessoais* (Almedina 2023).
[166] Carlos A Souza, Christian Perrone and Eduardo Magrani, 'O direito à explicação entre a experiência europeia e a sua positivação na LGPD' in Danilo Doneda et al. (eds), *Tratado de Proteção de Dados Pessoais* (Forense 2021) 263
[167] *See* Diego Machado, *Algoritmos e proteção de dados pessoais* (Almedina 2023).

which is empowered to audit ADM systems to ensure compliance with fairness and non-discrimination requirements (Art. 20, §2).

4) ADM regulation in practice: how EU and Brazilian institutions apply data protection law to ADM systems

The practical application of data protection laws to ADM systems reveals salient disparities between the approaches adopted by the EU and Brazilian institutions. Both jurisdictions, influenced by their respective data protection regulations strive to balance the benefits of ADM systems with the protection of fundamental rights and freedoms. However, the stage in which these legal discussions are being held is quite distinct.

In the EU, courts and data protection authorities have been active in interpreting and enforcing GDPR provisions, often leading to detailed and precedent-setting decisions. For instance, the scope and application of Art. 22 have been clarified through various cases, reinforcing the requirement for substantial human oversight in ADM processes. Conversely, in Brazil, the ANPD's administrative guidance is still in its early stages of development, and the judiciary has not yet played a pivotal role in interpreting the LGPD provisions on ADM. Even though there are cases being tried on this matter, particularly in trial courts and courts of appeals, they lack the seniority and years of jurisprudential development that the EU currently has. Therefore, the

Brazilian jurisdiction would greatly benefit from specific guidance from its data protection authority on ADM.[168]

Additionally, it is important to highlight the difference of institutional development by data protection authorities. While the EDPB and various DPAs within the EU have developed extensive guidelines and enforcement actions concerning ADM under the GDPR, the Brazilian DPA (ANPD) has yet to analyze the scope and interpretation of LGPD's Art. 20, including in enforcement cases. Both topics of the right to revision of automated decisions and AI is set in its regulatory agenda for 2025 and 2026,[169] which brings some level of expectation given the recent issuance of public consultations that draw attention to key conceptual elements of ADM. The incertitude increases if we contextualize the matter with the pending Bill n. 2.338/2023 in the Brazilian House of Representatives, that aims to regulate AI and several aspects related to ADM systems.

Both jurisdictions underscore the importance of transparency, accountability and the protection of fundamental rights in algorithmic systems, specially the right to the protection of personal data. Nonetheless, the depth and clarity of regulatory guidance vary, reflecting the different stages of development and enforcement of data protection laws in the EU and Brazil. This section will explore specific cases and regulatory decisions that illustrate how each jurisdiction

[168] Katerina Demetzou, Gabriela Zanfir-Fortuna and Sebastião B Vale, 'The thin red line: Refocusing data protection law on ADM, a global perspective with lessons from case-law (2023) 49 Computer Law & Security Review <https://doi.org/10.1016/j.clsr.2023.105806> accessed 29 July 2024.

[169] ANPD, *'ANPD publica Agenda Regulatória 2025-2026'* <https://www.gov.br/anpd/pt-br/assuntos/noticias/anpd-publica-agenda-regulatoria-2025-2026> accessed 8 January 2025.

applies its data protection laws to ADM systems, providing insights into the operational challenges in protecting individual rights amidst the rise of ADM.

4.1. Applying Article 22 of the GDPR: EU case-law and binding decisions

In the EU, there have been cases that highlight the extensive reach of the GDPR over ADM processes. This reaffirms that the legal framework covers various technologies that process personal data, such as facial recognition and many other types of algorithmic systems. Scholars and legal commentators have been analyzing judicial and administrative case law on Art. 22 of the GDPR, which has gained momentum in national courts and data protection authorities (DPAs) since the regulation came into effect in 2018. In this research, these studies served as key resources for identifying relevant ADM cases.[170]

A prominent example on the application of Art. 22 of the GDPR is the case C-634/21 SCHUFA Holding (Scoring), involving the German credit agency SCHUFA. The agency's scoring system, which generates credit scores based on personal data, was scrutinized to determine whether it constituted automated decision-making under the GDPR. The CJEU's ruling concluded that if the automated establishment of a probability value by SCHUFA plays a "determining role" in third parties' decision-making to establish, implement or terminate a contractual relationship with individuals, it falls within the purview of Art. 22. Even though the binding precedent is a hallmark

[170] Among the studies consulted, *see* Sebastião B Vale and Gabriela Zanfir-Fortuna , 'Automated Decision-Making Under the GDPR: Practical Cases from Courts and Data Protection Authorities' (Future of Privacy Forum 2022); Ljubiša Metikoš and Jef Ausloos, 'The Right to an Explanation in Practice: Insights from Case Law for the GDPR and the AI Act' (2024) Available at SSRN <https://ssrn.com/abstract=4996173>.

to the application of the EU ADM regulatory framework, one must acknowledge that the court ruling left unanswered a number of concerns scholars had raised so far.

In addressing the questions referred for a preliminary ruling, the CJEU analyzed the three cumulative conditions under Art. 22(1): (i) there must be a "decision," (ii) based "solely on automated processing, including profiling," and (iii) that "produces legal effects concerning [the data subject]" or "similarly significantly affects" them.[171] Regarding the legal nature of Art. 22, the CJEU affirmed the EDPB's interpretation, which considers Art. 22(1) a prohibition in principle. National courts, such as the District Court of Amsterdam, adopted this interpretation as well.[172]

The first issue entails whether the automated establishment of a probability value (commonly referred to as "scoring") by a credit information agency constitutes a decision. The CJEU agreed with the argument of AG Pikamäe[173] that the scoring is indeed a decision within the meaning of the concept inscribed in Art. 22(1) of the GDPR. This concept, argues the European court, is "capable of including a number of acts which may affect the data subject in many ways." On the one hand, the argument seems to align with the idea of an action driven by an automatic result; on the other, it is broad enough to encompass the *result of calculating* a natural person's

[171] Case C–642/21 *Land Hessen v SCHUFA Holding AG* [2023] ECLI:EU:C:2023:957, para 43.
[172] Rechtbank Amsterdam, Case C/13/689705/HA RK 20-258, ECLI:NL:RBAMS:2021:1019 <https://uitspraken.rechtspraak.nl/details?id=ECLI:NL:RBAMS:2021:1019> accessed 18 January 2025.
[173] Case C–642/21 *Land Hessen v SCHUFA Holding AG* [2023] Opinion of AG Pikamäe, paras 37-43, 47.

creditworthiness in the form of a probability value concerning that individual's ability to meet payment commitments in the future – i.e. the output of an algorithmic system.[174]

The CJEU goes on to affirm that the second Art. 22(1) prerequisite is also present in the case. The argument layed out is that there is an "automated establishment of a probability value based on personal data,"[175] and when this information is communicated to a financial institution it plays a *determining role* in the granting of credit.[176] Then, the credit information agency's score/probability value is the *de facto* final decision.[177]

The third condition was also considered met. The scoring system evaluated personal data to predict an individual's likelihood of meeting future payment obligations. This process, though seemingly technical and detached, has profound implications for the data subject. A low probability score can lead to the denial of credit, thereby impacting the individual's financial opportunities and, by extension, their social and economic well-being. In its rendering, the court recognized that such decisions, even if not directly made by SCHUFA but determined by its scoring, fulfill the criteria of Art. 22(1) as they at least significantly affect the data subject.[178]

Further, the court addressed the legal framework under which such automated decisions can be deemed lawful. Art. 22(2) stipulates exceptions where automated decision-making is

[174] Case C–642/21 *Land Hessen v SCHUFA Holding AG* [2023] ECLI:EU:C:2023:957, para 46.
[175] Case C–642/21 *Land Hessen v SCHUFA Holding AG* [2023] ECLI:EU:C:2023:957, para 47.
[176] Case C–642/21 *Land Hessen v SCHUFA Holding AG* [2023] ECLI:EU:C:2023:957, para 50.
[177] Case C–642/21 *Land Hessen v SCHUFA Holding AG* [2023] Opinion of AG Pikamäe, paras 44.
[178] Case C–642/21 *Land Hessen v SCHUFA Holding AG* [2023] ECLI:EU:C:2023:957, para 49.

permissible: if it is necessary for entering into or performing a contract, authorized by Union or Member State law, or based on the individual's explicit consent. The CJEU endorsed the necessity that these exceptions are accompanied by appropriate safeguards, including the right to obtain human intervention, express their point of view and contest the decision.

In the context of this case, the German Federal Data Protection Act (BDSG) under Paragraph 31 attempted to regulate the use of probability values in credit assessments. However, the CJEU's ruling casts doubt on the adequacy of such national legislation in providing the necessary safeguards mandated by the GDPR. The BDSG's focus on the "use" of probability values rather than their "establishment" presents a potential gap in compliance with Art. 22(2)(b), which necessitates suitable measures to protect the data subject's rights and freedoms. The Court's interpretation required a re-evaluation of the BDSG and similar national legislations to ensure they do not merely comply superficially but substantially with the GDPR's requirements.

By establishing a broad conception about what a fully automated decision is, the CJEU aimed to guarantee an effective protection of data subjects, avoiding any gaps in legal protection.[179] Nevertheless, the SCHUFA judgement's impact-oriented approach left unaddressed numerous fundamental questions scholars have raised concerning the notion of meaningful human

[179] Case C–642/21 *Land Hessen v SCHUFA Holding AG* [2023] ECLI:EU:C:2023:957, paras 60-61.

intervention. Consequently, this precedent is anticipated to have limited application across the variety of ADM systems in operation (e.g., triage semi-automated systems).

Emerging regulatory trends and judicial efforts reflect growing attention by national courts and DPAs to refine criteria for assessing the quality of human involvement in ADM processes. Relevant factors include whether humans considered additional elements in decision-making, their authority within the organizational structure, their competence and training. In an enforcement decision rendered by the Portuguese DPA, Art. 22(1) of the GDPR was considered applicable to the use of a proctoring technology to remotely assess students and award them with a fraud likelihood score. While the ADM system was intended to be used by professors as a decision-support system (i.e., with a human in the loop), there was no meaningful human intervention because the absence of specific guidelines on how to interpret these scores and the lack of guiding criteria for teachers to make coherent and transparent decisions could unfairly discriminate against students and allow teachers to validate the system's automatic decision by default (rubber-stamping).[180]

Regarding the implementation of safeguards and data subject rights, the CJEU missed in the SCHUFA case the opportunity to clarify the applicability of the right to explanation within the context of ADM systems. AG Pikamäe, in his opinion, suggested that the obligation to provide "meaningful information about the logic involved" under Art. 15(1)(h) of the GDPR should, in principle, encompass the calculation method employed by a credit information agency to generate

[180] Comissão Nacional de Protecção de Dados (CNPD), Deliberação n. 2021/622 (11 May 2021), <https://www.cnpd.pt/umbraco/surface/ cnpdDecision/download/121887> accessed 19 January 2025.

a score.[181] However, the right to explanation would apply only in the absence of overriding conflicting interests deemed worthy of protection.[182]

It was only in February 2025 that the CJEU explicitly addressed this lacuna in its jurisprudence through the Dun & Bradstreet Austria judgment.[183] Paraphrasing Metikoš and Ausloos, the right to explanation in the EU has evolved from a brief mention in the GDPR Recitals to a fully-fledged legal right recognized in the case law of national courts and data protection authorities[184]—a development now consolidated by the EU's highest court.

Building on the SCHUFA precedent, the CJEU confirmed that the GDPR enshrines a right to an explanation of decisions made solely through automated processing.[185] Notably, the Court continued to apply a broad definition of "automated decision," equating it with "obtaining a specific result by automated means."[186] This reasoning appears to conflate the notion of a decision

[181] In contrast to an Austrian administrative court that held that in case of ADM, the 'meaningful information about the logic involved' mentioned by Article 15(1)(h) GDPR does not impose a full disclosure of the mathematical formula used by the controller (*Bundesverwaltungsgericht* [2023] Federal Administrative Court ECLI:AT:BVWG:2023:W252.2246581.1.00, W252 2246581-1/6E (n 3)).

[182] Case C–642/21 *Land Hessen v SCHUFA Holding AG* [2023] Opinion of AG Pikamäe, paras 54. See Lorenzo Gugliotta, *Towards a right to explanation for automated (and AI-based) decisions? Anticipating the upcoming judgment in C-634/21 OQ v SCHUFA* (28 November 2023) <https://www.law.kuleuven.be/ai-summer-school/blogpost/Blogposts/SCHUFA-right-to-explanation> accessed 19 January 2025; Dean-Robin Kern, 'Peeking Inside the Schufa Blackbox: Explaining the German Housing Scoring System' (Arxiv 2023) <https://arxiv.org/pdf/2311.11655>.

[183] Case C–203/22 *CK v Dun & Bradstreet* [2025] ECLI:EU:C:2024:745.

[184] Ljubiša Metikoš and Jef Ausloos, 'The Right to an Explanation in Practice: Insights from Case Law for the GDPR and the AI Act' (2024) Available at SSRN <https://ssrn.com/abstract=4996173>

[185] Case C–203/22 *CK v Dun & Bradstreet* [2025] ECLI:EU:C:2024:745, paras 57-58.

[186] Case C–203/22 *CK v Dun & Bradstreet* [2025] ECLI:EU:C:2024:745, paras 38 and 43.

with the output of an algorithmic system, while offering no further clarification on what constitutes meaningful human intervention.

Drawing on Arts. 15(1)(h), 22(3), and Recital 71, the court endorsed the contextual approach advocated by the dominant strand of European legal scholarship, as discussed in Section 3.1. It upheld the existence of a "genuine right to an explanation" under the GDPR.[187] This particular right of access to meaningful information about the logic involved in the ADM system is poised to enable data subjects to *contest* automated decisions by exercising the rights conferred by Art. 22(3) of the GDPR.[188]

In order to fulfill the right to explanation purpose, the CJEU established that the *meaningful information* furnished to the data subject must: (i) cover all relevant information concerning the procedure and principles relating to the use of personal data and "other data" in the automated decision-making; and (ii) be provided in a way that the data subject is able to fully understand.[189] In practical terms, these requirements encompass both general explanations concerning the ADM system's functionality (*ex ante*) and specific explanations about individual decisions (*ex post*),[190]

[187] Case C–203/22 *CK v Dun & Bradstreet* [2025] ECLI:EU:C:2024:745, para 54; Case C–203/22 *CK v Dun & Bradstreet* [2024] Opinion of AG De La Tour, para 67.
[188] Case C–203/22 *CK v Dun & Bradstreet* [2025] ECLI:EU:C:2024:745, paras 55-56.
[189] Case C–203/22 *CK v Dun & Bradstreet* [2025] ECLI:EU:C:2024:745, paras 42-43; 49-50.
[190] "[...] Article 15(1)(h) of the GDPR affords the data subject a genuine right to an explanation as to the functioning of the mechanism involved in automated decision-making of which that person was the subject and of the result of that decision.". Case C–203/22 *CK v Dun & Bradstreet* [2025] ECLI:EU:C:2024:745, para 57.

provided that such information renders the ADM process *legible*[191] to the affected data subject.[192] The court even suggests that counterfactual explanations would be specifically appropriate to the algorithmic profiling process at issue in the case.[193-194]

While the Dun & Bradstreet judgement rightfully affirms the existence of a right to explanation, its implications for effective contestation of ADM decisions remain limited. The court's insistence on balancing the right of access to information with the protection of trade secrets introduces a case-by-case assessment to be conducted by national courts or supervisory authorities.[195] This effectively leaves unresolved a core tension: how much disclosure is sufficient to empower data subjects without compromising commercial confidentiality?

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[191] Legibility means "the capability of individuals to autonomously understand data and analytics algorithms, with a concrete comprehension of methods and data used." Gianclaudio Malgieri and Giovanni Comandé (n 12) 245.

[192] cf Ljubiša Metikoš, 'Dun & Bradstreet: A Pyrrhic Victory for the Contestation of AI under the GDPR' (KU Leuven 25 March 2025) <https://www.law.kuleuven.be/ai-summer-school/blogpost/Blogposts/dun-bradstreet-a-pyrrhic-victory-for-the-contestation-of-ai-under-the-gdpr> accessed 08 April 2025.

[193] Case C–203/22 *CK v Dun & Bradstreet* [2025] ECLI:EU:C:2024:745, para 62.

[194] As Barocas, Selbst and Raghavan elucidates, "[t]he goal of counterfactual explanations is to provide actionable guidance—to explain how things could have been different and provide a concrete set of steps a consumer might take to achieve a different outcome in the future. Counterfactual explanations are generated by identifying the features that, if minimally changed, would alter the output of the model." (Solon Barocas, Andrew D Selbst and Manish Raghavan, 'The Hidden Assumptions behind Counterfactual Explanations and Principal Reasons' [2020] FAT* 2020 - Proceedings of the 2020 Conference on Fairness, Accountability, and Transparency 80). Despite the advocacy of certain scholars for the utilisation of a counterfactual explanation approach to *ex post* reason-giving to substantiate automated decisions (Sandra Wachter, Brent Mittelstadt and Chris Russell, 'Counterfactual Explanations Without Opening the Black Box: Automated Decisions and the GDPR' (2018) 31 Harvard Journal of Law & Technology 841), there is research highlighting the problematic deficiencies of this method that remain to be solved (cf Solon Barocas, Andrew D Selbst and Manish Raghavan, 'The Hidden Assumptions behind Counterfactual Explanations and Principal Reasons' [2020] FAT* 2020 - Proceedings of the 2020 Conference on Fairness, Accountability, and Transparency 80).

[195] Case C–203/22 *CK v Dun & Bradstreet* [2025] ECLI:EU:C:2024:745, para 73-74.

Moreover, by framing trade secrets as rights to be balanced against the fundamental right to the protection protection of personal data, the CJEU risks conflating trade secrecy with intellectual property, an approach not supported by the EU Trade Secrets Directive, which deliberately eschews IP framing.[196] This conceptual elision may complicate future adjudications and weakens the normative clarity of data subjects' rights under the GDPR. The court's language suggests a false equivalence between proprietary interests and fundamental rights. By stating that trade secrets must be "balanced" against data subject rights under Art. 47 of the Charter, the judgment opens the door to undue judicial discretion and potentially uneven enforcement across Member States. A more principled delineation of interests, grounded in the non-IP nature of trade secrets, would have reinforced the primacy of fundamental rights in ADM contexts.

4.2. Brazilian jurisprudence on Article 20 of the LGPD

Until very recently (June 2024), the Superior Court of Justice (STJ), Brazil's highest national court responsible for interpreting federal legislation such as the LGPD, had not handed down a decision specifically addressing ADM. On 18 June 2024, this situation was altered by the issuing of the judgment in *Recurso Especial n. 2.135.783/DF*.[197] Nevertheless, most judicial rulings related to Art. 20 of the LGPD have been adjudicated by judges of first instance and courts

[196] Lucas Anjos, 'Rethinking Algorithmic Explainability Through the Lenses of Intellectual Property and Competition.' *Digital Governance:Confronting the Challenges Posed by Artificial Intelligence*, (T.M.C. Asser Press 2024).

[197] *Recurso Especial nº 2.135.783/DF* [2024] Superior Court of Justice <https://scon.stj.jus.br/SCON/GetInteiroTeorDoAcordao?num_registro=202304319744&dt_publicacao=21/06/2024 > accessed 31 July 2024.

of appeals.[198] This is one of the recent findings of an empirical research project conducted annually by CEDIS' PrivacyLab, which has been published in an initiative called *"Painel LGPD nos Tribunais"*. The project is dedicated to exploring both qualitative and quantitative analysis on the application of data protection law by Brazilian courts.[199]

Since the Brazilian General Data Protection Law entered into force in 2020, the majority of cases concerning ADM provisions have involved digital platforms, mainly app-based transportation companies and social networks. This claim is supported in the analysis of the CEDIS' reports released in 2021[200], 2023[201] and 2024.The central issues in these cases typically revolve around the procedures used to exclude drivers and users, block accounts and social media profiles, or impose restrictions and limitations on access to the app.

By examining these judicial decisions, a few observations can be made. First, in the Brazilian judicial system, the issue of user or rider behavior and its compliance with the platform's terms of service seems to take precedence over the scrutiny of the (semi)automated processing that led to the ousting decision. In a verdict delivered by a labor judge, the plaintiff's requests of

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[198] Centro de Direito, Tecnologia e Sociedade, *Relatório do Painel LGPD nos Tribunais 2023* (IDP 2024) 80 <https://wpcdn.idp.edu.br/idpsiteportal/2024/06/Relatorio-LGPD-nos-Tribunais-1a-edicao.pdf> accessed 24 July 2024.

[199] *"Painel LGPD nos Tribunais"* is an initiative by the Center for Law, Internet and Society (CEDIS-IDP) in partnership with Jusbrasil, supported by the United Nations Development Program (PNUD Brasil). This project focuses on empirical research and qualitative analysis of the application of data protection law by Brazilian courts, utilizing AI-based software developed by the Jusbrasil team. These judicial decisions are publicly available, sourced from various official gazettes and the Judiciary's case law search pages. For more details about the research methodological design and to retrieve the court rulings that mention articles of the LGPD, see respectively the report ("*Relatório LGPD nos Tribunais 2023*") and the dedicated website of the initiative (https://painel.jusbrasil.com.br/).

[200] *Painel LGPD nos Tribunais: Jurisprudência do 1º ano da Lei Geral de Proteção de Dados* (2021) <https://painel.jusbrasil.com.br/2022> accessed 24 June 2024.

[201] *Painel LGPD nos Tribunais: Jurisprudência do 2º ano de vigência a Lei Geral de Proteção de Dados* (2023) <https://painel.jusbrasil.com.br/2023> accessed 24 June 2024.

revision and access to information regarding the criteria and procedures underlying the decision were rejected. The judge of first instance reasoned that the removal of the driver of the ride-hailing app was not based solely on the processing of their personal data, "but on factors related to their participation in the platform, its rules, in other words, its internal policy."[202]

In another case brought before the Labor Justice, the plaintiff's claim under Art. 20 of the LGPD was dismissed because his exclusion from the platform was deemed legal by the judge as a form of unilateral contract termination in accordance with the platform's terms of service. Notably, the ruling contained no analysis regarding the nature of the data processing—whether or not it relied on automated decision-making.[203] A similar decision was issued by the State Court of São Paulo (TJSP). Despite the appellant's assertion that Uber violated Art. 20 of the LGPD, the state-level court of appeals did not address the interpretation and application of this ADM legal provision and rejected the case primarily on the grounds that the digital platform's terms of service explicitly permitted the automatic removal of non-compliant drivers.[204]

However, in its new decision on a case regarding the use of ADM in a transportation digital platform (99Taxi), the Superior Court of Justice adopted a more balanced approach. *In lieu* of prioritizing an examination of the terms of service and its contractual clauses, the court proceeded to analyze the ADM system implemented by the ride-hailing app within the context of the contractual relationship between the driver and the platform. In Justice Nancy Andrighi's

[202] *Processo n. 0010860-28.2023.5.18.0002* [2023] 2ª Vara do Trabalho de Goiânia.
[203] *Processo n. 0010917-67.2022.5.03.0012* [2022] 12ª Vara do Trabalho de Belo Horizonte.
[204] *Apelação Cível n. 1001027-47.2023.8.26.0405* [2024] State Court of São Paulo (TJSP).

opinion, it was confirmed that the driver was in breach of contract due to a violation of the platform's terms of service. Furthermore, the Justice acknowledged the processing of the driver's personal data through automated means, which triggered the application of Art. 20 of the LGPD.[205] It is conceivable that this understanding may ultimately influence the approach of lower-level courts, enabling them to more adequately assess the terms of service and the role ADM plays within it. It is important to note that, according to Brazilian procedural civil law, this significant ruling by the STJ does not constitute a binding judicial precedent.[206]

Second, in order to have their right to revision judicially protected, the data subject/claimant is required to meet the burden of proof by providing sufficient evidence of the existence of an automated decision and to have previously requested the review from the controller. For example, in a lawsuit filed against Uber for alleged violation of Art. 20 of the LGPD, the case was dismissed due to the plaintiff's inability to substantiate that his removal from the platform was the consequence of an automated decision.[207] Furthermore, it is notable that requiring the data subject to demonstrate that a previous review request had been made to the controller is analogous

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[205] *Recurso Especial nº 2.135.783/DF* [2024] Superior Court of Justice <https://scon.stj.jus.br/SCON/GetInteiroTeorDoAcordao?num_registro=202304319744&dt_publicacao=21/06/2024 > accessed 31 July 2024.

[206] This statement is in accordance with Art. 926 and 927 of the Brazilian Code of Civil Procedure (Lei nº 13.105/2015), which requires the judiciary to ensure uniformity and stability in its decisions, without, however, establishing binding precedent unless expressly provided by law. While decisions by the Superior Court of Justice do not necessarily create binding precedent, they hold significant persuasive authority and serve as guiding jurisprudence for lower courts in interpreting substantive and procedural law. *Lei nº 13.105 de 16 de março de 2015* Código de Processo Civil (CPC). <https://www.planalto.gov.br/ccivil_03/_ato2015-2018/2015/lei/l13105.htm> accessed 10 January 2025. *See* Hermes Zanetti Jr, *O valor vinculante dos precedentes: teoria dos precedentes normativos formalmente vinculantes* (JusPodivm 2021).

[207] *Processo n. 0000065-17.2023.5.13.0029* [2023] 10ª Vara do Trabalho de João Pessoa. In the same direction, *see Processo n. 0010952-37.2022.5.03.0138* [2023] 38ª Vara do Trabalho de Belo Horizonte; *Processo n. 0010060-54.2023.5.03.0022* [2023] 22ª Vara do Trabalho de Belo Horizonte; *Processo n. 0000081-02.2023.5.07.0008*, [2023] 8ª Vara do Trabalho de Fortaleza; *Processo n. 1000930-44.2022.5.02.0391* [2023] Vara do Trabalho de Poá.

to the prerequisite of petitioning the data protection authority (ANPD) against data controllers. Art. 55-J V LGPD stipulates that the ANPD is legally entitled to receive and analyze petitions from data subjects against controllers after the data subjects have demonstrated that they have submitted complaints against the controllers that were not resolved within the established regulatory timeframe.

Third, Art. 20 §1 of the LGPD is frequently treated by courts as a procedural matter concerning evidence and the burden of proof. For instance, there are cases where the plaintiff's request to access "information about the criteria and procedures used for the automated decision" was rejected on the grounds that it was not necessary to prove the facts of the case.[208] This approach reveals a blurring of the lines between procedural law (i.e., rules governing evidentiary law) and substantive law (i.e., legal norms safeguarding data subjects' rights).

A further observation regarding the examined court decisions pertains to the provision of Art. 20 §1 of the LGPD. Our research indicates a lack of clarity regarding (i) the scope of the term *"criteria and procedures"* as applied to automated decision-making and (ii) the circumstances under which data controllers are obliged to inform data subjects about how such decisions are reached. This ambiguity raises critical questions about the specifics (*what*) and timing (*when*) of the information that data controllers must provide to data subjects regarding automated decision-making processes.

[208] *Processo n. 0001009-90.2022.5.07.0006* [2023] 6ª Vara do Trabalho de Fortaleza. In the same vein: *Recurso Ordinário em Procedimento Sumaríssimo n. 0010543-76.2021.5.03.0015* [2022] Regional Labor Court of the Third Region (TRT3); *Processo n. 0010871-67.2021.5.03.0027* [2022] 15ª Vara do Trabalho de Belo Horizonte.

As to the notion of *"criteria and procedures"*, our analysis shows that the Judiciary have been interpreting the terms of service clauses within the legal scope of this concept. In an appeals case, a Regional Labor Court upheld that the terms of service delineate the criteria and procedures that must be adhered to by both the driver who registers and the digital platform itself.[209] Likewise, in several cases involving social networks such as Facebook, the automatic restriction or blockage of personal accounts were treated as illegal because the internet service provider (controller) failed to demonstrate any breach of its terms of service. This situation amounted to an infringement upon Art. 20 §1, as the platform had not provided "clear and adequate information regarding the criteria and procedures used for the automated decision" to the data subject.[210]

Despite not directly fleshing out the meaning of *"criteria and procedures"* in the realm of ADM, the STJ ruling gave some directions about the specifics (*what*) and timing (*when*) of the information data controllers must provide to data subjects in situations of driver/professional account suspension and exclusion by automated means. According to the court, the data subject must be informed of the *"reasons"*—including the terms of service infringed upon—for the

[209] *Recurso Ordinário n. 0000321-86.2022.5.08.0011* [2022] Regional Labor Court of the Eight Region (TRT8). See also *Apelação Cível n. 1055276-61.2021.8.26.0002* [2022] State Court of São Paulo (TJSP).

[210] *Processo n. 1012370-31.2023.8.26.0020* [2023] 6ª Vara Cível do Foro Regional XII da Comarca de São Paulo; *Processo n. 1066279-39.2023.8.26.0100* [2023] 35ª Vara Cível do Foro Central Cível da Comarca de São Paulo; *Processo n. 1114268-41.2023.8.26.0100* [2023] 35ª Vara Cível do Foro Central Cível da Comarca de São Paulo; *Processo n. 1065743-28.2023.8.26.0100* [2024] 15ª Vara Cível do Foro Central Cível da Comarca de São Paulo*; Processo n. 1083159-09.2023.8.26.0100* [2024] 15ª Vara Cível do Foro Central Cível da Comarca de São Paulo*; Processo n. 1015440-06.2023.8.26.0554* [2023] 8ª Vara Cível Comarca de Santo André; Apelação n. 1015440-06.2023.8.26.0554 [2024] State Court of São Paulo (TJSP).

suspension of their account (*what*) after the decision is taken (*when*), so they can request a review.[211]

Bearing in mind the limitations of the qualitative analysis proposed in this section, we can assert that, to date, Brazilian courts have not rendered significant decisions engaging thoroughly with the interpretative discussions on the legal requirements for applying Art. 20 of the LGPD in ADM systems. As previously mentioned, these requirements are: (i) a decision, (ii) based solely on automated processing of personal data, and (iii) affecting relevant interests of the data subjects. This approach contrasts sharply with the European scenario, where the CJEU has established binding precedents on automated decision-making and national courts are following suit.

In our study of the Brazilian context, we were unable to identify in the court rulings any relevant arguments with regards to the meaning of what a *decision* is. Furthermore, the same observation is applicable to the question of what constitutes a decision based *solely on automated processing*. Our scrutiny of the rulings did not uncover any in-depth discussions about the context of the contested ADM systems, their automated processes, or the quality of human involvement. More often than not, this discussion was bypassed by a simplistic application of the traditional procedural rule of the litigant's burden of proof. In essence, the majority of cases exhibit a superficial judicial rationale regarding the applicability or non-applicability of Art. 20 of the LGPD. This problem spills over how the data subject should exercise their right to review. There

[211] *Recurso Especial nº 2.135.783/DF* [2024] Superior Court of Justice <https://scon.stj.jus.br/SCON/GetInteiroTeorDoAcordao?num_registro=202304319744&dt_publicacao=21/06/2024> accessed 31 July 2024. See n. 25-26.

are indications that previously filing a request to the data controller is a precondition to seek judicial redress. Additionally, the ambiguity around the interpretation of Art. 20 §1 LGPD reflects a jurisprudential void on the discussion of a "right to explanation" under the Brazilian data protection law, with just a few decisions utilizing the term "right to explanation" at a very high-level and poor argumentation.[212]

On the administrative front, one case warrants particular attention. A 2024 analysis by the ANPD of the TikTok case implicitly acknowledges that the outputs of recommendation systems constitute decisions based solely on automated processing.[213] TikTok asserted that its recommendation system does not produce "legally relevant effects" or "significantly impact"[214] users, arguing that various content moderation and security measures mitigate potential risks. However, the Brazilian DPA has underscored concerns regarding the platform's profiling practices for personalization purposes, particularly in relation to their potential to influence user behavior and interests. This implicit recognition points to a broad interpretation of Art. 20 of the LGPD, aligning with the approach articulated by the EDPB's guidance on targeted advertising in social networks. Notably, despite this acknowledgment, enforcement actions under Art. 20 remain limited in Brazil, with no precedent-setting cases imposing specific compliance measures on ADM systems such as TikTok's recommendation engine.

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[212] To mention just a few: *Agravo Regimental em Mandado de Segurança n, 0010259-79.2022.5.03.0000* [2022] Regional Court of Labor of the Third Region (TRT3); *Recurso Ordinário Trabalhista n. 0000219-74.2023.5.21.0041* [2023] Regional Court of Labor of the Twenty First Region.

[213] Autoridade Nacional de Proteção de Dados (ANPD), Nota Técnica nº 50/2024/FIS/CGF/ANPD, Processo nº 00261.004725/2024-81 <https://www.gov.br/anpd/pt-br/documentos-e-publicacoes/nt-50-pub.pdf> accessed January 21 2025.

[214] The GDPR-like language is noteworthy.

5) Conclusion

The comparative analysis of ADM regulations under the EU's GDPR and Brazil's General Data Protection Law reveals significant knowledge into the unfolding of the regulatory legal landscape addressing ADM systems. This article has set out to answer two research questions. First, what does a decision based solely on automated processing mean both in the EU law and Brazil's legal system? Second, what rights and legal protections do it entail for data subjects in these two jurisdictions?

In the EU, as well as under the Brazilian jurisdiction, data protection law grapples with the ambiguity of what a decision is. Neither jurisdiction offers a definitive or absolute response. Although opinions diverge among European and Brazilian scholars, a broad conception emerges from legal doctrine, which has recently been confirmed in the CJEU's SCHUFA and CK v Dun & Bradstreet Austria judgements, and hinted at by the Brazilian DPA. This is consistent with a sociotechnical perspective of ADM systems, which requires an understanding of the computer outcomes inextricably linked to the human-machine interactions on which they rely, along with the individual and social repercussions of these machine results.

A decision based solely on automated processing refers to decisions made by systems or algorithms without any meaningful human intervention. Alternatively, in semi-automated systems, it is a decision that is made with direct human intervention that does not have the capacity to significantly alter or to compromise the algorithmic-driven process. Despite the absence of an

interpretative undertaking on the part of the Brazilian courts with regard to the concept of 'decision' and the other legal elements of Art. 20 of the LGPD, scholarly work suggests that data protection law in the country may well mirror that of the EU.

Both legal frameworks emphasize the necessity of protecting data subjects from the potential adverse effects of ADM. In the EU, Art. 22 of the GDPR generally prohibits decisions based solely on automated processing that produce legal or significant effects on individuals unless specific conditions are met, accompanied by safeguards such as the right to human intervention, to express one's point of view, to contest the decision, and the right to explanation. This regulatory approach presupposes human involvement to prevent ADM systems from undermining individual rights and freedoms.

In Brazil, however, the legal framework under Art. 20 of the LGPD does not explicitly mandate human intervention but instead provides data subjects the right to request a review of decisions made solely through automated means. Recent judicial cases, such as rulings involving credit scoring systems and ride-hailing platforms reveal a judiciary grappling with the sociotechnical realities of ADM systems within the Brazilian context and how it maps onto data subjects' protections vis-à-vis algorithmic systems. While both frameworks share a commitment to protecting individuals from potential harms of ADM, their practical applications diverge significantly, reflecting somewhat different regulatory and judicial landscapes.

The SCHUFA and Dun & Bradstreet Austria cases represent important landmark precedents in the EU law applicable to ADM systems. Nonetheless, they leave key questions unresolved. Specifically, the Dun & Bradstreet court decision represents both a jurisprudential

milestone and a regulatory cautionary tale. While it affirms the legal architecture for explainability within the GDPR, it stops short of operationalizing this right in a manner that guarantees practical contestability. In light of the evolving complexity of AI-based ADM systems, further doctrinal and regulatory refinement will be essential to ensure that rights are not merely declared but are rendered actionable.

Conversely, the Brazilian LGPD, while influenced by the GDPR, is still in its nascent stages of application and enforcement. Art. 20 of the LGPD provides for the right to review decisions made solely based on automated processing, but the practical and jurisprudential implementation of this right remains underdeveloped. The Brazilian DPA has yet to establish detailed guidelines and enforcement mechanisms comparable to those of the EDPB. Also, the lack of clear legislative interpretations, such as recitals, or guidelines from the ANPD on such rights, significantly impacts the implementation of data protection in the judicial system, which would benefit from more explicit directions.

This lack of administrative clarity, interpretation and harmonization efforts from the ANPD seems to ensure not only lack of legal security in Brazil, but also a missed regulatory opportunity. While the data protection authority shies away from exercising its regulatory capacities, judicial decisions sprout with little homogeneity and timid interpretations of LGPD's ADM provisions.

Moreover, the GDPR's focus is not the endpoint of the legal analysis of ADM. The rationale behind its provisions, particularly those concerning semi-automated decision-making, highlights the risks of decision-makers placing excessive reliance on algorithmically generated

outcomes, potentially abdicating their responsibilities. This concern reflects the broader debate on the influence of ADM on human decision-making autonomy. Beyond the confines of data protection, principles such as legality, transparency and proportionality play an essential role.

These principles stem from broader legal ideals, somewhat also reflected in data protection norms, and have the potential to influence technologically mediated rules, especially those framed in vague or technology-neutral language. The rule of law principles and qualitative legality set standards for clarity and foreseeability of legal rules. These principles can significantly impact AI-based ADM systems lifecycle, especially regarding the need for material and procedural legal bases for decisions and the provision of intelligible, individualized reasons for such decisions.