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Automated Decision-Making and the Rule of Algorithm: Challenges to Accountability in Indian Governance

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Automated Decision-Making and the Rule of Algorithm: Challenges to Accountability in Indian Governance

ABSTRACT

The increasing use of automated decision-making (ADM) systems in public governance marks a shift in how administrative and judicial decisions are made and implemented. ADM systems offer unmatched efficiency and consistency in handling large volumes of data, but they also raise concerns regarding transparency, accountability, and fairness. The opaque nature of algorithmic processes, often described as the "black box" problem, creates a "deficient scrutiny problem," making it difficult to understand, challenge, or review decisions that affect individual rights and liabilities. This raises another issue of a transition from the "rule of law" to a "rule of algorithm," where decision-making is shaped by systems that are not easily understandable or challengeable. This paper examines the rift between ADM and constitutional principles, particularly non-arbitrariness, speaking order, and procedural fairness. It also highlights the risks of algorithmic bias in the Indian context, including concerns of "digital casteism," where systems trained on historical data may reproduce existing social inequalities. The paper analyses India's response through the DPDP Act, 2023, the DPDP Rules, 2025, the Reserve Bank of India's approach to responsible AI, and the India AI Governance Guidelines. While these developments indicate a move towards integrating legal and technical safeguards, they remain insufficient to address the challenges posed by ADM. The paper proposes a techno-legal approach combining legal standards with design architecture, continuous auditing, and institutional oversight. It concludes that the legitimacy of ADM in governance depends on the development of effective mechanisms for scrutiny and accountability.

KEYWORDS

Automated Decision-Making (ADM), Algorithmic Accountability, Digital Casteism, Algorithmic Governance, Explainable AI (xAI)

INTRODUCTION

Governments worldwide increasingly rely on data-driven automated decision-making (ADM) systems to assist or replace human decision-making in areas such as welfare, financial regulation, policing and public

administration[1], raising questions about how such decisions are made and how they can be scrutinised.[2]

Pertinently, ADM does not operate in a simple binary of human versus machine, rather it operates across a spectrum, from merely assisting to recommending outcomes, or even determine outcomes with minimal or no human intervention.[3] In India, this integration can be seen in the use of assistive tools such as SUPACE and SUVAS, to assists judges in legal research and translation.[4]

This transition, however, brings out a conflict between human decision-making, based on fairness, reasoning, and accountability, resulting into explainable decisions, contrarily, algorithm-based systems, function in incomprehensible ways, working on complex data-driven architectures and evolving patterns.[5] There have also been concerns of bias, lack of transparency, and errors which further adds to the problems associated with automated systems.[6]

Concerns also arise from the use of historical data which may repeat existing social inequalities,.[7] "Digital casteism" is the term that has been coined to describe this bias.[8]

Recognising these concerns, India has now begun to respond through data protection law, AI governance guidelines, and sector-specific frameworks such as those issued by the Reserve Bank of India.[9]

In India, early forms of automation were largely rule based and used in areas such as taxation and public service, where predefined instructions

[1] R. Mackenzie-Gray Scott & L. Edwards, *The Inscrutable Code? The Deficient Scrutiny Problem of Automated Government*, 2025 TECH. & REG. 37; D. Joshi, *Automated Administration: Administrative Law and Algorithmic Decision-Making in India* (2023); P. Sejwal & M. Gupta, Automated Decision-Making in Indian Credit Scoring, 998 ADVANCES SOC. SCI. 33 (2026).

[2] N. Varanasi, *Biases in Automated Decision-Making Systems*, 3 CMR J. CONTEMP. LEGAL AFF. 133 (2021);
S. Shruthika, *Algorithmic Governance and Administrative Discretion in India*, 5 VU L.J. (2025).

[3] R. Mackenzie-Gray Scott & L. Edwards, supra note 1.

[4] Supreme Court of India, *White Paper on Artificial Intelligence and the Judiciary* (2025).

[5] R. Mackenzie-Gray Scott & L. Edwards, supra note 1; P. Christodoulou & K. Limniotis, *Data Protection Issues in ADM Systems*, 4 NETWORK 111 (2024).

[6] N. Varanasi, supra note 2; P. Christodoulou & K. Limniotis, supra note 5.

[7] Supreme Court of India, supra note 4; N. Varanasi, supra note 2.

[8] S. Shruthika, supra note 2.

[9] Ministry of Electronics & Information Technology, *India AI Governance Guidelines* (2025);
Reserve Bank of India, *Framework for Responsible and Ethical Enablement of AI (FREE-AI)* (2025).

assisted routine decision making.[10] However, with the expansion of digital infrastructure, governance is moving towards automated systems that can identify patterns, make predictions, and influence outcomes.[11]

These developments need to be examined through the lens of Articles 14 and 21 of the Constitution of India, requiring State actions to be non-arbitrary, and that any procedure affecting rights must be just, fair, and reasonable,[12] and the doctrine against fettering of discretion requiring authorities to exercise independent judgment.[13] However, where decisions are influenced by "black box" systems whose reasoning is opaque, meeting these standards becomes difficult.[14] Similarly, the principle of audi alteram partem is also impacted, as lack of transparency makes decision incomprehensible and unchallengeable.[15] Further, the reliance on algorithmic outputs also raises concerns of "automation bias," where decision-making shifts away from human reasoning.[16]

This leads us to the question, can existing legal framework effectively address ADM systems? To answer this question, this paper adopts a socio-legal approach, combining doctrinal analysis of constitutional and administrative law in contrast to ADM systems.

THE SCRUTINY GAP IN AUTOMATED DECISION-MAKING: PROBLEMS, CAUSES AND CONSEQUENCES

The "Black Box" Problem

ADM in governance presents a fundamental question regarding how decisions are made and whether they can be meaningfully examined or challenged.[17] This has been described as a "deficient scrutiny problem," where reliance on algorithmic systems makes it difficult for individuals, governments, and courts to understand or evaluate decision-making processes.[18]

The major problem with ADMs is the opacity of algorithmic systems, often referred to as the "black box" problem, i.e. the ADM systems are based on complex and "high-dimensional decision-making processes"

[10] D. Joshi, supra note 1.
[11] S.R. Nair, *AI and Bureaucracy: Opportunities and Risks in Automated Decision-Making*, 10 INT'L J. INNOVATIVE SCI. & RES. TECH. (2025).
[12] INDIA CONST. arts. 14, 21.
[13] D. Joshi, supra note 1.
[14] N. Varanasi, supra note 2.
[15] S. Shruthika, supra note 2; D. Joshi, supra note 1.
[16] R. Mackenzie-Gray Scott & L. Edwards, supra note 1.
[17] P. Christodoulou & K. Limniotis, supra note 5.
[18] R. Mackenzie-Gray Scott & L. Edwards, supra note 1.

that are not easily interpretable.[19]

The Supreme Court of India's White Paper on AI and the judiciary cautions against overreliance on automated systems whose functioning is opaque and difficult to explain, and emphasises the need for a final human arbiter.[20]

Algorithmic Bias And Structural Inequality

ADM systems are trained on data, often historical, which may allow existing social and institutional inequalities to creep into the system, especially when variables such as location, language, caste, community, income, other socio-economic indicators are used.[21] In India, this introduces a form of bias described as "digital casteism," where automated systems replicate existing social discrimination.[22] Studies have also shown that AI systems can generate stereotypical portrayals of 'Dalit' communities due to biased datasets, indicating that discrimination may occur not only in decision-making but also in representation.[23]

There have also been instances of exclusion arising from biometric authentication failures in Aadhaar-linked welfare systems, leading to denial of essential services to legitimate beneficiaries,[24] similarly, there have been concerns of continued over-surveillance of marginalised communities.[25]

Institutional Causes: Automation Bias and Delegation of Decision-Making

Institutional and behavioural factors also contribute to the scrutiny gap, particularly in the form of "automation bias," where there is a tendency to rely on automated decisions assuming them to be correct.[26] The Supreme Court's White Paper also cautions against such overreliance, emphasising that AI tools should remain assistive and that a human must be the final arbiter[27] or else it may lead to what may be described as a

[19] P. Christodoulou & K. Limniotis, supra note 5.
[20] Supreme Court of India, supra note 4.
[21] N. Varanasi, supra note 2; S. Shruthika, supra note 2; P. Christodoulou & K. Limniotis, supra note 5.
[22] Supreme Court of India, supra note 4.
[23] Id.; Maktoob Media, *Report Flags Risks to Minorities and Privacy in AI Systems in India* (2026).
[24] S. Shruthika, supra note 2.
[25] N. Varanasi, supra note 2.
[26] R. Mackenzie-Gray Scott & L. Edwards, supra note 1; D. Joshi, supra note 1.
[27] Supreme Court of India, supra note 4.

situation of "delegation of discretion."

Barriers to Accountability: Ignorance of Harm and Lack of Redress

If a person does not know that a harm has been caused, the question of challenging it does not arise. For example, failures in the Public Distribution System (PDS) linked to biometric authentication of Aadhaar have led to instances of denial of rations to eligible beneficiaries. Reports have shown exclusion from food distribution due to fingerprint mismatches or lack of connectivity, with very little opportunity to dispute such outcomes.[28]

Similar problems have also been reported, such as the *'Madhya Pradesh Mukhyamantri Teerth Darshan Yojana'* has seen cases where automated systems denied access to beneficiaries due to incorrect or missing data, leaving them with no effective recourse.[29] Telangana's Samagra Vedika has also raised concerns regarding profiling across departments to identify beneficiaries and detect fraud, highlighting risks of large-scale profiling and lack of transparency.[30] This has been described as "ignorance of harm".[31] This raises the possibility of "digital tyranny," where power vests with algorithmic systems rather than accountable institutions.[32]

Scale, Legitimacy and Concentration of Power

When decision-making processes are opaque and spread across layers of data and algorithms, it becomes difficult to identify the responsible, leading to a situation of distributed accountability amongst system designers, data providers, ADM tools, and decision-making authorities.[33]

Similar concerns arise in systems like the Fraud Analytics Control and Tracking System (FACTS) used under the PMJAY health insurance scheme, where algorithmic tools are deployed to detect fraudulent claims, implemented for large-scale monitoring, the opacity of such systems raises questions about how decisions are made and whether they meet standards of reasonableness.[34] Similarly in the Faceless Assessment Scheme (FAS), where tax assessments are conducted electronically

[28] S. Shruthika, supra note 2; Reetika Khera, *Impact of Aadhaar on Welfare Programmes*, 52 ECON. & POL. WKLY. (2017).
[29] The Hindu, *Issues in Implementation of MP Teerth Darshan Yojana* (2024).
[30] Internet Freedom Foundation, *Samagra Vedika and Data Profiling Concerns* (2021).
[31] R. Mackenzie-Gray Scott & L. Edwards, supra note 1.
[32] N. Varanasi, supra note 2.
[33] R. Mackenzie-Gray Scott & L. Edwards, supra note 1.
[34]National Health Authority, Government of India (2022); P. Sejwal & M. Gupta, supra note 1.

without direct interaction, aimed at reducing arbitrariness and corruption, raises concerns regarding transparency and the ability to challenge decisions,[35] and the lack of comprehensibility and accountability, undermines the 'legitimacy of governance'.[36]

From Rule of Law to "Rule of Algorithm": The Broader Transformation

The lack of procedural fairness is another issue associated with the scrutiny gap in ADM systems. Where individuals are unable to understand or challenge automated decisions, principles such as audi alteram partem and speaking orders are affected, as opaque systems prevent access to reasoning or underlying data, thereby limiting effective redressal.[37]

The Supreme Court's White Paper also emphasises that while AI may improve efficiency, it cannot compromise fairness or due process, and that decision-making authority must ultimately rest with humans. Also, where decisions are generated by opaque or unaccountable systems, public confidence in governance is diminished.

The increasing reliance on automation reflects a shift from a "rule of law" to a "rule of algorithm," where decisions are shaped by opaque systems that restricts understandability and challenge, leading to "digital tyranny".[38]

JUDICIAL AND REGULATORY RESPONSES TO ADM

Constitutional Standards

Article 14 of the Constitution of India requires that state action must not be arbitrary, while Article 21 mandates that procedures affecting rights must be fair, just, and reasonable.[39] However, in case of ADM, it becomes difficult to assure the standards of non-arbitrariness and fairness under the Constitution.[40]

The Supreme Court's White Paper on AI in the judiciary also emphasises that AI tools should remain assistive, and that human should be the final arbiter, cautioning against reliance on opaque systems and highlighting the need to preserve accountability and procedural safeguards in judicial

[35] Central Board of Direct Taxes, *Faceless Assessment Scheme* (2021); C.S. Agarwal, *A Framework for Reasoned Automated Decision-Making Under Indian Administrative Law* (2024).
[36] S.R. Nair, supra note 13.
[37] S. Shruthika, supra note 2; D. Joshi, supra note 1.
[38] N. Varanasi, supra note 2.
[39] INDIA CONST. arts. 14, 21.
[40] N. Varanasi, supra note 2; R. Mackenzie-Gray Scott & L. Edwards, supra note 1.

processes.[41]

Reasoned Decisions and Non-Fettering of Discretion

The requirement of speaking order in ADM is essential for fairness and enables effective judicial review. In Jaswinder Singh v. State of Punjab (2023), the court referred to ChatGPT for a broader perspective on 'bail' but clarified that such outputs were neither determinative nor authoritative, reflecting a "human-in-the-loop" approach, where automated tools may assist but cannot replace human reasoning, noting that AI may be useful in procedural functions, but not as an adjudicator.

However, many algorithmic systems operate as "black boxes," making it difficult to provide "speaking orders," as outcomes are generated through processes that are not easily identifiable.[42]

The doctrine against fettering of discretion[43] also requires authorities to exercise independent judgment and not rely blindly on external inputs. When decision-makers depend excessively on automated outputs, particularly due to "automation bias," it undermines both independent discretion and administrative law.[44]

The DPDP Framework

Rule 13 of the DPDP Rules 2025 introduce obligations for Significant Data Fiduciaries (SDF) relating to data governance, risk assessments, and accountability, requiring SDF to implement measures ensuring that data processing systems do not adversely affect the rights of Data Principals[45], which may be seen as elements of "algorithmic due diligence," requiring entities to identify and manage risks associated with processing personal data. These obligations apply irrespective of direct human involvement, thereby recognising that accountability extends to automated decision-making processes too.[46]

However, academic research suggests that these provisions remain indirect and insufficient to address the challenges posed by opaque decision-making. In the absence of a recognised "right to explanation," individuals continue to face difficulty in understanding how or why such

[41] Supreme Court of India, supra note 4.
[42] P. Christodoulou & K. Limniotis, supra note 5.
[43] C.S. Agarwal, supra note 36.
[44] D. Joshi, supra note 1; S. Shruthika, supra note 2; R. Mackenzie-Gray Scott & L. Edwards, supra note 1.
[45] Ministry of Electronics & Information Technology, supra note 9.
[46] Id.; P. Sejwal & M. Gupta, supra note 1.

decisions are made.[47]

RBI's FREE-AI Framework and Financial Governance

Beyond general data protection frameworks, sectoral regulation provides important means to address risks arising from automated decision-making. The Reserve Bank of India's FREE-AI Framework sets out an approach for the responsible use of AI in financial services.[48] Built on the "*Seven Sutras*," including fairness, "accountability", and "understandable by design," the RBI emphasises that trust must form the basis of AI implementation, and that systems should allow meaningful oversight. It also recognises risks such as bias, in-explainability, and data vulnerability, and suggests measures like risk-based governance, focusing not only on compliance but also on continuous oversight and accountability. This aligns with broader trends emphasising continuous monitoring of AI systems rather than one-time compliance check.[49]

India's Techno-Legal Approach to AI Governance

Indian approaches to AI governance are reflected in documents such as the India AI Governance Guidelines and the Techno-Legal White Paper prepared by the Office of the Principal Scientific Adviser.[50] Both adopt a "techno-legal approach," which seeks to integrate legal principles into the design and functioning of automated systems rather than relying only on law. This includes building safeguards into systems, ensuring governance across their lifecycle, and establishing oversight mechanisms.

The Guidelines also set out principles such as "people first," "accountability", and "understandable by design," to align AI systems with constitutional values. Further, this approach emphasises the need for institutional mechanisms such as AI Safety Institutes (AISI) and regulatory bodies to oversee and evaluate automated systems.

The Persistence of the Scrutiny Gap

Although there have been developments in regulating automated decision-making in India, much remains to be done. The existing framework is fragmented, with different aspects of AI governance

[47] P. Sejwal & M. Gupta, supra note 1.
[48] Reserve Bank of India, supra note 9.
[49] Responsible AI Governance Network, *The 2025 Responsible AI Governance Landscape* (2025).
[50] Office of the Principal Scientific Adviser to the Government of India, *Strengthening AI Governance Through Techno-Legal Framework* (2026); Ministry of Electronics & Information Technology, supra note 9.

addressed through multiple legislations, guidelines, and sector-specific regulations, creating a need for consolidation.

Research has identified that the "deficient scrutiny problem" continues to persist, particularly where algorithmic systems operate without meaningful oversight or transparency.[51] This suggests that despite progress, the current framework may not sufficiently bridge the gap between technological practices and legal requirements. The comparative jurisprudence such as State v. Loomis[52] highlights concerns regarding the use of algorithmic tools where their functioning is not fully disclosed, also upholding the principles of transparency and disclosure, particularly where decisions affect fundamental rights, as in India.

BRIDGING THE SCRUTINY GAP: TOWARDS A TECHNO-LEGAL FRAMEWORK FOR ACCOUNTABLE AUTOMATED DECISION-MAKING

Explainability and the Idea of "Speaking Algorithms"

In the context of ADM, the primary requirement of administrative law to provide reasoning for actions affecting individual rights may evolve into a requirement for "speaking algorithms," where systems are able to communicate a logical explanation for how a decision was reached. This does not require disclosure of source code, but that the rationale must be articulated in a way that allows individuals to understand and challenge the decision.

The India AI Governance Guidelines emphasise that systems should be "understandable by design," indicating that explainability must be integrated during development rather than treated as an afterthought.[53] Similarly, the RBI's FREE-AI Framework recognises explainability as essential for building trust in automated systems.[54]

Therefore, existing legal standards on reasoned decisions may be expanded to require that automated systems provide explanations that are meaningful, accessible, and capable of review.

Algorithmic Auditing and Continuous Oversight

The typical regulatory approach of one-time compliance check is not sufficient for automated systems as they continuously evolve, creating the need for continuous monitoring, periodic auditing, and evaluation.

[51] R. Mackenzie-Gray Scott & L. Edwards, supra note 1.
[52] State v. Loomis, 881 N.W.2d 749 (Wis. 2016).
[53] Ministry of Electronics & Information Technology, supra note 9.
[54] Reserve Bank of India, supra note 9.

Recognising that biases and errors may develop over time, policy discussions have emphasised a shift towards "governance in practice," where continuous oversight ensures accountability rather than reliance on one-time compliance.[55]

Further, the 'techno-legal' framework proposed by Indian policy institutions supports a "life-cycle based regulation," where systems are assessed at different stages of their deployment.[56]

Technical Tools for Enhancing Transparency

Developments in explainable artificial intelligence (xAI) provide such tools, including "feature importance analysis," "counterfactual explanations," and other model interpretability techniques, which can improve transparency in ADM processes.[57]

Further, requiring ADM systems to provide "saliency maps" can help identify which inputs or processes influenced a particular outcome.[58] Similarly, mechanisms such as "chain-of-thought prompting" break down complex reasoning into intermediate steps, making decision processes more transparent and easier to examine.[59]

These tools can assist in simplifying complex "high dimensional decision-making processes" into explanations that are more accessible to humans, thereby helping bridge the gap between technical systems and legal requirements.[60]

Institutional Mechanisms and Regulatory Bodies

Effective governance of ADM requires robust institutional mechanisms for regulation and oversight. Bodies such as the AI Governance Group (AIGG) and the AI Safety Institute (AISI), proposed under India's AI Governance Guidelines, are intended to provide technical expertise and supervision.[61]

Existing institutions, such as the Data Protection Board established under Section 18 of the DPDP Act, 2023, can also play an important role in addressing data-related harms arising from ADM systems. However, there is a need to strengthen such bodies through greater capacity,

[55] Responsible AI Governance Network, supra note 50.
[56] Office of the Principal Scientific Adviser to the Government of India, supra note 51.
[57] P. Christodoulou & K. Limniotis, supra note 5.
[58] CHRISTOPH MOLNAR, INTERPRETABLE MACHINE LEARNING (2d ed. 2022).
[59] Jason Wei et al., *Chain-of-Thought Prompting Elicits Reasoning in Large Language Models* (2022).
[60] Philipp Upmann, *AIGN OS: The Operating System for Responsible AI Governance* (2025).
[61] Ministry of Electronics & Information Technology, supra note 9.

technical expertise, and coordination to ensure effective enforcement of their mandates.

Human-in-the-Loop Governance

Policy frameworks emphasise the need to retain human involvement in decision-making. The Supreme Court's White Paper states that AI tools should remain assistive, with a human being the final arbiter.[62] "Human-in-the-loop" governance is therefore necessary to ensure that accountability is not transferred to automated systems.

However, there is a risk that human oversight may become merely symbolic. Meaningful accountability can exist only where decision-makers are both capable of and responsible for reviewing automated decisions.

Towards an Integrated Techno-Legal Model

There is a need for "techno-legal" solution combining legal standards with technical systems and institutional structures to address issues with automated systems.[63]

Such a solution would include:

1. Fairness and transparency embedded in system design
2. Continuous monitoring and audits
3. Institutional oversight
4. Human accountability

Accordingly, the proposed AI Safety Institute (AISI) can act as a "technical anchor" within governance, being responsible for developing evaluation standards, audit criteria, and conducting "red-teaming" of high-risk systems to identify harms prior to deployment.[64]

In the absence of such mechanisms, there is a risk of creating an "accountability vacuum," particularly affecting individuals who lack the capacity to understand or challenge automated decisions.[65]

CONCLUSION

The increasing use of ADM marks a shift in the exercise of administrative power. While offering efficiency, consistency, and scalability, it also exposes gaps in the existing regulatory framework. The "black box"

[62] Supreme Court of India, supra note 4.
[63] Office of the Principal Scientific Adviser to the Government of India, supra note 51.
[64] Supreme Court of India, supra note 4; Office of the Principal Scientific Adviser to the Government of India, supra note 51.
[65] Maktoob Media, supra note 24; Internet Freedom Foundation, supra note 31.

nature of such systems and the risk of "automation bias," contributes to what has been described as a "deficient scrutiny problem," where decisions become difficult to understand, challenge, or review.

Although developments such as the DPDP Act, DPDP Rules, RBI's FREE-AI Framework, and India AI Governance Guidelines indicate progress, they remain fragmented and insufficient to fully address these challenges.

Addressing these concerns requires a "techno-legal" approach that combines legal standards with technical design and institutional oversight. Measures such as explainability, continuous auditing, and human-in-the-loop governance are necessary to preserve administrative law values. At the same time, regulatory approaches must balance innovation and risk, as reflected in the RBI's "tolerant supervisory stance," and ensure that datasets used in AI systems reflect the diversity of Indian society to enable fairness at scale.[66]

Ultimately, the validity of ADM in India will depend not on its efficiency alone, but on whether it remains accountable, explainable, and open to challenge under human oversight. Without these safeguards, the shift towards automation risks undermining the rule of law it seeks to advance.

[66] Reserve Bank of India, supra note 9; Ministry of Electronics & Information Technology, supra note 9.