BETWEEN INNOVATION AND STATE RESPONSIBILITY: ASPECTS OF THE LEGAL REGULATION OF ARTIFICIAL INTELLIGENCE IN PUBLIC POLICIES

ENTRE A INOVAÇÃO E A RESPONSABILIDADE DO ESTADO: ASPECTOS DA REGULAÇÃO JURÍDICA DA INTELIGÊNCIA ARTIFICIAL EM POLÍTICAS PÚBLICAS

ENTRE LA INNOVACIÓN Y LA RESPONSABILIDAD ESTATAL: ASPECTOS DE LA REGULACIÓN JURÍDICA DE LA INTELIGENCIA ARTIFICIAL EN LAS POLÍTICAS PÚBLICAS

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ABSTRACT

With the technological advancement of artificial intelligence (AI), its gradual consolidation as a strategic instrument in the transformation of Public Administration is evident. In this endeavor, its intensification drives gains in efficiency and innovation in the formulation and execution of public policies. On the other hand, it cannot be overlooked that its use raises significant legal and ethical challenges concerning state responsibility, transparency, algorithmic discrimination, and the protection of fundamental rights. Having observed these issues, the content of this article aims to analyze the legal regulation of AI in public policies from the perspective of the Brazilian legal system, through an approach to constitutional foundations, as well as infra-constitutional legislation that also includes draft laws in progress and international experiences in algorithmic governance. From a critical and comparative perspective, it proposes regulatory guidelines based on principles, risk assessment, human supervision, and transparency, with the aim of reconciling technological innovation, administrative efficiency, and democratic accountability. Thus, it is possible to conclude that AI regulation should be guided by an adaptive legal model that combines innovation and legality, ensuring that the technology is used in line with the values of citizenship, public ethics, and social justice.

Keywords: Artificial Intelligence. Public Policies. Administrative Law. Algorithmic Governance. State Responsibility. Innovation.

RESUMO

Com o avanço tecnológico da inteligência artificial (IA), verifica-se a sua paulatina consolidação como um instrumento estratégico na transformação da Administração Pública Nesse mister, o seu recrudescimento impulsiona a ocorrência de ganhos de eficiência e inovação na formulação e execução das políticas públicas. De outra banda, não se pode olvidar que da sua utilização emergem desafios jurídicos e éticos expressivos, concernente à responsabilidade estatal, transparência, discriminação algorítmica e a proteção dos direitos fundamentais. Tendo observado estas questões, o conteúdo deste artigo visa analisar a regulação jurídica da IA nas políticas públicas sob a perspectiva do ordenamento jurídico brasileiro mediante a abordagem dos fundamentos constitucionais, bem como da legislação infraconstitucional que comportam também projetos de lei em tramitação e as experiências

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internacionais de governança algorítmica. Na perspectiva de uma abordagem crítica e comparada, propõe diretrizes regulatórias fundadas em princípios, avaliação de riscos, supervisão humana e transparência, com o escopo de compatibilizar inovação tecnológica, eficiência administrativa e accountability democrática. Dessa forma, é possível concluir que a regulação da IA deve ser orientada por um modelo jurídico adaptativo, que conjugue inovação e juridicidade, assegurando que a tecnologia seja utilizada em sintonia com os valores da cidadania, ética pública e justiça social.

Palavras-chave: Inteligência Artificial. Políticas Públicas. Direito Administrativo. Governança Algorítmica. Responsabilidade do Estado. Inovação.

RESUMEN
Con el avance tecnológico de la inteligencia artificial (IA), se hace evidente su consolidación gradual como instrumento estratégico en la transformación de la Administración Pública. En este sentido, su intensificación impulsa mejoras en la eficiencia y la innovación en la formulación y ejecución de políticas públicas. Por otro lado, es fundamental que su uso plantee importantes desafíos jurídicos y éticos en materia de responsabilidad estatal, transparencia, discriminación algorítmica y protección de los derechos fundamentales. A partir de estas cuestiones, este artículo busca analizar la regulación legal de la IA en las políticas públicas desde la perspectiva del sistema jurídico brasileño, a través de un enfoque de los fundamentos constitucionales, así como de la legislación infraconstitucional, que también incluye proyectos de ley en curso y experiencias internacionales en gobernanza algorítmica. Desde una perspectiva crítica y comparativa, se proponen directrices regulatorias basadas en principios, evaluación de riesgos, supervisión humana y transparencia, con el objetivo de conciliar la innovación tecnológica, la eficiencia administrativa y la rendición de cuentas democrática. Así, se concluye que la regulación de la IA debe guiarse por un modelo jurídico adaptativo que combine innovación y legalidad, garantizando que la tecnología se utilice en consonancia con los valores de ciudadanía, ética pública y justicia social.

Palabras clave: Inteligencia Artificial. Políticas Públicas. Derecho Administrativo. Gobernanza Algorítmica. Responsabilidad del Estado. Innovación.

1 INTRODUCTION

In recent times, the assimilation and incorporation of artificial intelligence (AI) into government structures has represented a paradigmatic inflection point in the configuration of the contemporary State. Beyond a mere technological innovation, it is a phenomenon of a legal-institutional nature that redefines the contours of administrative action, requiring the reformulation of classic categories of Public Law, such as legality, discretion, transparency and, obviously, state responsibility.

The so-called Public Administration 4.0 emerges in a context of increasing digitization of services, as well as the intensive use of data and automation of decisions, driven by regulatory frameworks such as Law No. 14,129/2021 (Digital Government Law) and the Brazilian Strategy for Artificial Intelligence (EBIA, 2021). These normative instruments reflect a global trend of insertion of AI as a tool for administrative efficiency and rationality, but also manifest new tensions between innovation and legality.

From a legal point of view, artificial intelligence challenges traditional administrative dogmatics by introducing a non-human decision-making agent, whose operating logic is probabilistic, not deterministic – often opaque. The algorithmic opacity (Yeung, 2019) and the autonomous nature of AI systems call into question the possibility of clear imputation of responsibility and, consequently, social control over public decisions.

Such transformations demand a new model of public regulation, based not only on formal compliance with the law, but also on adaptive principles of algorithmic governance, capable of incorporating technological mutability and emerging ethical risks. In this context, the Theory of Adaptive Regulation and Hybrid Governance for Public AI emerge as relevant theoretical frameworks for the construction of a responsive, empirical, and interdisciplinary Administrative Law.

In view of this, the present study aims to investigate how the Brazilian legal system can structure an effective, democratic and ethical regulatory framework for the use of artificial intelligence in public policies, in a way that reconciles administrative efficiency and technological innovation with the protection of fundamental rights and the objective liability of the State. Therefore, the methodological approach adopts an analytical-comparative perspective, supported by empirical evidence, theories of adaptive regulation, and consolidated international experiences, especially those from the OECD, the European Union, and UNESCO.

It is understood that the incorporation of artificial intelligence in government structures represents one of the most significant inflections of the contemporary State, not only from a technological point of view, but above all from a legal and institutional point of view. Public Administration 4.0 emerges as a model based on decision-making automation, big data, and predictive analytics, which redefines the traditional ways of planning and executing public policies.

However, this advance is not neutral. The use of algorithms in state decisions — such as selection of beneficiaries of social programs, resource distribution, or tax enforcement — raises concerns related to the violation of fundamental rights, algorithmic opacity, and state civil liability. The promise of efficiency must be balanced by the imperative of legality and democratic *accountability*.

The Brazilian State, driven by Law No. 14,129/2021 (Digital Government Law) and several digital transformation strategies, has been expanding the use of AI in public policies. However, the absence of a consolidated legal framework for artificial intelligence creates a zone of normative uncertainty.

Thus, this article aims to analyze, in the light of constitutional principles and the theory of public governance, how the Law can regulate the use of artificial intelligence in public policies, reconciling technological innovation, public ethics and state responsibility.

2 RESEARCH PROBLEM

How could the Brazilian legal system be able to constitute an effective, democratic, and ethical regulatory framework for the use of artificial intelligence in public policies, in order to reconcile administrative efficiency and technological innovation with the protection of fundamental rights and the State's strict liability?

3 HYPOTHESES

To guide the research, we will take as a basis the following hypotheses:

- The lack of a specific legal framework for the use of artificial intelligence in public management causes legal uncertainty, liability gaps, and risks to administrative legality.
- It is possible to build a regulation based on constitutional principles and algorithmic governance techniques, ensuring transparency, explainability, and social control.
- The incorporation of international regulatory standards (OECD, European Union, UNESCO) can guide Brazil in the creation of a hybrid normative model, centered on rights and innovation.

4 OBJECTIVES

4.1 GENERAL OBJECTIVE

Consult and reflect on the legal and institutional foundations of the regulation of artificial intelligence applied to public policies, evaluating its impacts on the principles of Public Administration, as well as state responsibility.

4.2. SPECIFIC OBJECTIVES

- Understand the relationship between efficiency, innovation and administrative legality;
- Identify the ethical and legal risks arising from decision-making automation;
- Analyze the comparative experiences of AI regulation;
- Propose normative guidelines and governance models applicable to the Brazilian context.

5 THEORETICAL FRAMEWORK

The combination of law, technology and public policy requires an interdisciplinary approach, whose theories and concepts specified below are at the forefront:

5.1 INNOVATION THEORY AND PUBLIC ADMINISTRATION

According to Schumpeter (1934), innovation is the driver of socioeconomic transformation, since it originates from "new combinations" of resources. In the public sector, this logic is reinterpreted as administrative innovation, meaning the introduction of practices that increase the effectiveness of policies, as well as social control (*Bresser-Pereira, 2008; Osborne & Brown, 2011*).

Peter Drucker (1998) already stated that innovation is not a mere technological creation, but an essential management function — which, in the State, translates into results-oriented governance.

5.2 CONTEMPORARY ADMINISTRATIVE LAW

The new hermeneutics of Administrative Law (Justen Filho, 2020; Di Pietro, 2021) breaks with rigid formalism, admitting administrative innovation as an expression of the principle of efficiency, as long as it is compatible with public legality and morality. Therefore, innovation is legitimate when it is an instrument for the realization of the public interest.

Nevertheless, Moreira Neto (2020) warns that technological efficiency cannot subvert the principle of legality: every binding or discretionary administrative act, even if automated, must be linked to normative foundations and be subject to control.

5.3 ETHICS AND ALGORITHMIC GOVERNANCE

The expansion of both artificial intelligence and algorithmic systems redefines the structures of decision, control, and knowledge production. Therefore, it requires new ethical and regulatory approaches. Algorithmic ethics aims to coordinate both the development and use of these technologies, drawing on values such as justice, equity, privacy, and human dignity. In addition, it assumes the responsibility of facing dilemmas, such as: discriminatory bias, lack of transparency and manipulation of individual autonomy. Algorithmic governance, on the other hand, refers to institutional, legal, and technical mechanisms aimed at regulating, supervising, and holding algorithms accountable, covering dimensions such as transparency, auditability, adaptive regulation, institutionalized ethics, and human control.

On the international scene, organizations such as the OECD, UNESCO, and the European Union have proposed guidelines guided by the principles of responsibility, non-maleficence, and sustainability, exemplified by the *European AI Act* and, in Brazil, by PL No. 2338/2023, which introduces parameters of transparency and human oversight. Despite the advances, some challenges remain related to the practical implementation of these standards, as well as to the technical capacity of algorithmic auditing and the balance between innovation and regulation.

The establishment of ethics and algorithmic governance as pillars of responsible AI is notorious, since they are aimed at building a technological ecosystem aligned with the common good and democratic values. Therefore, the consolidation of this paradigm requires participatory governance, adaptive regulation, and radical transparency, ensuring that technological progress translates into social justice and sustainability.

5.4 RECENT THEORETICAL CONTRIBUTIONS TO THE REGULATION OF GOVERNMENT AI

The field of legal regulation of artificial intelligence applied to the public sector has been enriched by emerging theoretical approaches that articulate data science and computational ethics with the theory of the State. The following are five main contributions that expand the scientific framework of this study:

a) Theory of Adaptive Regulation for Emerging Technologies

Inspired by the works of Ranchordás (2021), Gasser and Almeida (2017) and Veale (2019), the Theory of Adaptive Regulation proposes that Law adopts an evolutionary and experimental model in the face of rapidly and constantly changing technologies. This theory replaces the static command-and-control paradigm with flexible mechanisms of regulatory feedback, *regulatory sandboxes*, and continuous institutional learning. In public contexts, this implies the creation of standards capable of being tested, monitored, and improved according to the technological and social maturity of AI systems. Therefore, the principle of legal certainty is reconciled with regulatory adaptability, fostering responsible innovation without abdicating state control.

b) Hybrid Governance Theory for Public AI

The theory of Hybrid Governance (Calo & Citron, 2019; Ranchordás, 2021) argues that AI regulation should combine state legal instruments with collaborative co-regulation and supervised self-regulation mechanisms. This hybrid governance recognizes the complexity of public AI and proposes the articulation between control bodies, civil society, the private sector, and academia, forming multi-actor regulatory ecosystems. In the Brazilian case, this model can strengthen not only democratic *accountability*, but also technical transparency and social control over automated decisions that impact fundamental rights.

c) Taxonomy of Risks in Government AI

Derived from the European model (AI Act, 2024) and having been improved by studies by the OECD (2023) and ENAP (2024), the Risk Taxonomy classifies AI systems according to the potential impact on the legal sphere of citizens. This implies the definition of levels of risk — minimal, limited, high, and unacceptable — that guide the intensity of regulation, the duties of transparency, and the requirements of human supervision. This scientific approach enables proportional regulation, calibrated according to the severity of the effects of automation on fundamental rights, finally reinforcing the principle of administrative reasonableness.

d) Right to Significant Human Resources

Consolidated in international doctrine (Wachter, Mittelstadt & Floridi, 2017; Yeung, 2019), the *Right to Meaningful Human Review* determines that any decision automated by the State – which may affect legitimate rights or interests – must be subject to

substantial human review and not merely formal. This right complements article 20 of the LGPD and reinforces due process in the algorithmic context, ensuring adversarial proceedings, review, and explainability. In the field of Administrative Law, this principle imposes the need for "significant human oversight" as a condition for the validity of automated public decision-making.

e) Scientific Evidence on Algorithmic Biases in the Brazilian Context

Recent research coordinated by institutions such as FGV, NIC.br, ITS Rio, and USP (2022–2024) reveals that systems used in public policies reproduce race, gender, and territory biases, with emphasis on facial recognition, predictive credit analysis, and benefit screening. These studies empirically reinforce the need for algorithmic *impact assessments (*EIA) and external audits, aiming at the prevention of possible structural discrimination. Such scientific evidence consolidates the principle of impersonality (art. 37, caput, CF/88) and supports the formulation of public policies based on data and evidence (*evidence-based policymaking*).

Thus, it can be seen that these five theoretical contributions — adaptive regulation, hybrid governance, risk taxonomy, right to significant human resources, and scientific evidence on biases — constitute a robust theoretical framework for the construction of a democratic, transparent, and scientifically based Brazilian algorithmic governance model.

Represented by Floridi (2023), Yeung (2019), and Cath (2018), the international literature proposes an *algorithmic governance* based on transparency, explainability, and meaningful human control. These authors argue that state automation without review and accountability mechanisms has the capacity to compromise human rights, along with the democratic legitimacy of public power. Consequently, the theoretical framework points to the need for an algorithmic public ethics, based on legality, transparency, equity and accountability.

6 LEGAL BASIS

6.1 CONSTITUTIONAL PRINCIPLES

The use of Artificial Intelligence (AI) systems by the State must be guided by the constitutional principles that govern Public Administration, according to the provisions of article 37, caput, of the Federal Constitution of 1988. Such principles — legality,

impersonality, morality, publicity, and efficiency — are indispensable parameters to legitimize administrative action in the digital and automated environment.

It is understood that the principle of legality requires that every administrative action be supported by the legal system, so that the development and use of decision-making algorithms by the Public Administration are only justified if there is an express normative basis, prohibiting administrative innovation dissociated from the law (DI PIETRO, 2023). Therefore, automated action without adequate legal basis may constitute an excess of technological power, a category derived from the abuse of administrative power adapted to today's new digital dynamics.

With regard to administrative morality, it is required that AI be used in line with ethical duties and the principle of objective good faith, aiming at the achievement of the public purpose and the promotion of the collective interest (MEIRELLES, 2018). The principle of impersonality, on the other hand, imposes technical neutrality and prohibits the reproduction of discriminatory biases in the algorithms used, and the State has the duty to guarantee the equitable and isonomic treatment of citizens, in line with article 5, caput, of the Federal Constitution.

The principle of publicity reinforces the duty of algorithmic transparency, ensuring that automated decisions are auditable, explainable, and subject to internal and social control (MENDES; BRANCO, 2023). Thus, it is understood that this fact implies the need for documentation of decision-making processes and comprehensible disclosure of criteria used by automated systems. Finally, the principle of efficiency justifies the use of AI as an instrument for improving public management, as long as such use does not compromise fundamental rights, nor reduce the reliability of the decision-making process.

These principles dialogue with the fundamental rights provided for in article 5 of the Federal Constitution, among which the following stand out: the right to privacy and honor (item X), the confidentiality of data (item XII), due process of law and the right to be heard (items LIV and LV), and access to information (item XXXIII). Therefore, it is up to the State to ensure proportionality between the protection of individual rights and technological innovation, under penalty of incurring in abuse of technological power – a concept under development in the doctrine that designates the disproportionate, opaque or harmful use of technology by the Public Administration (SARLET; MARINONI, 2024).

6.2 INFRA-CONSTITUTIONAL LEGISLATION AND INTERNATIONAL FRAMEWORKS

At the infra-constitutional level, Law No. 13,709/2018 (General Law for the Protection of Personal Data – LGPD) stands out, which establishes principles and obligations directly applicable to the use of AI systems. Article 20 of the LGPD ensures the data subject the right to review decisions made solely on the basis of automated processing, and human intervention and explanation of the criteria used must be provided. In addition, the LGPD enshrines the principle of transparency (art. 6, VI) and imposes on the State – as controller of personal data (art. 23) – the duty to ensure unequivocal, pertinent and accessible information regarding automated data processing.

Establishing guidelines for responsible innovation, digital accessibility, and technological impact assessment (articles 4 and 26) is one of the commitments determined by the ethical and responsible use of emerging technologies, whose Law No. 14,129/2021 (Digital Government Law) also reinforces the need. The diploma aims to reconcile the technological advancement of the Public Administration with the observance of fundamental rights, as well as the promotion of administrative transparency.

On the legislative level, Bill No. 2,338/2023, which proposes the Legal Framework for Artificial Intelligence in Brazil, establishes guiding principles such as transparency, harm prevention, accountability, and human supervision of AI systems. The text also proposes a risk classification for AI systems — from low to high risk — associating each category with different governance and auditing obligations. This model seeks to harmonize technological innovation with the protection of rights, aligning Brazil with international regulatory frameworks.

In the comparative scope, there is a global movement in favor of ethical and technical regulation of AI. The Organization for Economic Co-operation and Development (OECD), in its 2019 Guidelines, established principles for the trusted use of AI, based on transparency, technical robustness, responsibility, and the promotion of human well-being. The European Union, through the *AI Act* (2024), adopted a regulatory model based on risk and mandatory algorithmic auditing, focusing on the prevention of social harm and the protection of fundamental rights. UNESCO, in its Recommendation on the Ethics of Artificial Intelligence (2021), emphasizes an approach centered on human rights, cultural diversity, and sustainability, reinforcing the need for global governance of technology.

These normative frameworks and international guidelines show the consolidation of a legal-ethical paradigm of Artificial Intelligence governance, guided by the search for a balance

between technological innovation, administrative efficiency, and the preservation of human dignity. The progressive internalization of these principles in the Brazilian legal system contributes to the strengthening of democratic legitimacy, public trust, and legal certainty in the state adoption of AI.

6.3 CIVIL LIABILITY OF THE STATE

The civil liability of the State, in the context of public automation, is one of the most challenging themes of the modern theory of Administrative Law. Article 37, paragraph 6, of the Federal Constitution of 1988 establishes the strict liability of the State for the damages that its agents cause to third parties, based on the theory of administrative risk. However, the insertion of artificial intelligence in administrative activity substantially changes the classic configuration of this responsibility.

As Di Pietro (2023) observes, the element of "agent action" — a presupposition of state responsibility — acquires new dimensions when the decision is partially or fully automated. Delegating decision-making tasks to algorithms does not eliminate the nexus between the state and harm, but rather reconfigures the chain of imputation, requiring consideration of technical factors such as training failures, data biases, and the absence of meaningful human oversight.

Recent doctrine (Pereira Filho and Lima, 2024; Ranchordás, 2021) has been proposing the concept of shared algorithmic liability, according to which the State is objectively liable for damages resulting from automated decisions, without prejudice to any right of recourse against the system provider or contract manager. This co-responsibility derives from the idea of technological risk, whereby the Administration, by adopting advanced technology, assumes the burden of the risks inherent to its use, and must ensure control, auditing and human review mechanisms.

Foreign literature also reinforces this trend. Eubanks (2018) and Wachter and Mittelstadt (2017) demonstrate that algorithmic exclusion in public policies, such as granting social benefits or tax inspection, can generate moral and material damages comparable to those of traditional unlawful administrative acts. Thus, state civil liability expands to encompass harmful algorithmic acts, even if resulting from apparently neutral or automated decisions.

At the normative level, the General Data Protection Law (Law No. 13,709/2018), in its article 20, guarantees the holder the right to request review of automated decisions,

introducing the principle of meaningful *human review*, which is now part of the due administrative legal process in digital environments. This right reinforces the duty of permanent human oversight, also recognized in international frameworks, such as the *AI Act* (European Union, 2024) and the UNESCO Guidelines (2021).

In short, it is understood that, in the algorithmic era, the civil liability of the State demands a systemic rereading of the constitutional principles of legality, efficiency, and impersonality. The State cannot use the argument of technological delegation to exempt itself from responsibilities. It is necessary to ensure that administrative innovation remains under the parameters of legality and full protection of rights. That said, the contemporary challenge lies in the development of a responsive civil liability model, based on risk assessment, technical transparency and quick repair, which can provide a balance between innovation and administrative justice.

The strict liability provided for in article 37, paragraph 6, of the CF/88 extends to automated activities. According to Di Pietro (2023), the State is responsible for the damage caused by agents, even when replaced by technical systems under its management. Following this understanding, algorithm errors that cause losses – such as denial of benefits, discrimination or undue exclusion – constitute an injurious administrative act, and reparation is applicable. Therefore, the State may exercise the right of recourse against the technology supplier, provided that technical fault or development failure is proven.

In view of the lack of full confidence in the results proposed by artificial intelligence, jurisprudence tends to recognize the accuracy of permanent human supervision. In this sense, it is necessary to recognize the possibility of *shared algorithmic responsibility*, between the State, contractor and developer, based on the theory of technological risk, as a form of fair implementation of technology in conjunction with social justice, which is the duty of the State.

7 ANALYSIS AND DISCUSSION

7.1 CASE STUDIES IN BRAZIL

The adoption of Artificial Intelligence (AI) systems by the Brazilian Public Administration has produced ambiguous results: on the one hand, it enhances efficiency and decision-making speed; on the other hand, it raises constitutional and ethical concerns related to transparency, human review, and the protection of fundamental rights.

A paradigmatic example is the "Athena" Project, developed by the National Institute of Social Security (INSS), which uses AI for the automated screening of applications for social security benefits. Although the system has contributed to reducing procedural slowness and optimizing the analysis of requests, there have been multiple complaints of automatic rejections without adequate justification, which shows the absence of effective human review and lack of transparency in the decision-making criteria. Such practice violates article 20 of Law No. 13,709/2018 (LGPD), which guarantees the holder the right to review automated decisions, and compromises constitutional principles such as due process of law and the motivation of administrative acts (article 5, items LIV and LV, and article 93, IX, of the FC).

Another relevant case is that of the Federal Revenue of Brazil, which has been using the so-called "Algorithmic Fine Mesh" for automated detection of tax inconsistencies. Despite its efficiency in collecting and combating tax evasion, this model has been the target of criticism regarding the proportionality of data processing, the protection of tax secrecy (article 198 of the CTN) and the absence of clear mechanisms for automated contestation. Tax automation, without algorithmic governance parameters, can constitute a risk of violation of tax legality and due process of taxation.

The Government of the State of São Paulo has implemented facial recognition systems in the field of public security, with the aim of identifying fugitives and increasing the efficiency of police operations. However, civil society organizations and human rights entities have denounced possible violations of the rights to privacy, image, and racial non-discrimination, arguing that the use of AI in public security lacks impact assessment, transparency, and human oversight. These risks find critical support in article 5, caput and item X, of the Federal Constitution, and in the principle of substantial equality, in addition to being related to the international prohibition of discriminatory technological practices (cf. UNESCO, Recommendation on the Ethics of Artificial Intelligence, 2021).

These cases illustrate that technological innovation devoid of adequate governance can culminate in the so-called 'automated arbitrariness', an expression that designates the transfer of discretionary power from the public agent to the algorithm without institutional control. It is a contemporary form of misuse of administrative power, in which the state authority hides under the technical neutrality of the machine, emptying democratic control and the principle of administrative legality.

7.2 CENTRAL LEGAL CHALLENGES

The implementation of AI systems in the Brazilian public sector imposes structural legal challenges that require specific regulation and institutional control mechanisms.

The first challenge is the algorithmic opacity (*black box problem*), which consists of the difficulty of understanding or auditing the decisions produced by complex AI models, especially those based on *machine learning*. This opacity compromises the principle of publicity (article 37, caput, FC) and access to information (article 5, XXXIII, FC), hindering effective judicial protection and social control. Without algorithmic explainability, there is no due process or possibility of reasoned challenge.

The second challenge is algorithmic discrimination, a phenomenon resulting from the reproduction of biases present in training databases. This practice directly violates the principle of isonomy (article 5, caput, FC) and the duty of administrative impersonality, and may generate indirect discrimination on the basis of race, gender, class or territory. The absence of mechanisms for mitigating and auditing biases is, therefore, a material violation of substantial equality.

The third obstacle is the deficit of *accountability*, that is, the difficulty of attributing civil, administrative or criminal liability in case of damage resulting from automated decisions. In complex and decentralized systems, it becomes nebulous to identify the responsible legal subject – whether the programmer, the public manager, the contracting agency or the technology supplier – which weakens the state liability regime provided for in article 37, paragraph 6, of the Federal Constitution.

Finally, there is a lack of normative standardization, resulting from the lack of a consolidated regulatory framework on AI in the Public Administration. The current legislative dispersion (LGPD, Digital Government Law, AI bills) prevents the uniformity of practices and the definition of minimum technical parameters for governance, transparency, and impact assessment.

These challenges highlight the urgency of instituting a National Policy on Algorithmic Governance, which establishes principles, responsibilities, and ethical and technical oversight mechanisms for the use of AI in the public sector. International models offer consistent references, such as the *Data Ethics Framework*, adopted by the UK government, and the *Algorithmic Impact Assessment* (AIA), implemented in Canada, both aimed at the prior assessment of the ethical, legal and social risks of automated systems. In view of the above, the incorporation of analogous practices in the Brazilian legal system would

undoubtedly represent a significant advance in the consolidation of a digital State that is not only democratic, but also transparent and accountable.

8 PROPOSALS AND GOOD REGULATORY PRACTICES

The construction of an effective regulatory framework for the use of Artificial Intelligence (AI) in the public sector requires a polycentric and adaptive approach, which coordinates constitutional principles, appropriate risk management, and continuous institutional learning. The challenge lies not only in moderating the use of algorithms, but also in ensuring that the technology is properly submitted to the foundations of the Democratic Rule of Law, providing transparency, equity and public accountability.

From a constitutional point of view, the regulation of AI must be supported by the principles provided for in article 37 of the Federal Constitution – legality, impersonality, morality, publicity, and efficiency – to which the values of equity and the protection of fundamental rights are incorporated (article 5, FC). The due principles make up the normative core of algorithmic administrative action, demarcating the legitimate field of technological innovation in public management.

From the methodological point of view, the proposal for the adoption of a hybrid regulatory model is presented, conceived by three interdependent axes:

1. Regulation by principles, which guides the formulation of AI policies in accordance with the Constitution and the General Data Protection Law (Law No. 13,709/2018), ensuring the centrality of fundamental rights and respect for administrative legality;

2. Risk-based regulation, which classifies AI systems according to the degree of potential impact on individual and collective rights, inspired by the *European Union's AI Act (2024), which differentiates between low, medium, and high-risk systems;*

3. Responsive regulation, based on continuous institutional learning, through periodic review of norms and policies, in accordance with the principle of efficiency and the idea of adaptive governance.

8.1 PROPOSED GUIDELINES

To operationalize this model, the following governance guidelines and good regulatory practices applicable to the Public Administration are proposed:

1. Creation of a national public registry of AI systems used by the State, with information on purpose, database, technical responsible, and management bodies. This measure

implements the principles of publicity and active transparency, provided for in the Access to Information Law (Law No. 12,527/2011), and allows social and institutional control over the use of sensitive technologies;

2. Institution of mandatory human supervision in high-impact automated decisions, such as granting benefits, imposing sanctions, or recognizing people. This guideline stems from article 20 of the LGPD and the principle of human dignity, ensuring that the final decision-making authority remains under human scrutiny;

3. Periodic Algorithmic *Impact Assessment* (EIA), in order to measure risks to privacy, equality and legality, as well as to promote preventive mitigation of damages;

4. Requirement of technical transparency and algorithmic documentation, including operation reports, training parameters, performance metrics, and decision logs. Such mechanisms strengthen auditability and allow the reconstruction of decision-making rationality for the purposes of judicial and administrative control;

5. Promotion of digital education, technological ethics and legal training of public servants, aimed at understanding the technical and normative foundations of AI. This measure is essential to reduce the informational asymmetry between legal operators and technology developers, fostering an institutional culture of responsible innovation.

In summary, the polycentric and responsive regulation of Artificial Intelligence in the public sector must balance innovation and protection of rights, combining preventive mechanisms (impact assessments and transparency) with corrective mechanisms (human review and accountability). This regulatory architecture is indispensable to the consolidation of a republican algorithmic governance, in which the use of technology becomes an instrument for expanding – and not restricting – constitutional guarantees.

9 CONCLUSION

The advancement of Artificial Intelligence (AI) in the public sector represents one of the greatest contemporary challenges for Administrative Law and the Democratic Rule of Law. The incorporation of algorithmic technologies into public policies, although it brings evident gains in efficiency and speed, imposes on the Brazilian legal system the task of building a normative regime that reconciles technological innovation and democratic legitimacy.

The Public Administration, when adopting AI systems, cannot fully transfer to machines the decision-making that affects individual or collective rights, under penalty of violating the principle of administrative legality — a contemporary expression of the principle of legality — and eroding the public trust that sustains the democratic pact. The replacement of human judgment by automated decisions, without adequate supervision and review mechanisms, may constitute a new form of misuse of technological power, incompatible with the Federal Constitution and the protection of fundamental rights.

It is, therefore, imperative to develop a legal and ethical framework for Artificial Intelligence, which ensures compatibility between the use of technology and the constitutional values that structure Public Administration. Such a framework must be anchored in the principles of legality, morality, publicity, efficiency and impersonality (art. 37, caput, FC), as well as in the State's strict liability for damages resulting from automated decisions (art. 37, §6, FC). In addition, it must provide algorithmic governance mechanisms that ensure transparency, auditability, human review, and institutional control.

The future of digital public innovation will not depend only on technological sophistication, but on the legal and ethical maturity of institutions. True state modernization requires that AI be an instrument for expanding citizenship, social justice, and democratic *accountability*, and not for technocracy or exclusion.

Thus, the path to a constitutionally committed digital State passes through the consolidation of a republican algorithmic governance, in which the use of intelligent systems is subject to fundamental rights and the supremacy of the public interest, reaffirming technology's commitment to human dignity, equality, and access to justice.

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