The Embedding of Fairness Value in Algorithmic Administrative Discretion

Xin Wang

School of Law, Hunan University, Changsha, China
wangxinlove@hnu.edu.cn

Abstract

This paper examines how fairness, as a foundational value of administrative law, can be embedded within algorithmic administrative discretion. Algorithmic administrative discretion systems increasingly play an assistive role in public administration and, in certain domains, fully automate human decision-making processes,thereby transforming discretionary judgment into processes governed by data, models, and human–institutional rules. Drawing on administrative law theory and computational governance theory, the research develops a conceptual framework for algorithmic administrative discretion, identifying its structural layers—data, model, and human–institutional—and its dynamic operation through information, decision, and feedback flows. Fairness is analyzed as a normative logic internal to algorithmic discretion rather than as an external compliance requirement. Its institutional realization is articulated through lifecycle governance encompassing three stages: ex ante design and legality review, in-process human–algorithmic oversight, and ex post accountability and redress. Embedding fairness in this manner ensures that digitalized administration remains aligned with legality, proportionality, and procedural justice, thereby safeguarding the rule of law in the age of automation.

Introduction

Algorithms are coming to government. (Henderson and Krass 2023).The rapid integration of algorithmic systems into administrative governance has transformed the exercise of state power. (Covilla. 2025). What was once a domain of human discretion—guided by expertise, judgment, and accountability—is increasingly mediated by data-driven decision-making. This transformation, often referred to as algorithmic administrative discretion, denotes a new mode of governance in which algorithms participate in, and sometimes replace, human officials in the evaluation of facts, application of norms, and production of administrative outcomes. Such a shift has redefined not only the operational logic of public administration but also the normative foundations of administrative law.

At first glance, algorithmic discretion promises significant benefits: improved efficiency, consistency, and data-driven decision-making. Yet these advantages come with deep legal and ethical risks. Algorithms are not value-neutral; their outputs reflect the design assumptions, data quality and value choices of their creators. When discretion is automated, the principle of fairness—a core value of administrative legitimacy—risks being diluted or distorted by computational rationality. The legal question, therefore, is no longer whether algorithms should be used in discretionary decision-making, but how fairness can be meaningfully embedded within algorithmic discretion.

Existing scholarship and regulatory debates, including the EU's Artificial Intelligence Act and China's emerging frameworks for digital governance, have emphasized accountability and transparency. However, they often treat fairness as an external compliance requirement rather than an intrinsic design value.(Selbst et al. 2019). In contrast, this paper argues that fairness must be understood as an internal normative logic that structures algorithmic discretion from within. Embedding fairness requires both conceptual clarity and technical institutionalization: fairness should inform how discretion is modeled, how decisions are produced, and how human oversight is maintained.

To address this challenge, the paper proceeds in three main steps. Section II constructs a conceptual framework of algorithmic administrative discretion, clarifying its structural composition and internal dynamics. It analyzes the interaction between human and algorithmic agents, exploring how data, models, and rules collectively shape discretionary judgment. Section III then turns to the embedding of fairness values, combining legal theory and computational practice. From a normative perspective, it examines fairness as a multidimensional legal value encompassing equality, proportionality, and procedural justice. From a technical perspective, it identifies possible embedding pathways, such as fairness-aware data governance, interpretable model design, and value-sensitive algorithmic architecture. Section IV concludes by reflecting on the limits of algorithmic fairness and reaffirms the indispensable role of human judgment in safeguarding the moral and constitutional legitimacy of administrative discretion.

Through this structure, the paper aims to contribute to the ongoing dialogue between administrative law and algorithmic governance. It seeks to move beyond the conventional dichotomy of "human vs. machine discretion" and to propose a more integrated vision: one in which fairness operates

Proceedings of Bridge between Artificial Intelligence and Law 2026 (Full papers), pages 184–189
Januray 21, 2026, AAAI 2026 Bridge Program, Singapore

as both a legal principle and a computational constraint, ensuring that the digitalization of discretion remains anchored in the rule of law.

Conceptual Framework: The Structure and Dynamics of Algorithmic Administrative Discretion

Algorithmic administrative discretion refers to the exercise of discretionary power by administrative agencies through algorithmic systems that assist, guide, or replace human decision-making in specific administrative contexts.(Coglianese and Lehr 2017). In essence, it represents the digitization and formalization of discretionary judgment, whereby the traditional cognitive, evaluative, and normative functions of administrative officials are increasingly mediated by computational logic. Unlike traditional discretion, which relies on the experiential judgment of human officials, algorithmic discretion transforms administrative reasoning into structured processes of data processing, rule formalization, and decision automation. Based on the degree of algorithmic autonomy and human participation across the above layers, algorithmic administrative discretion can be divided into two primary types: auxiliary algorithmic discretion and fully autonomous algorithmic discretion.

Auxiliary Algorithmic Discretion. This type characterizes systems that assist human officials in gathering facts, analyzing data, or proposing preliminary decisions. Typical examples include intelligent case-assistance systems, administrative penalty calculators, and regulatory scoring tools used in tax or environmental enforcement. Here, the algorithm functions as a decision-support mechanism, enhancing cognitive capacity but leaving the final judgment to human discretion. Legally, this form retains the traditional model of human-centered responsibility while augmenting it through data-driven reasoning.

Fully Autonomous Algorithmic Discretion. In contrast, fully autonomous algorithmic discretion refers to systems where the algorithmic output plays a determinative role in administrative decisions, and human intervention is minimal or purely formalistic.(Roehl 2023) Examples include automated approval systems for social benefits or tax refunds, where algorithms perform the full cycle from data input to decision issuance. Such systems maximize efficiency and consistency but simultaneously raise concerns regarding legitimacy, accountability, and the erosion of individualized justice. They represent a new paradigm of machine-administered discretion, demanding new theoretical and institutional mechanisms for embedding legal values—particularly fairness—within computational governance.

This conceptual clarification provides the necessary foundation for the following section, which will examine the operational mechanisms through which algorithmic discretion functions dynamically within administrative governance.

Internal Structure

The internal structure of algorithmic administrative discretion can be conceptualized as a three-layer architecture: the data layer, the algorithmic model layer, and the human–institutional layer. These layers collectively determine how discretion is exercised, constrained, and legitimized in algorithmic governance.

Data Layer. The data layer provides the factual basis upon which algorithmic administrative discretion relies. It does not merely record pre-existing administrative facts; rather, prior to the initiation of discretion, it determines which facts are allowed to enter the discretionary process and in what form they are rendered computable. In the digital administration environment, facts relevant to a particular case are typically represented as data entries extracted from administrative databases, social information systems, or sensor networks, and are transformed through processes of data collection, cleaning, labeling, and structuring into quantifiable variables that can be processed by algorithms. While this transformation enhances the efficiency of algorithmic administrative discretion, it inevitably generates epistemic risks, including data incompleteness, bias in training datasets, and the detachment of legal facts from their real-world context. The Dutch Childcare Benefits Scandal (Toeslagenaffaire), for example, vividly illustrates how fact selection based on variables such as income, nationality, and historical records can distort administrative judgment and undermine fairness. (Wikipedia 2025).Accordingly, the accuracy and fairness of algorithmic administrative discretion are shaped not only by data quality and epistemic integrity, but also—prior to the commencement of discretionary reasoning—by the structure of factual premises constructed at the data layer.

Algorithmic Model Layer. The algorithmic layer constitutes the normative core of algorithmic administrative discretion. At this level,discretionary reasoning is encoded into computational logic—through rule-based systems, statistical classifiers, or machine-learning algorithms. Legal rules and administrative criteria are operationalized as decision parameters, thresholds, or optimization objectives. For instance, a model may assign weightings to risk factors in tax auditing or environmental enforcement. While such formalization promotes consistency and efficiency, it also narrows the range of interpretive flexibility, producing what has been called the "discretion paradox": the more precise the algorithm, the less room there is for context-sensitive equity judgments.

Human–Institutional Layer. The human–institutional layer is primarily reflected in the constraining function it performs between algorithmic administrative discretion and administrative addressees. Although algorithmic automation may appear to diminish human involvement, algorithmic administrative discretion does not operate independently of human intervention or institutional norms. From the perspective of rights protection, human involvement and institutional regulation together constitute a dual constraint on algorithmic administrative discretion. On the one hand, human intervention ensures that the effects of discretionary decisions remain within a framework of controllability and legal responsibility, as administrative officials may review algorithmic recommendations, exercise override powers, and bear ultimate responsibility for decisions. On the other hand,

algorithmic administrative discretion continues to operate within an established institutional framework. Procedural and remedial mechanisms incorporate algorithmic outcomes into the system of legal safeguards for administrative addressees, enabling them to understand, contest, and seek correction of discretionary decisions. In the absence of such human–institutional safeguards, algorithmic administrative discretion risks degenerating into "black-box bureaucracy," undermining administrative legitimacy and individualized justice. In this sense, the human–institutional layer delineates concrete boundaries for algorithmic administrative discretion through the combination of human corrective intervention and institutional constraints.

In sum, algorithmic administrative discretion is not a mere technological tool, but a reconstructed form of administrative power. Its internal structure—comprising the data layer, the model layer, and the human–institutional layer—defines the conditions under which algorithmic discretion operates, while its typology reflects different modes of human–algorithm collaboration.

Operational Mechanisms

While the internal structure of algorithmic administrative discretion delineates its constituent elements, its operational mechanisms describe how these elements interact dynamically during the decision-making process. Algorithmic discretion functions through a cyclical tri-layer process comprising information flow, decision flow, and feedback flow. This process reflects the continuous transformation of administrative cognition—from data collection to normative judgment—and the ongoing negotiation between human and algorithmic agents within institutional settings.

Information Flow: Data-Driven Cognition. The operation of algorithmic administrative discretion begins with the information flow stage, which does not concern the collection or initial structuring of data, but rather the processing and interpretation of existing data so as to transform them into information that is meaningful for decision-making. At this stage, algorithms operate on data already structured within administrative databases and social information systems, filtering, classifying, and reorganizing records to identify patterns, correlations, and indicators relevant to administrative discretion. Through mechanisms such as data fusion, feature extraction, and correlation analysis, raw data that merely carry factual traces are transformed into informational representations of legally relevant facts, thereby extracting the specific legal factual basis required for the exercise of algorithmic administrative discretion.

In traditional administrative discretion, officials acquire information through case files and human inquiry. In contrast, algorithmic discretion relies on data-driven cognition—wherein the algorithm identifies relevant features and generates a probabilistic representation of reality. However, this process is not purely technical: the selection of indicators, variables, and data sources reflects value judgments that determine which aspects of social reality are legally visible and which remain invisible. Hence, information flow embodies the epistemic dimension of administrative discretion, in which fairness and proportionality may already be shaped by data design.

Decision Flow: Human–Algorithmic Interaction. Once the information flow has constructed the legal factual basis for algorithmic administrative discretion, the system enters the decision flow stage, in which algorithmic reasoning and human judgment interact. This phase constitutes the core of the discretionary process, encompassing the generation, evaluation, and implementation ofalgorithmic administrative outcomes.

Algorithmic models—rule-based, statistical, or machine learning—produce recommendations or direct outputs based on predefined parameters. Human officials, in turn, interpret these results, weigh contextual factors, and determine whether to adopt, modify, or override the algorithmic suggestion. This interactive process can be conceptualized as a human–algorithmic deliberation loop, characterized by three modes:

Algorithm as advisor – algorithms provide quantitative assessments or predictive scores;

Algorithm as co-decision maker – both human and algorithm jointly determine outcomes;

Algorithm as executor – algorithmic results are automatically implemented.

The normative legitimacy of algorithmic discretion depends on how this interaction is structured. If humans merely confirm algorithmic outcomes without substantive evaluation ("rubber-stamp discretion"), the principle of due process becomes hollow. Conversely, effective collaboration—where human officials understand, challenge, and contextualize algorithmic reasoning—can enhance both efficiency and fairness.

Feedback Flow: Learning and Accountability. The final stage, feedback flow, ensures the adaptive and accountable operation of algorithmic discretion. In this phase, the outcomes of algorithmic decisions are recorded, monitored, and evaluated, providing feedback to both technical systems and administrative institutions. Through continuous feedback, algorithms can refine their predictive accuracy, while administrative bodies can identify systemic biases, inconsistencies, or procedural defects.

Institutionally, feedback flow connects algorithmic learning with legal supervision. On the one hand, feedback enables the technical recalibration of models—updating parameters, retraining datasets, or adjusting weightings. On the other hand, it serves as the foundation for ex post review and accountability, ensuring that errors or injustices in algorithmic decisions can be traced, explained, and remedied. Thus, feedback flow embodies the reflexive function of administrative law in the algorithmic era: maintaining the alignment between computational efficiency and normative legitimacy. Taken together, information flow, decision flow, and feedback flow constitute a recursive cycle that defines how algorithmic administrative discretion operates in practice. This cycle transforms administrative decision-making from a linear process into a continuous feedback system, wherein data, models, and human institutions co-evolve. The human–algorithmic collaboration within this cycle is not static but dynamic: human oversight constrains algorithmic autonomy, while algorithmic reasoning enhances

human consistency and rationality.

Ultimately, the operational mechanism of algorithmic discretion exemplifies the emergent institutional logic of digital governance—a hybrid form of power that merges computational rationality with legal-normative reasoning. Only by understanding this dynamic interaction can fairness, transparency, and accountability be effectively embedded into the algorithmic exercise of administrative authority.

The Connotation and Normative Realization of Fairness Values

Building upon the conceptual and operational foundations of algorithmic administrative discretion, this section turns to the value dimension of algorithmic governance. While the previous discussion clarified how discretion functions structurally and dynamically within digital administration, the following analysis explores the normative core that should guide its operation—fairness. By examining both the conceptual meaning and institutional realization of fairness values, the section seeks to bridge legal principles with computational design, ensuring that algorithmic discretion remains aligned with the requirements of administrative justice.

The Meaning and Typology of Algorithmic Fairness Values

Algorithmic fairness represents the normative extension of the traditional principle of administrative fairness into the era of data-driven governance.(Kennedy 2020) In conventional administrative law, fairness functions as both a moral value and a legal principle—requiring that public power be exercised in a manner that is impartial, reasonable, and consistent with the equality of citizens before the law. However, when discretion is mediated by algorithmic systems, fairness must be reinterpreted within a hybrid environment of human–machine collaboration. (Luca Oneto 2020). Here, fairness no longer depends solely on the subjective judgment of officials, but on how data, models, and institutional processes are constructed and operationalized.

From this perspective, algorithmic fairness is not a purely technical concept but a normative construct that determines whether automated administrative decisions can achieve justice in both outcome and process. It requires translating the classical dimensions of fairness—substantive, procedural, and structural—into computable, auditable, and legally meaningful forms. Accordingly, algorithmic fairness in administrative discretion can be classified into three interrelated types: result-oriented fairness, process-oriented fairness, and structural fairness.

Result-Oriented Fairness. Result-oriented fairness (or substantive fairness) focuses on the outcomes produced by algorithmic systems. It asks whether similarly situated individuals receive equal treatment and whether decisions are proportionate to factual and legal circumstances.(Kasy and Abebe 2021) In administrative practice, this corresponds to ensuring that algorithms do not discriminate against particular groups through biased data or model design. For example, in tax auditing, welfare distribution, or environmental enforcement, result-oriented fairness requires that algorithmic decisions be consistent across comparable cases and reflect legitimate administrative aims rather than statistical regularities detached from normative standards. Thus, result-oriented fairness operationalizes the classical administrative ideal of equality before the law within computational systems.

Process-Oriented Fairness. Process-oriented fairness emphasizes the procedural dimension of algorithmic decision-making. It concerns whether affected individuals have access to meaningful participation, explanation, and appeal mechanisms throughout the algorithmic process. In algorithmic discretion, procedures are often encoded into automated workflows, which may obscure the grounds on which decisions are made. Ensuring procedural fairness therefore requires transparency in data sources, interpretability of algorithmic reasoning, and the possibility of human review or override. This type of fairness resonates with the administrative law principles of due process and procedural justice, reaffirming that legitimacy arises not only from correct results but also from just procedures.

Structural Fairness. Structural fairness extends beyond individual cases to the institutional and systemic foundations of algorithmic discretion. It focuses on whether the data infrastructure, institutional design, and resource allocation underlying algorithmic systems embody equitable conditions. Structural fairness demands that data collection processes be representative, that model training avoids reinforcing historical inequalities, and that algorithmic oversight institutions ensure balanced participation and accountability. It thus transforms fairness from an individual guarantee into a systemic governance value—a precondition for maintaining equality and legitimacy in digital administration.

Taken together, result-oriented fairness, process-oriented fairness, and structural fairness capture the multidimensional normative demands that algorithmic administrative discretion must satisfy. However, identifying these types of fairness is only the first step. A central challenge remains how these distinct fairness requirements can be systematically translated into concrete governance mechanisms capable of guiding algorithmic administrative discretion systems throughout their development, deployment, and use. This challenge points beyond conceptual classification toward the question of institutional realization.

Normative Realization of Fairness Values: Lifecycle Governance of Algorithmic Systems

The realization of fairness in algorithmic administrative discretion requires not only theoretical clarification but also institutional embedding across the entire lifecycle of algorithmic administrative systems. While the preceding section has distinguished result-oriented fairness, process-oriented fairness, and structural fairness as three interrelated normative dimensions, identifying these dimensions alone is insufficient. Fairness cannot be secured by post hoc correction alone; it must be proactively integrated into the design, operation, and supervision of algorithms as a continuous governance process.From the perspective of administrative law, this normative realization entails translating different types of fairness into corresponding gover-

nance mechanisms—legality, proportionality, transparency, and accountability—across each stage of the algorithmic lifecycle. Result-oriented fairness calls for controls over decision outcomes, process-oriented fairness requires procedural safeguards and oversight, and structural fairness demands institutional and infrastructural guarantees.

Accordingly, fairness-oriented governance can be divided into three stages: ex ante (design and legality review), in-process (human–algorithmic oversight and adaptive governance), and ex post (accountability, auditing, and redress).

Ex Ante: Design and Legality Review. At the ex ante stage, fairness must be embedded as a design principle and legal requirement in the development of algorithmic administrative systems. This phase determines the normative direction of algorithmic discretion by shaping its data sources, modeling methods, and institutional procedures before the system is deployed.

First, legality and legitimacy assessments should be established to ensure that algorithmic objectives conform to statutory mandates and proportionality requirements. The design of algorithms must serve legitimate administrative purposes and avoid excessive or discriminatory data processing. Second, a data legality and representativeness review should be conducted. Data used to train and operate administrative algorithms must be lawfully obtained, up-to-date, and representative of the populations affected. Third, fairness constraints—such as statistical parity, equal opportunity, or counterfactual fairness—should be built into the modeling phase to reduce structural bias at the source. These constraints transform fairness from an ethical aspiration into a computational norm. Finally, multi-stakeholder participation should be institutionalized. Legal experts, data scientists, civil society representatives, and affected groups should be involved in the rule-making and evaluation processes of algorithmic design.

Through these mechanisms, fairness is not treated as an afterthought but as a normative architecture guiding the initial formation of algorithmic discretion. It ensures that the system's legal and ethical boundaries are established before decisions are made, embodying the principle of "fairness by design."

In-Process: Human–Algorithmic Oversight and Adaptive Governance. During the in-process stage, fairness must be actively maintained through real-time oversight and adaptive governance mechanisms. Algorithmic systems are not static entities; their performance and impact evolve as data and administrative contexts change. Thus, fairness requires continuous supervision and dynamic recalibration.

First, a human–algorithmic oversight mechanism should be maintained. Administrative officials must retain the authority and competence to review, interpret, and, when necessary, override algorithmic outputs. This preserves the accountability chain between machine reasoning and human responsibility. Second, dynamic transparency should be guaranteed through explainable interfaces, decision logs, and traceable documentation. These tools enable internal supervisors and external auditors to understand how fairness principles are operationalized in specific cases. Third, adaptive governance mechanisms should allow algorithms to self-correct when disparities or deviations from fairness metrics are detected. This may involve automated alerts, parameter adjustments, or retraining based on updated data. Finally, the allocation of responsibility between human officials, algorithm designers, and institutional regulators must be clearly defined to prevent diffusion of accountability.

The in-process stage thus transforms fairness into a living norm—continuously enacted and adjusted through human–algorithmic interaction. It ensures that fairness is not merely designed into the system but actively practiced and enforced during operation.

Ex Post: Accountability, Auditing, and Redress. At the ex post stage, fairness is realized through accountability mechanisms, external audits, and remedies that address potential errors, biases, or injustices arising from algorithmic discretion. This stage performs a corrective and reflexive function, linking individual redress with systemic improvement.

First, independent algorithmic auditing systems should be established to evaluate compliance with fairness standards. These audits—whether internal or external—should assess both outcome equality and procedural transparency, and their results must be publicly disclosed. Second, redress mechanisms should guarantee that individuals affected by algorithmic decisions can contest, appeal, or seek explanations. Such mechanisms may take the form of administrative reconsideration, judicial review, or ombudsman intervention, ensuring that algorithmic discretion remains subject to the rule of law. Third, institutional learning loops should be created to feed audit findings and redress outcomes back into the design and governance processes. This cyclical feedback ensures that fairness improves cumulatively over time rather than being corrected only in isolated cases. Finally, agencies should publish periodic fairness reports summarizing algorithmic performance, identified disparities, and remedial actions. These reports function as instruments of transparency, enabling both public scrutiny and policy learning.

Through these mechanisms, fairness becomes not only a design norm but a sustained institutional commitment. The ex post stage anchors algorithmic discretion within a framework of accountability and continuous moral recalibration—ensuring that administrative legitimacy is maintained even in the face of automation.

Conclusion

Algorithmic administrative discretion marks a profound transformation in the exercise of public power. By transferring part of human judgment to data-driven systems, administrative decision-making becomes increasingly reliant on computational logic. This shift, however, does not eliminate discretion—it reconfigures it. Algorithms do not replace human agency but reshape the structural, procedural, and normative foundations upon which administrative decisions are made.

This paper has sought to conceptualize this transformation through three analytical dimensions. First, by examining the internal structure of algorithmic discretion, it revealed that administrative judgment is now distributed across a tri-layer architecture of data, models, and institutional arrangements.

Second, by analyzing the operational mechanisms, it illustrated how discretion functions dynamically through information, decision, and feedback flows—constituting a recursive process of human–algorithmic collaboration. Third, by exploring the normative realization of fairness, it demonstrated that the legitimacy of algorithmic discretion depends on whether fairness is institutionally embedded throughout the algorithmic lifecycle—from design and operation to accountability and redress.

Together, these findings suggest that algorithmic administrative discretion is not merely a technological innovation but a juridical reconstruction of administrative authority. Its promise lies in enhancing consistency, efficiency, and rationality; its peril, in undermining equality, transparency, and procedural justice. The key to reconciling these tensions is to transform fairness from an abstract value into a governance norm—one that is codified in design standards, enforced through institutional mechanisms, and sustained by ongoing accountability.

Ultimately, the digitalization of administrative discretion does not signify the decline of the rule of law, but its renewal. In embedding fairness, legality, and proportionality within algorithmic systems, the law extends its normative reach into the computational realm. The future of administrative justice will depend on whether this extension can preserve the human spirit of fairness while embracing the algorithmic capacity for precision—achieving not a substitution of judgment, but a co-evolution between law and technology.

References

Coglianese, C.; and Lehr, D. 2017. Regulating by Robot: Administrative Decision Making in the Machine-Learning Era. *Georgetown Law Journal*, 105: 1147–1223. All Faculty Scholarship, Paper 1734.

Covilla., J. C. 2025. Artificial Intelligence and Administrative Discretion: Exploring Adaptations and Boundaries. *European Journal of Risk Regulation*, 16(1): 36–50.

Henderson, P.; and Krass, M. 2023. Algorithmic Rulemaking vs. Algorithmic Guidance. *Harvard Journal of Law & Technology*, 37(1). Princeton University Program in Law & Public Affairs Research Paper.

Kasy, M.; and Abebe, R. 2021. Fairness, Equality, and Power in Algorithmic Decision-Making. In *Proceedings of the 2021 ACM Conference on Fairness, Accountability, and Transparency*, FAccT '21, 576–586. New York, NY, USA: Association for Computing Machinery. ISBN 9781450383097.

Kennedy, R. 2020. *The Rule of Law and Algorithmic Governance*, 209–232. Cambridge Law Handbooks. Cambridge: Cambridge University Press.

Luca Oneto, S. C. 2020. Fairness in Machine Learning. arXiv:2012.15816.

Roehl, U. B. 2023. Automated decision-making and good administration: Views from inside the government machinery. *Government Information Quarterly*, 40(4): 101864.

Selbst, A. D.; Boyd, D.; Friedler, S. A.; Venkatasubramanian, S.; and Vertesi, J. 2019. Fairness and Abstraction in Sociotechnical Systems. In *Proceedings of the Conference on Fairness, Accountability, and Transparency*, FAT* '19, 59–68. New York, NY, USA: Association for Computing Machinery. ISBN 9781450361255.

Wikipedia. 2025. Dutch Childcare Benefits Scandal. https://en.wikipedia.org/wiki/Dutch_childcare_benefits_scandal. Accessed: 2025-12-15.