

Research Article

**Toward Algorithmic Due Process:
Constitutional Challenges and Human Rights Risks in Indonesia's Digital State**

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ABSTRACT

The digital transformation of state governance has engendered a novel form of algorithmic authority that exerts a direct influence on human rights. In Indonesia, administrative determinations derived from digital systems, such as the Computer Assisted Test for civil service recruitment, the Integrated Social Welfare Database, digital identity applications, and inter-agency data integration facilitated by the One Data Indonesia initiative, are frequently executed without transparency, correction mechanisms, or accessible legal recourse. This scenario engenders a substantial disparity between the constitutional tenet of due process and the actualities of automated public decision-making. This scholarly inquiry endeavors to articulate the notion of algorithmic due process as a unique constitutional safeguard that transcends procedural fairness, administrative due process, and digital due process. Employing normative legal methodologies in conjunction with a socio-legal perspective, this research scrutinizes the Indonesian legal framework's responsiveness to the challenges engendered by algorithmic authority. The results indicate that Indonesia is deficient in adequate normative foundations to govern algorithmic justice and safeguard fundamental rights. Consequently, the study advocates for a model of algorithmic due process predicated on the rights to explanation, correction, and legal challenge, situated within the overarching theoretical paradigm of Rule of Law 5.0. The study underscores an imperative for constitutional reform to establish definitive standards for algorithmic governance in the realm of public services.

Keywords: Algorithmic Due Process; Constitutional Justice; Automated Public Decision-Making

A. INTRODUCTION

The development of digital governance systems in Indonesia has given rise to algorithm-based public decision-making practices that are not accompanied by adequate procedural guarantees (Gur, 2022); (de Magalhães Santos, 2024); (Elmahjub, 2025); (Setyawan et al., 2025). One concrete legal issue that emerges is the absence of legal mechanisms ensuring human rights to understand, correct, or legally challenge administrative decisions generated by automated

systems. In the context of constitutional law, this raises serious questions regarding the extent to which the principle of due process of law the cornerstone of the rule of law can be upheld in an era where algorithmic authority is expanding but remains largely unaccountable.

Empirically, the ramifications of algorithmic systems within public services are becoming increasingly evident. Mechanisms such as the Computer Assisted Test (CAT) utilized for civil servant recruitment, the Integrated Social Welfare

Database (DTKS), digital identity initiatives, and inter-agency data integration through the One Data Indonesia program have emerged as pivotal tools in administrative decision-making (Sarjito, 2025); (Muhaimin, Astuti, & Ayuningtyas, 2025). Nevertheless, a multitude of public grievances suggests that the determinations rendered by these digital systems frequently lack transparency, exhibit deficiencies, and are impervious to legal remediation, in stark contrast to the principles of transparency and explainability in the application of artificial intelligence as delineated in the UNESCO Recommendation on the Ethics of Artificial Intelligence (UNESCO, 2022). These principles transcend mere technical specifications; they represent normative imperatives essential for ensuring accountability, contestability, and procedural equity in automated decision-making.

Individuals who are excluded from social assistance registries due to data inaccuracies or applicants who face disadvantages stemming from automated evaluation frameworks are devoid of any legal recourse for obtaining explanations or pursuing appeals.

This condition reflects a significant gap between ideal legal principles (*das sollen*) and the realities of legal practice (*das sein*). Normatively, Article 28D (1) of the 1945 Constitution guarantees the right to recognition, guarantees, protection, and fair legal certainty. In practice, however, algorithm-based systems have created a legal blind spot in public administration

governance, untouched by conventional legal mechanisms (Laidlaw, 2008). Algorithmic power operates without transparency, accountability, or legal forums where citizens can file objections or seek redress despite the obligation under the Indonesian Electronic Information and Transactions Law that electronic systems and automated decisions must remain transparent and legally accountable (Liu, Lin, & Chen, 2019); (Kinchin, 2024). This directly opposes the tenets of the rule of law and has triggered a legitimacy crisis regarding algorithmically-generated administrative decisions (Lindqvist, 2018).

This phenomena is not simply a theoretical issue. In the DTKS case, the Ministry of Social Affairs indicated that around 1.8 million beneficiaries were eliminated from the social assistance database during the data verification and updating procedures in 2024, many of whom were subsequently determined to be excluded due to erroneous or obsolete data, while no efficacious legal framework was available to amend such inaccuracies (Almutaqin, 2025). The CAT findings in public servant recruitment have frequently been disputed due to the ambiguity in the system's evaluative rationale. Official figures from the Indonesian Ombudsman indicate a significant rise in public complaints, escalating from 8,452 reports in 2023 to 10,846 reports in 2024, reflecting an increase of nearly 28% (Ombudsman Republik Indonesia, 2025). Substantively, the most frequently reported forms of maladministration involved prolonged delays

(33.86%), failure to provide services (30.31%), and procedural deviations (20.61%), all of which directly implicate procedural fairness and access to public services. Although only 0.5% of the closed cases were formally classified as 'discrimination', Normatively assessed, the dominance of procedural failures, service denial, and data-related maladministration in public services reflects structural risks of exclusionary and potentially discriminatory effects in digital governance, even though such patterns are not formally labelled as 'digital discrimination' in official institutional statistics. These figures demonstrate that algorithmic injustice is not a speculative future risk, but an ongoing governance problem that has tangible consequences for access to public services and the effective enjoyment of constitutional and human rights guarantees

In this context, the urgency of this research becomes evident. Although constitutional law literature has long discussed human rights and the principles of the rule of law, very few studies directly address algorithmic authority as a new form of power that is yet to be accommodated within the national legal system (Abrusci & Mackenzie-Gray Scott, 2023). This normative gap forms the foundational reason for this study to address the absence of legal protection for algorithmic due process as a component of constitutional safeguards in the era of the digital state.

Based on an academic review of prior literature, several studies have examined algorithmic decision-making from different legal perspectives. Enarsson et al. in *Hybrid Human Algorithm Decision-Making* examine the significance of human oversight in algorithm-assisted public administration and underscore institutional accountability; however, their research concentrates on hybrid governance design without delineating a specific procedural rights framework for automated state decisions (Enarsson, Enqvist, & Naarttjärvi, 2022). Kinchin, in *The Procedural Gap in Algorithmic Justice*, notes the lack of voice, transparency, and participation processes in algorithmic systems, although limits the analysis to a theoretical diagnostic without proposing a constitutional paradigm for procedural protection (Kinchin, 2024).

Saputra et al. in "Judicial Accountability in the Algorithmic Era" investigate black-box dangers in judicial aid and the degradation of judicial thinking, but confine their analysis to adjudication rather than administrative decision-making (Saputra, Irwanto, & Nurisnah, 2025).

Fourth, Sarjito and Djati in *Administrative Justice in Algorithm-Based Social Assistance* illustrate how algorithmic opacity compromises equity in welfare allocation; nevertheless, the analysis is limited to a specific sector and rooted in administrative ethics (Sarjito & Djati, 2025). Fifth, Wahyuningtyas in *Algorithmic Decision-Making and Data Subject Autonomy* emphasizes

consent and data protection, positioning algorithmic governance chiefly as a privacy concern rather than a constitutional procedural issue (Wahyuningtyas, 2024).

Distinct from these studies, this research does not concentrate on institutional hybridization, distributive fairness, judicial assistance, sectoral administrative ethics, or data protection regimes. Instead, it specifically formulates algorithmic due process as a constitutional instrument to address the procedural void in automated public decision-making by the state. Although previous studies have identified accountability risks, transparency deficits and autonomy concerns, none have developed a coherent procedural rights model based on constitutional due process for state algorithmic systems. By constructing the Rule of Law 5.0 framework and articulating rights to explanation, correction, and legal challenge, this study fills the existing gap by reconstructing due process as a constitutional safeguard against non-human public power.

Based on the foregoing description, this study comprehensively analyzes two key questions: First, what constitutional principles are violated when algorithmic-based decisions lack transparency and correction mechanisms? Second, how can algorithmic due process be designed as a constitutional safeguard to protect human rights within a digital state? The purpose of this research is to formulate the concept of algorithmic due process that can be adopted into Indonesia's legal system as part of reinforcing

the rule of law. Theoretically, the study contributes to broadening the scope of constitutional law in addressing algorithmic authority; practically, it offers a normative model that may serve as the basis for national legal reform in facing the challenges of the digital era.

B. RESEARCH METHODS

This research employs a normative legal method (doctrinal legal research) with a prescriptive and reconstructive orientation to analyze the interaction between constitutional norms and the exercise of algorithmic authority in Indonesia's digital governance (Dewi, 2025). This study seeks to identify relevant legal norms and to perform a normative reconstruction of constitutional principles to establish an ideal legal standard (*ius constituendum*) for algorithmic due process as a constitutional safeguard, specifically addressing the procedural challenges presented by automated decision-making systems. The normative approach is utilized to analyze legal principles and constitutional laws concerning due process, the safeguarding of fundamental rights, and the supremacy of law regarding the state's implementation of automated decision-making systems. The socio-legal approach is utilized not as an empirical research method, but as an analytical and contextual framework to comprehend the functioning of algorithmic systems within administrative procedures and institutional governance. This approach relies on institutional reports, administrative documents,

and official findings to contextualize the application of legal norms, particularly in examining how algorithmic systems affect human rights protection, access to justice, and procedural guarantees, thereby strengthening the coherence between normative analysis and institutional practice.

The analysis draws upon multiple legal approaches. The statute approach is used to examine the 1945 Constitution of the Republic of Indonesia and relevant statutory regulations, including Law No. 27 of 2022 on Personal Data Protection and Law No. 11 of 2008 on Electronic Information and Transactions. The case approach is employed to analyze institutional reports, findings, and court decisions issued by the Constitutional Court, the Indonesian Ombudsman, and the National Human Rights Commission. The conceptual approach is used to reconstruct the theoretical frameworks of algorithmic due process and Rule of Law 5.0. Additionally, the comparative approach provides insight by examining how other jurisdictions particularly Canada and the Netherlands are selected due to their advanced development of algorithmic governance frameworks and the existence of explicit administrative safeguards for automated decision-making develop legal safeguards for algorithmic governance.

The research utilizes primary legal materials (constitutional texts, legislation), secondary legal materials (scholarly books, journal articles, and policy reports), and tertiary

sources (legal dictionaries and encyclopedias). The analysis is conducted qualitatively using systematic, teleological, and hermeneutic interpretation which proceeds through the identification of relevant norms, interpretation of their constitutional purposes, contextual reading within digital governance practices, and normative evaluation to formulate a coherent model of algorithmic due process, in order to uncover the meaning and implications of legal norms within the evolving context of digital state authority.

C. RESULTS AND DISCUSSION

1. Constitutional Risk and Procedural Deficits in Algorithmic Decision-Making

The implementation of algorithm-based decision-making systems in Indonesia's digital governance has posed serious challenges to the applicability of constitutional principles that have long served as the foundation of the rule of law. Within the framework of constitutional law, the principle that all governmental actions must be based on law and uphold the protection of human rights is a direct consequence of Article 1(3) of the 1945 Constitution of the Republic of Indonesia, which affirms that Indonesia is a state based on the rule of law (Wisnaeni & Herawati, 2020). However, in practice, the advancement of technology particularly the use of algorithmic systems in public decision-making has produced a new form of administrative power that does not necessarily align with these foundational principles (Brkan, 2019); (Schartum, 1994). The

use of algorithms to ascertain outcomes like civil service recruitment results, social assistance recipient lists, or access to public services, without ensuring transparency and avenues for correction, creates a structural conflict with fundamental rule of law principles, notably legality, accountability, and the right to effective legal remedy. In a rule-of-law state, public authority must be exerted through reasoned, reviewable, and contestable judgments; opaque and non-correctable algorithmic determinations undermine these prerequisites by substituting legally accountable discretion with technocratic automatism (Lumbanraja, 2025).

One of the most fundamental principles in any constitutional legal system is the principle of due process of law (de Gregorio, 2021). Although this term is not explicitly mentioned in the 1945 Constitution, its substance is clearly reflected in Article 28D (1), which guarantees every individual the right to recognition, guarantees, protection, and fair legal certainty as well as equal treatment before the law. This principle implies that in every state decision-making process that affects the rights or obligations of citizens, procedural fairness must be guaranteed (Sumardiana et al., 2024). This encompasses the rights to know, understand, access, correct, and challenge judgments. In the context of digital governance, when judgments are progressively automated via algorithmic technology (Prinsloo, Slade, & Khalil, 2023), these procedural protections are functionally inaccessible rather than removed.

Systems such as the Unified Database for Social Welfare (DTKS) and Computer Assisted Test (CAT), for example, make significant administrative decisions about an individual's social status and career prospects, but do not provide adequate means for individuals to understand the system's rationale, challenge adverse outcomes, or request corrections to incorrect data. This condition does not constitute an adjudicated constitutional violation, but it reveals a serious procedural deficit that places due process guarantees at substantial constitutional risk.

When algorithmic systems fail to provide clarity regarding the basis of a decision and there is no mechanism to correct potential errors in the data or decision-making logic, the state is effectively failing to uphold the principle of public accountability (Randazzo & Hill, 2024). Accountability is inseparable from the concept of the rule of law, as emphasized in modern constitutional law literature, which asserts that governmental power regardless of form must be legally, politically, and morally accountable. If administrative decisions are produced by automated systems whose rationale cannot be traced or tested, accountability becomes blurred (Dogruel, Facciorusso, & Stark, 2022). Currently, algorithmic authority poses a risk of evolving into a power devoid of intrinsic self-correcting mechanisms. Harari contends that, in contrast to human decision-makers endowed with moral judgment and introspective capabilities,

algorithmic systems function devoid of conscience and without inherent ethical self-correction mechanisms unless intentionally engineered (Wardana, Rahayu, & Sukirno, 2024). Without legally required correction and review mechanisms, algorithmic governance creates a type of public authority that is inherently unable to rectify its own mistakes, a situation fundamentally at odds with constitutional responsibility (Rahayu et al., 2024).

Furthermore, the lack of corrective measures in state-utilized algorithms clearly contravenes the fundamental norm of safeguarding personal data and individual security (Rinta-Kahila et al., 2022). This is intimately connected to Article 28G (1) of the 1945 Constitution, which assures every individual the right to safeguard personal integrity, family, honor, dignity, and property under their stewardship. Personal data represents an extension of individual identity that is constitutionally protected, and its utilization in public decision-making must adhere to the principles of legality, proportionality, and participation. In the absence of participatory validation and correction by the data subject, automated choices convert personal data into a tool of unassailable governance, thereby rendering individuals susceptible to systemic vulnerability. This constitutional risk is additionally exemplified in comparative law. Article 22 of the General Data Protection Regulation (GDPR) grants persons the right to avoid judgments based

exclusively on automated processing, which encompasses significant information regarding the underlying logic, the right to human intervention, and the right to challenge such decisions. By contrast, Indonesian law does not yet provide an equivalent procedural architecture for automated public decisions, thereby creating a normative gap that places constitutional data protection guarantees in a structurally fragile position (Souza et al., 2021).

This fragility is exacerbated by the inadequacy of national regulations to provide a comprehensive legal framework ensuring transparency and fairness in algorithmic decision-making. Law No. 27 of 2022 on Personal Data Protection establishes the foundation for people's data rights, including the ability to access and correct information (Lestari et al., 2024). However, it does not expressly address the state's role to ensure algorithmic openness in public judgments. Similarly, Law No. 1 of 2024, which amends Law No. 11 of 2008 on Electronic Information and Transactions, fails to provide procedural justice norms for automated administrative decisions. Unlike the European Union, which explicitly regulates computerized decision-making, Indonesia's framework remains normatively underdeveloped, allowing algorithmic authority to grow faster than constitutional safeguards. This scenario does not demonstrate a total constitutional violation, but rather a constitutional deficit in regulatory preparation, in

which fundamental rights protections risk being eroded in the absence of effective remedies.

The impact of such a scenario is both human and structural. Opaque and non-correctable algorithmic systems run the potential of creating systemic inequities that encourage social inequality. Several studies have demonstrated that poorly controlled algorithms have a tendency to replicate structural biases that are embedded in the training data or the system design (Enarsson, Enqvist & Naartijärvi, 2022). When these biases cannot be identified or corrected by affected citizens, they are trapped in an unjust system without legal instruments to defend their rights. This condition creates a serious constitutional vulnerability in relation to Article 28I (2), which guarantees freedom from discriminatory treatment and protection against such treatment. Rather than constituting an adjudicated violation, these practices reveal an emerging pattern of constitutional exposure, in which vulnerable groups face heightened risks of exclusion and marginalization in digital governance.

The absence of redress mechanisms also undermines the constitutional control function over state power. In constitutional theory, one of the primary roles of a constitution is to limit power and prevent its abuse. This function can only operate if citizens are afforded the means to challenge or review state actions that infringe upon their rights. When no mechanisms are available to correct algorithmic decisions,

individuals lose effective access to legal participation, and the state's exercise of power becomes increasingly insulated from constitutional scrutiny. Such insulation does not yet amount to a formally adjudicated breach, but it represents a structural weakening of constitutional legitimacy, insofar as decisions that cannot be legally contested approximate a form of unchecked authority inconsistent with the normative foundations of constitutionalism.

Modern rule-of-law principles teach that technology is neither neutral nor value-free (Brownsword, 2025); (Lakhani, 2025). On the contrary, technology can reproduce power structures and social biases at scale and with systemic effect. Therefore, its deployment must be tightly bound by constitutional principles. The state cannot hide behind technological efficiency to evade responsibility for violating human rights (de Almendra Freitas, Pamplona, & de Oliveira, 2022). From a constitutional perspective, the central problem is not the existence of technology itself, but the absence of procedural architecture capable of translating constitutional values into algorithmic governance.

Referring to the foregoing analysis, this study does not assert the existence of adjudicated constitutional violations, but rather demonstrates the presence of serious constitutional risks and structural procedural deficits in algorithm-based public decision-making. The lack of transparency and corrective mechanisms places due process guarantees under Article 28D (1), data protection

under Article 28G (1), and non-discrimination under Article 28I (2) in a position of heightened constitutional vulnerability (Feka et al., 2025); (Nasution, Suteki, & Lumbanraja, 2025). These conditions expose a normative gap between constitutional commitments and digital administrative practices. This gap is not just a problem with the government; it also shows that the Constitution does not do enough to protect human rights in the digital state. Consequently, it is essential for Indonesia's legal system to engage in normative reconstruction to formalize algorithmic due process as a constitutional protection that can reinstate procedural justice, accountability, and contestability under algorithmic governance (Djohan, Indarti, & Malik, 2025). This kind of structure is necessary to make sure that technological power never takes precedence over constitutional supremacy and the basic rules of a democratic legal system.

2. Formulating Algorithmic Due Process as a Constitutional Framework

The rapid development of digital governance systems has driven countries around the world, including Indonesia, to transform their models of public administration through the integration of information technology and artificial intelligence (Yan & Chen, 2025). Behind the efficiency offered by digital and algorithmic systems, however, lie constitutional challenges that have not been fully addressed within the existing national legal framework (Chowdhury, 2024). As the state commences the delegation of

a substantial segment of its administrative decision-making to algorithmic systems, it effectively engenders a novel kind of authority that does not consistently adhere to the foundational tenets of the rule of law. The implementation of algorithmic due process is an imperative constitutional requirement for safeguarding human rights in the digital state (Mayana et al., 2024).

The concept of algorithmic due process fundamentally stems from the evolution of the due process of law principle, which has historically served as a foundational element in modern legal systems (Brownsword, 2022). Nevertheless, when this principle is applied in the digital context, it requires a reassessment of its elements to effectively tackle the new challenges posed by algorithmic systems (Friedl, 2023). The key distinction between conventional due process and its algorithmic counterpart lies in the types of individuals involved and the manner in which decisions are reached. In traditional decision-making, individuals are engaged and can be held legally and ethically accountable. Conversely, algorithmic systems operate through automated mechanisms based on mathematical principles and datasets that are often unclear, incomprehensible, unexplainable, or not subject to review. In classic constitutional theory, due process functions through rational justification, participation, contestability, and the ability to assign responsibility to identifiable decision-makers. When these foundational elements are

replaced by opaque and automated processes, the procedural protections that ensure legality, accountability, and access to justice become ineffective. It is this structural incompatibility between conventional due process mechanisms and algorithmic governance that necessitates a reconstruction of procedural justice principles so that they remain capable of protecting human rights within digital decision-making systems.

Within the context of constitutional law, the design of algorithmic due process as a constitutional tool must be founded on three essential pillars. First, the rule of law principle is enshrined in Article 1 paragraph (3) of the Republic of Indonesia's 1945 Constitution; second, the guarantee of procedural justice is articulated in Article 28D paragraph (1); and third, human rights, including the right to personal data and freedom from discrimination, are protected by Articles 28G and 28I of the Constitution. These three ideas are inseparable normative foundations for constructing algorithmic governance systems (Gentile, 2022). Furthermore, they act as ethical and constitutional filters for any policy advances that use information technology as the principal tool. In the comparative dimension, the experiences of several countries that have previously confronted the complexities of algorithmic power offer valuable lessons for Indonesia in designing its own model of algorithmic due process. Countries such as Canada, the European Union, and the Netherlands have integrated regulations

concerning algorithmic transparency (Prasad & Menon, 2020), the right to explanation, and the control of personal data into their respective frameworks of public law (Kumalaratri & Yunanto, 2021); (Putranti, 2022). Although the constitutional contexts and legal systems of these countries differ, the fundamental principles they apply reveal discernible patterns that may serve as useful comparative references. This comparative analysis is not intended for direct imitation but rather as a normative inspiration that can be contextualized in accordance with Indonesia's legal system and constitutional needs. A simplified comparison of the principles of algorithmic due process implemented in several countries can be outlined in the following table:

Table 1. Comparative Principles of Algorithmic Due Process in Selected Countries

Core Principle	Canada	Europe an Union (GDPR)	The Netherlands
Algorithmic Transparency	Regulated under the Directive on Automated Decision Systems (Ontario), requiring publication of decision-making models.	GDPR Articles 13–15 guarantee the right to information and the logic of automated processing.	Maintains an Algorithm Register documenting models used by the government.
Right to Explanation	Right to understand the reasons	GDPR Article 15(1)(h)	Government is obligated to provide

	behind administrative decisions made by automated systems.	establishes the right to obtain an explanation of automated decisions.	individual explanations within welfare systems.		developed by third-party vendors.	failures in automated systems.	
Source : Data processed by the author through comparative legal sources							
<p>As illustrated in the comparative table above, these countries not only acknowledge the role of algorithms in public decision-making but also proactively construct legal frameworks that ensure transparency, participation, and accountability. An example of a digital governance system that upholds constitutional norms is Canada's Directive on Automated Decision Systems (Brandusescu & Sieber, 2022). The General Data Protection Regulation (GDPR) of the European Union (Bharti & Aryal, 2023) similarly recognizes the right to information, the right to object, and the right to legal recourse against algorithmic decisions as essential rights of data subjects and individuals impacted by algorithmic processing. Hadwick and Lan (2021) note that the Netherlands has gone a step further by creating an Algorithm Register and putting strict judicial monitoring procedures over technology-based decision-making systems, especially in the field of social welfare administration.</p>				<p>The insights gained from these activities indicate that algorithmic due process cannot be established solely on administrative procedures. It must be anchored in a strong legal framework, bolstered by independent oversight mechanisms,</p>			
Right to Correction and Appeal	Administrative appeal procedures and open judicial review available for system-based decisions.	Rights to correction and objection are stipulated in the GDPR and reinforced by the European Court of Justice.	Social Courts may re-examine algorithmic decisions.				
Independent Oversight	Ombudsman and independent supervisory bodies are authorized to audit algorithmic systems.	Data Protection Authorities (DPAs) serve as independent regulatory bodies.	Data Protection Authorities and judicial institutions play active roles in oversight.				
State Accountability	The government remains responsible for digital systems even when	The state bears full responsibility for	The state cannot disclaim responsibility even when outsourcing is employed.				

and ensure substantial involvement of affected individuals at every pivotal phase of the automated decision-making process, including notification, access to information, explanation of results, rectification of errors, and the right to contest unfavorable decisions before appropriate authorities. Consequently, Indonesia must implement a comparable strategy meticulously aligned with its constitutional framework, institutional structure, and existing legal system to guarantee that algorithmic governance functions in accordance with the principles of the rule of law and constitutional accountability (Warsono et al., 2023). To address these challenges, it is essential to formulate a design for algorithmic due process that goes beyond a mere administrative procedure and functions instead as a living and adaptive constitutional framework capable of protecting human rights in every stage of digital decision-making. Conceptually, this design consists of several integrated and mutually reinforcing elements. These elements are explicitly presented in the following conceptual model of algorithmic due process:

Table 2. Conceptual Model of Algorithmic Due Process

Due Process Stage	Constitutional Description	Normative Objective
Notification	Citizens must be informed before any digital decision affecting them is made.	To guarantee the right to information and enable early oversight.
Access to Information	Information about the system,	To ensure process transparency.

	algorithmic logic, and data used must be accessible.	
Right to Explanation	Citizens have the right to understand the basis of the decision made.	To prevent arbitrary automated decisions.
Correction and Rectification	Citizens may request corrections to data or processes if errors occur.	To prevent unjust harm.
Right to Appeal	Citizens have the right to challenge or contest decisions through legal forums.	To provide a space for judicial review and control.
Independent Oversight	Algorithmic decisions must be subject to scrutiny by independent institutions.	To maintain objectivity and accountability.
State Accountability	The state remains responsible for all digital systems it employs.	To uphold constitutional supremacy in the digital era.

Source: Data processed by the author

The seven stages outlined in the table above are not merely technical steps; rather, they represent the direct embodiment of established constitutional principles. The first stage notification constitutes a manifestation of the principle of informed consent, which serves as a fundamental prerequisite in the relationship between the state and its citizens. The absence of prior notification regarding the use of personal

data in decision-making systems constitutes a violation of the principle of constitutional due care. This concern becomes even more severe when such decisions affect fundamental rights such as access to social assistance, recognition of identity, or entitlement to public services.

The subsequent phases regarding access to information and the entitlement to justification are fundamental to the tenet of transparency within the framework of the rule of law (Gacutan & Selvadurai, 2020). When governmental entities utilize algorithms for the formulation of administrative determinations, it is imperative that citizens possess the ability to comprehend the foundational rationale of such systems. In this context, the notion of explainability in the realm of artificial intelligence assumes notable significance. Transparency pertains not solely to the ultimate results of decisions but also includes the methodologies, data inputs, parameters, and potential biases that are ingrained within the system. In practical applications, numerous instances, such as the administration of social assistance via the DTKS database or the selection process for civil service positions through Computer Assisted Tests (CAT), fail to afford individuals the opportunity to grasp the mechanics behind decisions that impact their lives. Without transparency, the right to defense and the right to protection against arbitrary treatment become impossible to guarantee.

The subsequent stages correction and appeal embody the principle of remedial justice

(Gacutan & Selvadurai, 2020). In many cases, data used by digital systems are inaccurate, outdated, or flawed. When such data become the basis for decision-making without any mechanism for correction, the result is a systemic and concealed repetition of injustice. Therefore, the state must provide legal channels for redress, whether through administrative procedures or through independent judicial bodies. These procedures are essential to ensure that digital systems remain subject to control and evaluation, which lie at the heart of the rule of law.

Finally, the last two steps, independent monitoring and state accountability are very important for filling the gaps that are commonly seen in technocratic power systems. Private companies that the government hires often design and run algorithmic systems. In these kinds of situations, legal culpability often gets muddled. So, it is very important to set up independent governmental organizations like the Ombudsman, the National Human Rights Commission, or data protection authorities to keep an eye on things. But in the end, the state is still responsible for upholding the Constitution, since it has executive power under the Constitution. So, every algorithmic product that the government uses must follow tight legal rules so that the government can't avoid its constitutional duties and responsibilities. This idea is made clearer by the following picture:

Picture 1. Conceptual Flow of Algorithmic Due Process in Digital Governance



Source : Data processed by the author

This visualization illustrates that the stages of algorithmic due process form a comprehensive cycle of constitutional protection, beginning with the initial stage (notification) and culminating in the final stage (accountability). The model not only assists in designing a normative framework but also provides an implementable guide for practical application within digital governance systems.

Conceptually, this model offers several distinctive advantages. First, the notion of algorithmic due process has never before been systematically developed within Indonesia's constitutional law discourse. To date, discussions surrounding algorithms and digitalization have largely been confined to issues of data protection or information technology. This study reconstructs that perspective by placing the rule of law principle at the core of digital system development. Second, this research builds

a synthesis between constitutional principles and the operational design of technological systems. By structuring sequential stages of due process that can be adopted within state decision-making mechanisms, this model concretely bridges the gap between theory and practice. Third, the model provides a normative and argumentative foundation for promoting national legal reform specifically toward the explicit adoption of the algorithmic due process principle within statutory regulations.

Based on the foregoing analysis and discussion, it is clear that the design of algorithmic due process as a constitutional instrument holds not only normative significance but also practical urgency in responding to the digital transformation of the state. Without an adaptive due process mechanism suited to algorithmic contexts, the state risks exercising power that is uncontrolled, unaccountable, and systematically violative of constitutional rights (Irawan et al., 2025). Hence, the development of this model constitutes a strategic imperative to ensure that the principles of the rule of law remain firmly upheld amid the irreversible current of the digital revolution.

D. CONCLUSION

Based on the analysis previously outlined, this study reaches two key conclusions. First, the implementation of algorithm-based decision-making systems within Indonesia's digital governance has generated serious constitutional

risks and exposed substantial procedural deficits in the protection of fundamental guarantees. The absence of mechanisms for transparency, correction, and legal remedies has placed the guarantees of due process, personal data protection, and non-discrimination as reflected in Articles 28D (1), 28G (1), and 28I (2) of the 1945 Constitution in a position of heightened constitutional vulnerability. Rather than asserting adjudicated constitutional violations, this study identifies a normative gap in which digital state power expands faster than the procedural safeguards required by the rule of law, thereby revealing the urgent need for constitutional adaptation in the digital era.

Second, in response to these challenges, this study proposes the concept of algorithmic due process as a new constitutional instrument to safeguard procedural justice in digital governance. This model is built upon seven core pillars: notification, access to information, right to explanation, correction, right to appeal, independent oversight, and state accountability. Rooted in Indonesia's constitutional values and enriched by comparative practices from other jurisdictions, this framework offers both a normative and practical pathway to ensure that all forms of algorithmic power remain accountable under the rule of law and capable of protecting human rights and constitutional guarantees in the evolving architecture of the digital state.

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