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ADMINISTRATIVE JUSTICE IN ALGORITHM-BASED SOCIAL ASSISTANCE DISTRIBUTION SYSTEMS: A STUDY OF DIGITAL TRANSPARENCY IN PUBLIC SERVICES IN INDONESIA

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Abstract

This study investigates the concept of administrative justice within algorithm-based decision systems used in distributing social assistance programs in Indonesia. The research aims to evaluate the extent to which digital transparency is upheld in these automated public service mechanisms. Employing a qualitative approach based on secondary data, the study analyses policy documents, regulatory frameworks, technical algorithm manuals, government reports, and investigative journalism from multiple regions. Data were examined through qualitative content analysis. The findings indicate that algorithmic opacity, limited public communication regarding eligibility criteria, and weak regulatory oversight hinder the realization of administrative justice. This article makes a significant contribution to public administration literature by integrating the ethical and administrative dimensions into the study of algorithmic governance. It offers a critical assessment of digital governance practices in an emerging economy and advocates for the ethical implementation of algorithms in the public sector.

Keywords: administrative justice, algorithmic governance, digital transparency, public sector ethics, social assistance

1. Introduction

In the era of digital transformation, governments worldwide increasingly rely on algorithmic systems to manage and deliver public services. These technologies promise efficiency, consistency, and scalability, particularly in large-scale welfare programs where administrative burdens are significant. In Indonesia, the adoption of algorithm-based systems has accelerated rapidly, especially in the distribution of social assistance (bansos) following the COVID-19 pandemic. The urgency to identify, assess, and target eligible recipients in a short period encouraged the use of data-driven tools and predictive algorithms, such as the DTKS (Data Terpadu Kesejahteraan Sosial) and various regional e-Bansos platforms (Kuziemski & Misuraca, 2020).

Despite these innovations, serious concerns have emerged regarding administrative justice and digital transparency. Multiple audits by the Ombudsman of the Republic of Indonesia (2022) documented frequent exclusion errors (eligible households left out due to mismatched civil registry data) and inclusion errors (wealthier households receiving benefits due to outdated databases). Investigations by Tempo and Kompas further revealed that local governments often could not explain the scoring thresholds or eligibility criteria applied by the system. This lack of

transparency, combined with limited grievance mechanisms, raises questions about fairness, accountability, and citizens' right to contest algorithmic decisions. Such issues demonstrate that while digitalization improves efficiency, it also risks undermining procedural justice in essential welfare services.

Administrative justice refers to the fairness of both procedures and outcomes in government decision-making. Traditionally anchored in legal and bureaucratic frameworks, the concept now requires reinterpretation in the digital age. As welfare decisions become mediated by algorithms rather than human discretion, the key question arises: can these systems preserve transparency, fairness, and responsiveness, the very values underpinning good governance? Scholars such as Brown (2020) and Lepri et al. (2021) warn that algorithmic opacity may erode trust, alienate citizens, and institutionalize new forms of injustice.

In Indonesia, these challenges are exacerbated by uneven digital capacity across regions, limited legal frameworks governing AI and automated decision-making, and a general lack of public awareness regarding digital rights. Unlike countries with established guidelines for algorithmic accountability, Indonesia has yet to develop an institutional framework for auditing or regulating algorithmic decisions in the public sector (Stankovich et al., 2023). This creates opportunities for bias, unjust exclusions, and public distrust. Furthermore, national discourse on digital transformation has largely focused on infrastructure and efficiency, while ethical and human rights dimensions have been neglected (Choroszewicz & Mäihäniemi, 2020).

From an academic perspective, the field of algorithmic governance has advanced rapidly, yet most studies focus on Western contexts with established digital ecosystems. For example, Gordon (2019) documented how automated systems in the United States disproportionately penalized marginalized groups. However, little research has examined the ethical implications of algorithmic welfare systems in the Global South, particularly Southeast Asia. As a result, there is limited understanding of how such systems affect citizens' lived experiences and access to entitlements in decentralized governance environments.

This study seeks to address this gap by examining the intersection of algorithmic governance, administrative justice, and digital transparency in Indonesia's social assistance distribution systems. Specifically, it investigates how these platforms operate, what forms of transparency or opacity exist, and whether they align with principles of fairness and justice in public administration. By drawing on secondary data from government documents, media investigations, and expert commentary, this research critically evaluates the ethical and legal foundations of algorithmic decision-making in social policy.

The novelty of this research lies in its explicit focus on the administrative-ethical dimension of algorithmic governance, which remains underexplored in both global and local literature. While previous studies such as Gordon (2019) in the U.S., Veale and Brass (2019) in the U.K., and Lepri et al. (2021) in the EU have examined algorithmic bias and fairness, most of these works are situated in mature digital democracies with robust institutional safeguards. By contrast, Indonesia represents a transitional democratic context with fragmented regulatory frameworks and limited public algorithmic literacy. Unlike studies that focus primarily on algorithmic performance or legal design, this research integrates administrative justice, fairness, transparency, accountability, as a

normative lens to evaluate algorithmic decision-making in the social welfare sector. This focus advances existing literature by offering an ethical-administrative framework uniquely suited to emerging economies, where algorithmic tools are adopted without corresponding institutional capacity or citizen safeguards.

Accordingly, this study is guided by the following research question: How do algorithm-based social assistance distribution systems in Indonesia affect administrative justice and digital transparency, and to what extent do they align with principles of fairness and accountability in public administration?

The main contribution of this article lies in its explicit integration of administrative justice into the study of algorithmic governance in Indonesia's social assistance distribution. While much of the existing literature focuses on efficiency and technological performance, this research advances the debate by offering an ethical-administrative framework that emphasizes fairness, transparency, and citizen trust in digital public services. By analyzing secondary data from regulatory documents, government manuals, audits, and media investigations, the study provides empirical evidence of how algorithmic opacity and weak oversight undermine procedural justice. This contribution not only fills a gap in the literature on algorithmic governance in emerging economies but also offers normative guidance for policymakers to design more accountable and inclusive digital welfare systems.

2. Methods

This research employs a qualitative–descriptive design using a secondary data approach to investigate how algorithm-based systems in Indonesia's social assistance programs affect administrative justice and digital transparency. Given the sensitive nature of algorithmic decision-making and the limited public access to the internal mechanics of these systems, secondary data provide a strategic vantage point for understanding institutional design, regulatory practices, and public perceptions without crossing ethical or legal boundaries.

2.1. Data Sources and Collection Strategy

The study analysed a total of 62 documents published between 2018 and 2024, selected through purposive sampling based on credibility, relevance, and accessibility. The sources were distributed as follows:

a) Government regulations and policy guidelines: 14 documents
b) Technical manuals outlining scoring criteria: 9 documents
c) Audit reports (including Ombudsman RI reports): 11 documents
d) Investigative journalism from national media (Tempo, Kompas, etc.): 15 documents
e) Academic articles, civil society reports, and expert commentary: 13 documents

All documents were screened for authenticity and cross-verified through official or reputable repositories. This systematic collection ensured a balanced representation of regulatory, technical, evaluative, and discursive perspectives.

2.2. Analytical Framework

The analysis employed thematic coding following (Natsir, 2025), adapted for

governance studies. Three dimensions guided the coding process: transparency, fairness, and accountability. NVivo software facilitated the coding across documents, using keywords such as scoring, eligibility, and transparency gap to identify recurrent themes and patterns.

2.3. Limitations of the Study

This research faces several methodological limitations:

a) Black-box limitation: The actual source code of algorithmic systems used in bansos programs was not publicly available. The analysis therefore relied on policy documents and technical summaries to infer decision-making logic.
b) Publication bias: Media and institutional reports may emphasize extreme cases—either major failures or notable successes—while overlooking routine or ambiguous outcomes.
c) Temporal limitation: While the study covers developments up to 2024, algorithmic systems evolve rapidly, making the findings more of a snapshot than a longitudinal account.

Despite these limitations, triangulation of diverse sources and a clear coding framework strengthen the credibility and validity of the findings. Furthermore, the methodological design aligns with international studies of digital welfare systems (Brown, 2020; Choroszewicz & Mäihäniemi, 2020), which face similar data-access constraints yet yield critical policy insights.

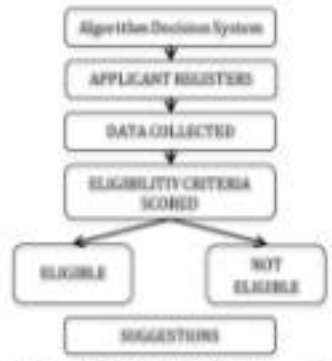
3. Results and Discussion

3.1. Result

This section presents the main findings of the study, synthesized from policy documents, government manuals, audit reports, and journalistic investigations. Three dominant themes emerged from the content analysis: opaque eligibility logic, exclusion and inclusion errors, and limited oversight mechanisms. These themes reveal a significant gap between the ideals of algorithmic governance, transparency, fairness, and participation, and the realities of implementation.

In many regions of Indonesia, digital social assistance systems determine eligibility using automated scoring algorithms. These algorithms typically follow a sequential process: registration, data verification, scoring, and final eligibility determination. Although some variations exist across municipalities, most platforms, particularly those using DTKS, adopt a similar structure. However, public access to these procedural flows is minimal, raising concerns about transparency and administrative justice (Gordon, 2019; Wirtz et al., 2019).

Picture 1 provides a generalized flowchart derived from municipal guides and DTKS technical documents. It illustrates how algorithmic workflows function in practice.



Picture 1: Flowchart of Algorithmic Decision System in Social Assistance Eligibility (Source: synthesized from regional technical manuals and DTKS regulation documents, 2018–2023)

As the flowchart shows, the process begins with citizen registration and data collection, followed by scoring based on pre-set eligibility indicators such as household size, energy usage, and income bracket. Yet the weightings and thresholds applied remain undisclosed, reinforcing the "black-box" character of these systems (Lepri et al., 2021; Veale & Brass, 2019).

Two major issues arise from this process. First, applicants lack mechanisms to understand or challenge their scores. Second, there are no institutionalized audit pathways to evaluate fairness in exclusions and inclusions. These gaps highlight the urgent need for public algorithm audits and standardized transparency protocols, particularly for programs with significant socio-economic impacts.

3.1.1. Opaque Eligibility Logic

A central finding is the opacity of algorithmic logic in determining eligibility. While designed to ensure objectivity, key indicators such as income or electricity use are not explained publicly. Even local officials often lack clarity. For instance, an e-Bansos system in Java referred vaguely to "composite vulnerability scores" without providing calculation details, undermining explainability. This lack of clarity makes it difficult for citizens, particularly those with low digital literacy, to contest decisions (Wirtz et al., 2019). The Ombudsman of the Republic of Indonesia (2022) confirmed that many regional agencies could not explain scoring thresholds (Naimatul Masruroh et al., 2025). As Reisman et al. (2018) warn, such systems risk functioning as opaque bureaucratic tools rather than instruments of reform.

3.1.2. Exclusion and Inclusion Errors

The study also reveals high error rates in algorithmic targeting, with both false exclusions and false inclusions. For example, an audit in East Kalimantan found elderly widows excluded because utility records remained under deceased spouses, while wealthier households continued to receive assistance due to outdated data. These errors stem from flawed datasets rather than isolated technical glitches, undermining algorithmic reliability (Veale & Brass, 2019). As Gordon (2019) cautions, such systems may deepen inequality, especially in rural and informal sectors

poorly represented in DTKS.

Table 1 summarizes recurring types of algorithmic errors in social assistance distribution, highlighting systemic flaws that undermine accountability and citizen trust.

Table 1: Types of Algorithmic Errors in Social Assistance Distribution

Type of Error	Description	Example Case
False Positive	Ineligible person receives assistance	A civil servant's household mistakenly approved
False Negative	Eligible person is excluded	Elderly widow with outdated NIK record
Data-Identity Mismatch	Data in Dukcapil does not match household condition	Deceased husband still listed as head of household
Systemic Bias	Algorithm consistently disadvantages certain groups	Informal workers excluded due to lack of employment records

Source: Synthesized by authors from Ombudsman RI Reports, Tempo Investigations, and DTKS guidelines (2018–2023)

These errors reflect deeper systemic flaws in the design and oversight of algorithmic public services. Issues like bad data, opaque scoring, and lack of appeals undermine accountability and trust. Fixing them requires not just better tech, but strong ethical standards and transparent, citizen-centered monitoring.

3.1.3. Limited Oversight and Accountability

A further key finding is the absence of robust oversight. Existing policies lack clear audit procedures or error-correction mechanisms, leaving citizens with slow and cumbersome manual appeals. For instance, in Medan, rejected applicants must undergo a 30-day appeal process that does not include algorithmic review. This practice contradicts principles of adaptive governance (Zouridis et al., 2020). Unlike the EU or Canada, Indonesia lacks accountability laws for algorithmic decision-making. Without such regulation, efficiency is often prioritized at the expense of ethics Lepri et al. (2021).

Table 2 contrasts ideal algorithmic logic with actual field practices in Indonesia. The comparison highlights discrepancies across transparency, participation, auditability, and fairness.

Table 2: Ideal Logic vs. Field Practice: A Comparison

Dimension	Ideal Logic	Field Practice in Indonesia
Transparency	Clear criteria, public algorithm manuals	Opaque scoring systems, vague policy language
Participation	Citizen understanding, appeal mechanisms	Passive recipients, limited feedback channels
Auditability	Routine algorithm audits and adjustments	No formal review process, manual appeals only
Fairness	Inclusion based on updated, inclusive data	Biased outcomes due to outdated/incomplete datasets

Source: Adapted by authors from Lepri et al. (2021), Gordon (2019), Veale & Brass (2019), Wirtz et al. (2019), and Zouridis et al. (2020).

To deepen the interpretation of empirical findings, Picture 2 presents a comparative flowchart illustrating the ideal algorithmic governance framework, grounded in transparency and citizen participation, against the actual implementation observed in various Indonesian municipalities. The contrast reveals significant ethical and procedural gaps that challenge the realization of administrative justice.

Picture 2: Comparison Between Ideal and Actual Algorithmic Governance in Social Assistance
(Source: Constructed by authors based on analysis of DTKS guidelines, municipal SOPs, and Ombudsman RI findings, 2018–2024)

As Picture 2 shows, the ideal model prioritizes explainability, appeal mechanisms, and feedback loops for algorithmic improvement. In contrast, the actual system remains predominantly opaque, with limited procedural justice for applicants. The absence of mandatory audits, community participation, and human-in-the-loop interventions underscores the urgency for an Algorithmic Transparency Act or similar legal instruments in Indonesia's public sector governance (Firmansyah et al., 2024).

3.2. Discussion

The findings reveal a growing tension between technological efficiency and democratic values in Indonesia's digital governance. Algorithmic systems theoretically promise neutrality, speed, and scalability, yet in practice they often compromise transparency, fairness, and participatory legitimacy.

3.2.1. Interpretation of Findings

While digital bansos systems have improved efficiency, they often hide complex decisions behind technical interfaces, reducing human needs to scores and thresholds. This masks the value

judgments within algorithms (Lepri et al., 2021) and weakens public trust. Our findings show that many scoring models were created without community input, reflecting "governance without scrutiny" (Dencik et al., 2019). Though Indonesia has embraced digital tools, ethical frameworks, like explainability and citizen rights, remain underdeveloped (Wirtz et al., 2019), leading to weak oversight and accountability.

The gap between ideal principles and real-world algorithm use is a major challenge in digital governance. In Indonesia, limited regulation and capacity lead to a mismatch between fairness goals and actual practice. Table 3 highlights this misalignment between values and implementation.

Table 3. Administrative Principles vs. Observed Algorithmic Practices

Administrative Principle	Ideal Practice	Observed Practice
Transparency	Public eligibility rules	Undisclosed scoring logic
Accountability	Grievance system and audit trail	Delayed manual appeals
Responsiveness	Human-in-the-loop feedback	Algorithm decisions remain static
Equity	Inclusive for vulnerable groups	Excludes undocumented or informal populations

Source: Adapted from Lepri et al. (2021), Wirtz et al. (2019), and Gordon (2019)

Technical fixes alone can't resolve the issues in Table 3. What's needed is institutional reform that embeds ethics and participation into algorithmic systems, through safeguards, inclusive design, and clear appeals processes. Without this, digital reforms risk deepening bureaucratic opacity and eroding public trust.

3.2.2. Comparison of Prior Studies

These findings align with global critiques of public-sector algorithms. Gordon (2019) and Veale & Brass (2019) show how systems in the U.S. and UK have penalized the poor through opaque, biased scoring. Indonesia reflects this global pattern but faces added challenges: low digital literacy, fragmented data, and no AI governance laws. Unlike the EU's GDPR, Indonesia lacks enforceable standards, allowing inconsistent practices, especially in decentralized areas. As Starke et al. (2022) argue, without strong regulation, algorithmic governance risks drifting into unchecked technocracy, especially in the Global South. Localized accountability frameworks are urgently needed.

Numerous independent audits and investigative media reports have consistently pointed to systemic shortcomings in Indonesia's algorithmic social assistance infrastructure. These sources provide more than anecdotal evidence; they reveal deeply embedded structural issues. Picture 3 visualizes six dominant themes distilled from these secondary sources.

Picture 3: Systemic Weaknesses in Indonesia's Algorithmic Social Assistance: Extracted Themes from Audit and Media Reports
(Source: Authors' synthesis from Ombudsman RI findings, Tempo and Kompas investigations, and government DTKS guidelines, 2018–2024)

These systemic issues align with international critiques of opaque digital welfare systems (Gordon, 2019; Lepri et al., 2021). However, in the Indonesian context, their impact is exacerbated by weak institutional safeguards and a lack of algorithmic governance standards. The patterns depicted in Picture 3 underline the urgency of embedding ethical oversight and citizen-responsive mechanisms within digital public services.

3.2.3. Theoretical Contribution

This research contributes to digital governance theory by emphasizing administrative justice in algorithmic systems. While much of the literature highlights innovation and efficiency, we stress the need to embed fairness, transparency, and redress into digital public administration (Coglianese et al., 2019). Algorithmic systems should not be solely data-driven but must also be ethically grounded and normatively accountable.

We propose a hybrid governance model that balances techno-bureaucratic rationality (efficiency, scalability) with deliberative transparency (participation, explainability). This ensures algorithms are not just functional but also comprehensible and legitimate to citizens. Expanding on the concept of "algorithmic discretionary space" (Zouridis et al., 2020), we argue for preserving human oversight in automated decision-making, especially in critical areas like social protection, to uphold the ethics of humane administration.

3.2.4. Policy Implications

This study offers four key policy implications. First, algorithmic systems must undergo formal oversight through audits, impact assessments, and public disclosure of scoring criteria, making transparency a legal obligation, not a choice. Second, citizen participation should be built into the design and review of digital welfare tools to enhance legitimacy and inclusiveness.

Third, ethical governance must be institutionalized by adapting global AI frameworks like those from the OECD or UNESCO to Indonesia's context (Hafifah et al., 2025). Lastly, stronger inter-ministerial coordination is essential to align datasets and standardize eligibility rules, reducing data fragmentation and regional disparities.

Governments worldwide are adopting structured frameworks to govern algorithms in sensitive areas like welfare and healthcare, now essential for safeguarding administrative justice. Table 4 outlines four global standards for ethical algorithm use and assesses their adoption in Indonesian policy.

Table 4. Required Policy Instruments for Ethical Algorithmic Governance

Policy Instrument	Purpose	Status in Indonesia
Algorithmic Transparency Act	Mandate public access to scoring logic	Not yet adopted
Algorithmic Impact Assessment (AIA)	Evaluate risks before deployment	Not required in public sector
Public Grievance Interface	Facilitate citizen complaints	Available but not integrated with systems
Audit and Review Protocols	Periodic evaluation of algorithmic fairness	Fragmented and non-standardized

Source: Constructed by authors based on OECD (2019), UNESCO (2021), and Wirtz et al. (2019)

Table 4 demonstrates that Indonesia lacks several key global standards for ethical algorithmic governance. While OECD and UNESCO frameworks emphasize transparency, risk assessment, and citizen grievance mechanisms, Indonesia's adoption remains fragmented and non-mandatory. The absence of an Algorithmic Transparency Act or formal impact assessments leaves welfare algorithms vulnerable to bias and arbitrary implementation. This gap underscores the urgency of institutional reform to ensure that efficiency does not come at the expense of fairness and accountability (Khalifatunnisa et al., 2025).

3.2.5. Theoretical Dialogue: Administrative Justice and Algorithmic Governance

The central theory grounding this study is the concept of administrative justice, which traditionally emphasizes transparency, accountability, and public participation in government processes (Lepri et al., 2021; Zouridis et al., 2020). In the digital age, however, administrative justice is increasingly mediated through algorithmic systems rather than direct human interaction. The decision-making logic of algorithms often operates as a "black box" (Lepri et al., 2021), violating core principles of procedural fairness.

Comparable findings have emerged internationally. For example, Gordon (2019) in the U.S. and Veale & Brass (2019) in the UK highlight how algorithmic systems have disproportionately excluded vulnerable groups due to embedded data biases. These studies support the argument that without ethical controls, algorithms may institutionalize new forms of structural injustice.

To situate Indonesia's experience in a global context, the table below compares algorithmic regulation and key challenges across four countries. While nations like Canada and the Netherlands have introduced safeguards such as audits and legal rulings, Indonesia lacks specific legislation and oversight, leaving its systems prone to bias and opacity.

Table 5. International Comparison: Indonesia and Other Countries

Country	Algorithm Regulation	Critical Findings
United States	No federal regulation; evaluations are ad hoc	Automated systems often penalize the poor (Gordon, 2019)
Netherlands	Risk scoring system (SyRI) ruled a human rights violation	Courts halted the system due to lack of transparency and discrimination (Dencik et al., 2019)
Canada	Public audits and AI Impact Assessments being adopted	Focus on citizen participation and access to algorithmic logic (Freeman Engstrom et al., 2020)
Indonesia	No specific AI legislation; fragmented governance practices	DTKS data errors, exclusion of eligible citizens, and no formal audit of algorithmic systems

Source: Constructed by author based on comparative literature in algorithmic regulation and digital welfare governance (2018–2022)

This table highlights Indonesia's relative weakness compared to other countries in regulating welfare algorithms. The United States and the United Kingdom have faced criticism for opaque systems, but at least public scrutiny and judicial interventions exist. The Netherlands has gone further by striking down unfair systems through court rulings, and Canada is moving toward public audits and AIAs. Indonesia, in contrast, has no specific legislation and relies on fragmented practices, leaving significant room for structural injustice. This comparison positions Indonesia as lagging behind global benchmarks, reinforcing the need for enforceable safeguards.

3.2.6. Deepening the Findings: Linking to Theoretical Frameworks

To support the study's findings, this section links key challenges, such as opaque criteria and weak oversight, to broader theoretical debates on algorithmic governance. The table below connects each issue to relevant literature, highlighting how these concerns reflect deeper tensions in public administration.

Table 6. Linking Key Findings to Theoretical Frameworks in Algorithmic Governance

Key Findings	Supporting Theories / Literature
Opaque scoring logic	Reisman et al. (2018): Algorithmic decisions must be explainable
Exclusion of vulnerable citizens	Gordon (2019); Starke et al. (2022): Data bias exacerbates social inequality
Weak institutional oversight	Zouridis et al. (2020): Digital discretion without human control increases risks of unfairness
Absence of appeal mechanisms	OECD (2019); UNESCO (2021): Strong grievance structures must be embedded in digital governance

Source: Synthesized by author from selected literature in algorithmic governance and digital public ethics (2018–2022)

The table connects empirical findings with theoretical debates in algorithmic governance. The alignment illustrates that issues observed in Indonesia, opaque scoring, exclusion of vulnerable groups, weak oversight, and limited grievance mechanisms, are not isolated but reflect global challenges. However, the Indonesian context magnifies these problems due to institutional

fragility and low digital literacy. This reinforces the argument that algorithmic reforms must go beyond technical fixes by embedding ethical principles and participatory mechanisms into system design and oversight.

3.2.7. Academic Implications and Conceptual Innovation

This study contributes a hybrid approach to digital governance theory, integrating algorithmic efficiency with administrative ethics and human-centered design. This expands the literature that has predominantly emphasized technological performance (Wirtz et al., 2019). It also builds on the notion of "algorithmic discretionary space" (Zouridis et al., 2020), arguing that policy authority should not be entirely delegated to code. Human oversight must be preserved to ensure democratic legitimacy and social trust in welfare decisions.

3.2.8. Study Limitations

This study is limited by its regional focus and lack of access to proprietary algorithm code, which restricted analysis to documents and system outputs. While the findings reflect broader trends, generalizations should be made cautiously. Despite these constraints, consistent patterns across regions and triangulated data support the study's validity. Future research could expand by comparing other ASEAN contexts or examining long-term effects of algorithmic interventions.

4. Conclusion

This study set out to examine how algorithm-based social assistance distribution systems in Indonesia affect administrative justice and digital transparency, and to what extent they align with principles of fairness and accountability in public administration. Drawing on 62 documents, including government regulations, technical manuals, audit reports, media investigations, and academic commentary, the analysis revealed systemic challenges that compromise the integrity of digital welfare governance.

Three key findings emerged. First, algorithmic opacity remains a major obstacle: scoring logic and eligibility criteria are not publicly disclosed, limiting citizens' ability to understand or contest decisions. Second, inclusion and exclusion errors are widespread, largely due to flawed datasets and the absence of corrective feedback mechanisms. Third, oversight and accountability structures remain weak, with no formal audit processes, limited appeal systems, and fragmented regulatory capacity. Collectively, these issues highlight a mismatch between the ideals of transparency, fairness, and participation and the realities of implementation in Indonesia's social protection systems.

The contribution of this research lies in explicitly integrating administrative justice into the study of algorithmic governance. By moving beyond efficiency-focused evaluations, the study advances an ethical-administrative framework that foregrounds fairness, transparency, accountability, and citizen trust. This perspective fills an important gap in the literature on algorithmic governance in emerging democracies and provides normative guidance for policymakers.

The implications are both practical and theoretical. At the policy level, the study underscores the need for: (1) an Algorithmic Transparency Act mandating disclosure and audits; (2)

Algorithmic Impact Assessments (AIAs) prior to deployment; (3) citizen participation mechanisms in the design and review of welfare algorithms; and (4) stronger inter-ministerial coordination to reduce data fragmentation and regional disparities. At the academic level, the findings contribute to debates on digital governance in the Global South by proposing a hybrid model that balances techno-bureaucratic rationality with deliberative transparency and human oversight.

In conclusion, while Indonesia's adoption of algorithmic systems has improved efficiency and scalability in social assistance distribution, it has also exposed fundamental vulnerabilities in fairness and legitimacy. Ensuring that digital governance strengthens, rather than undermines, justice and accountability is essential for safeguarding citizen trust and democratic values in the era of algorithmic administration.

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