CANONSPHERE LAW REVIEW

ISSN: 3107-460X (Online)

CANONSPHERE LAW REVIEW

Volume 1 Issue 3

July to September, 2025

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Algorithmic Bias and Substantive Equality: Rethinking Article 14 in the AI Era

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ABSTRACT

Artificial Intelligence continues to penetrate the heart of India's governance and legal systems. As an example, in the case of AI-enabled facial-recognition systems, currently deployed to record student attendance in Telangana, to fintech services that aid in scoring an algorithmic credit rating, and judges using ChatGPT to help them with bail matters, technology is influencing who receives rights, opportunities, and justice. Algorithms are supposed to be efficient and fast, yet they also introduce an undetectable threat: that of reproducing existing inequalities by introducing hidden data and design bias. This is not just a technical issue, it is a constitutional issue in a country where caste, gender and class divisions are still very strong and institutionalized. This paper states that Article 14 of the Indian Constitution needs to be re-examined according to the constitutional harms of algorithmic bias. The pre-existing tests of reasonable classification, and arbitrariness, which were important during their time, have not kept up to date in regard to systemic discrimination caused by hidden and automated decision-making. Drawing on the Supreme Courts jurisprudence of substantive equality as depicted in cases such as E. P. Royappa v. State of Tamil Nadu and Navtej Singh Johar v. Union of India, this paper engages with a framework that renders algorithmic bias a violation of constitutional equality. The analysis situates India within global debates on AI regulation, referencing the European Union's AI Act, Brazil's draft AI bill, and discussions on compute sovereignty across the Global South. Ultimately, the paper contends that embedding substantive equality into AI governance is constitutionally necessary if technological progress is to advance rather than undermine justice in India.

Keywords: Algorithmic Bias; Substantive Equality; Social Divisions; Artificial Intelligence; Indian Constitution.

INTRODUCTION

"Constitutional morality is not a natural sentiment. It has to be cultivated. We must realise that our people have yet to learn it."[1]

When B.R. Ambedkar made this remark during the framing of the Constitution, he was warning that constitutional promises could not fulfil themselves. They required active interpretation, vigilance, and discipline. More than seventy-five years later, Ambedkar's warning acquires a new relevance in the age of artificial intelligence (AI). If constitutional morality has to be cultivated in human institutions, what happens when those institutions outsource critical decisions to algorithms? Can code, written in opaque languages of data and probability, ever be held to the discipline of constitutional morality?

Artificial intelligence has entered the core of India's governance, law, and economy in ways that were unimaginable even a decade ago. In 2025, Telangana rolled out AI-based facial recognition systems for recording attendance in junior colleges, affecting more than sixty-three thousand students every day.[2] Fintech firms increasingly rely on algorithmic credit scoring to decide who is worthy of loans, often using data points as subtle as mobile phone usage or shopping histories.[3] The judiciary, too, has not remained untouched: in March 2023, the Punjab and Haryana High Court consulted ChatGPT while framing a bail order.[4] Meanwhile, the Reserve Bank of India's *Framework for Responsible and Ethical Enablement of Artificial Intelligence (FREEAI)* has explicitly cautioned that algorithmic deployment in finance can entrench systemic bias and exclusion if left unregulated.[5] These examples illustrate a profound shift in how state and private power is exercised: algorithms are now mediating who gets welfare, who receives education, who qualifies for credit, and even who is granted liberty.

The problem, however, is that algorithms are not neutral. Global research shows that AI systems frequently reproduce and magnify existing social inequalities. Joy Buolamwini and

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[1] B.R. Ambedkar, Constituent Assembly Debates, Vol. VII, Nov. 4, 1948, available at https://cadindia.clpr.org.in/.
[2] Telangana Introduces AI-Powered Facial Recognition System for Student Attendance, *Times of India* (Aug. 6, 2025), https://timesofindia.indiatimes.com/.
[3] Krishna N. Das, India Cenbank Committee Recommends AI Framework for Finance Sector, *Reuters* (Aug. 13, 2025), https://www.reuters.com/.
[4] Punjab & Haryana HC Uses ChatGPT in Bail Order, *Bar & Bench* (Mar. 27, 2023), https://www.barandbench.com/.
[5] Id.

Timnit Gebru's *Gender Shades* project demonstrated error rates of up to 34.7 percent for darker-skinned women in commercial facial recognition, compared to less than 1 percent for lighter-skinned men.[6] In the United States, the COMPAS risk-assessment tool used in bail and sentencing decisions was shown to predict recidivism more harshly for Black defendants, even when controlling for prior records.[7] These findings are not just global anecdotes; they resonate deeply in India, where structural hierarchies of caste, gender, and class already shape access to opportunity. When algorithms trained on biased or incomplete data are deployed in India's diverse social landscape, they risk amplifying rather than correcting historic inequalities. Seen this way, algorithmic bias is not merely a technical malfunction. This challenge is one of constitutional significance. The Indian Constitution promises equality before the law and equal protection of the laws in Article 14. Over the decades, courts have interpreted Article 14 through doctrines of reasonable classification and arbitrariness[8]. These doctrines were intended for an era in which state action was transparent and reviewable, classifications were explicit, and policies traced to legislative or executive intent. Algorithmic governance severely upends this notion: decisions are probabilistic, not categorical; criteria of classification are buried deep in layers of code and data; and discriminatory outcomes may occur at scale before courts can intervene in a meaningful way.

The Indian judiciary has already begun a shift toward substantive equality. In E.P. Royappa v. State of Tamil Nadu, the Court famously stated that equality is "anti-arbitrariness"; this case and its breadth of scrutiny created a new standard for judging unjust state action[9]. In Navtej Singh Johar v. Union of India, the Court acknowledged that equality is substantive, inclusive, and brings with it an emphasis on dignity and the protection of vulnerable minorities[10]. These kinds of decisions show that even though jurisprudence is not a scholarly subject, it is changing. The challenge of the algorithmic society is that it is time to take this evolution further; that to have equality in the age of AI we need constitutional means, constructed on equality, and capable of redressing the systematic and large-scale injuries that automated systems have inflicted.

[6] Joy Buolamwini & Timnit Gebru, Gender Shades: Intersectional Accuracy Disparities in Commercial Gender Classification, in *Proc. Mach. Learn. Res.* 81 (2018).
[7] Julia Angwin et al., Machine Bias, ProPublica (May 23, 2016), https://www.propublica.org/article/machine-bias-risk-assessments-in-criminal-sentencing .
[8] *State of West Bengal v. Anwar Ali Sarkar*, A.I.R. 1952 S.C. 75
[9] *E.P. Royappa v. State of Tamil Nadu*, (1974) 4 S.C.C. 3
[10] *Navtej Singh Johar v. Union of India,* (2018) 10 S.C.C. 1

This paper contends that Article 14 needs to be re-conceptualized in the digital era by addressing explicitly the issue of algorithmic bias as a constitutional harm. It constructs an interpretive approach based on substantive equality, puts Indian developments in a comparative context with other debates in the field, including the European Union AI Act and a draft AI law in Brazil, and outlines Global South visions of infrastructural dependency and compute sovereignty. Accordingly, this paper aims to argue that incorporating substantive equality in AI governance is not only a policy choice. It is a constitutional imperative that the digital future of India should not turn its back on the promise of justice and equality that is incorporated in its Constitution.

PART I — ALGORITHMIC BIAS: CONCEPT AND INDIAN MANIFESTATIONS

Algorithms bias is not a one-dimensional, clean defect that can be resolved by the implementation of a patch. Rather, it is a complex, multi-layered outcome of design choices, the social provenance of information, economic motivations and institutional frames of application. The inability to acknowledge algorithmic bias as something beyond a technical issue obscures one of the most important aspects of how these systems mediate power, distribute opportunity, and provide in many cases a force that replaces human judgment on matters of equality and dignity as one might hope to be reflected in the Constitution.. In this section, we explore how algorithmic bias is produced, why it is especially consequential in India, and we highlight features of India's political economy that make algorithmic harms structurally persistent.

I. How bias emerges: three core mechanisms

First, bias is produced at the level of data. Machine learning systems learn correlations from historical records. Where those records encode social prejudice, models learn to reproduce it. This is well documented across domains: commercial facial recognition systems, trained on datasets dominated by lighter-skinned faces, perform far worse on darker skin tones; similarly, recidivism predictors trained on arrest and conviction data reflect historical policing practices.[11] But India amplifies these risks because public and private datasets are often incomplete, noisy, and skewed by legacy exclusion. Research on India shows that data

[11] Buolamwini & Gebru, supra note 6.

reliability is uneven across regions and communities, and that common fairness metrics developed in the Global North do not map easily onto Indian social realities.[12]

Second, bias is introduced by the choice of proxy variables and model objectives. Developers rarely encode caste or socio-economic disadvantage directly. Instead, algorithms rely on proxies such as mobile phone usage, geolocation, or transaction histories. These proxies are correlated with protected or quasi-protected characteristics in India, turning ostensibly neutral inputs into instruments of exclusion. For instance, AI-driven credit scoring models that use mobile data may systematically under-score rural users who share devices or rely on informal cash economies.[13] The proxy problem is especially pernicious because it can produce disparate outcomes without any explicit discriminatory intent or statute to review.

Third, bias becomes entrenched through feedback loops and institutional deployment. An algorithm that reduces welfare disbursement to certain localities will produce more missing data from those areas, which in turn trains future models to continue exclusion. Institutional incentives also matter. Private vendors compete on accuracy and scale rather than on fairness; public agencies under political pressure to cut costs may prefer automated systems that reduce visible administrative labor. The Reserve Bank of India's FREEAI committee has specifically warned that absence of governance and auditing could lead financial AI to *"bake in"* exclusionary practices at scale.[14]

II. Why India's context magnifies the constitutional stakes

India's social matrix makes algorithmic bias not merely an efficiency problem but a constitutional one. Three contextual features stand out. **F**irst, inequality in India is intersectional and spatial. Caste, gender, language, and region overlap in ways that simple fairness definitions fail to capture. A model that masks a pattern of caste disadvantage by focusing on income bands will not remedy underlying injustice. Scholars working on "*re-imagining fairness in India*" argue that fairness metrics must be localised and that technocratic definitions divorced from social realities lead to "*window dressing*."[15] **S**econd, India's administrative architecture frequently delegates public functions to private or

[12] Nithya Sambasivan et al., Re-imagining Algorithmic Fairness in India and Beyond, *Proc. ACM Hum. Comput. Interact.* (2021), https://dl.acm.org/doi/10.1145/3442188.3445896.
[13] See generally IS Darji, *AI-Driven Credit Scoring for Underbanked Population in India* (Rev. Res. Int. J. Mgt. 2025) (empirical study discussing alternative data limitations).
[14] Reserve Bank of India, *Framework for Responsible and Ethical Enablement of Artificial Intelligence (FREE-AI)* (Aug. 2025), https://www.rbi.org.in/ or committee PDF.
[15] Sambasivan, supra note 12.

quasi-private actors. Public procurement of algorithmic services, or regulatory arrangements that permit private platforms to mediate public entitlements, make it difficult to draw the line between state action and private conduct. Where private systems perform public functions, Article 14's protective reach must be understood to prevent state-enabled exclusion. The jurisprudential problem is compounded when governments adopt algorithmic tools as pilot programmes without statutory clarity or auditability.

Third, infrastructural and compute asymmetries create structural dependency. Recent work on compute sovereignty shows that AI compute capacity is concentrated in a handful of countries and regions, leaving most Global South states dependent on foreign cloud providers and third-party models.[16] This dependence means India may import models trained on different population distributions, or rely on closed-source APIs that cannot be meaningfully audited for bias. The result is not only a technical vulnerability but a constitutional one: an inability to interrogate how decisions affecting Indian citizens are produced.

III. Indian manifestations: three illustrative domains

To understand these mechanisms concretely, consider three domains where algorithmic decisions already shape important rights and entitlements in India.

Education and surveillance. The deployment of facial recognition for attendance in Telangana's junior colleges is emblematic of the expanding use of biometric and vision systems in everyday public administration.[17] Even if such systems reduce proxy attendance, they also introduce risks of misidentification and stigmatization for students from marginalised backgrounds. Evidence from fairness audits abroad suggests that such systems tend to misclassify darker-skinned women and non-binary users at higher rates; transplanted into India's demography, the error profile can map on to caste, region and gender in harmful ways.[18]

[16] Zoe Hawkins, Vili Lehdonvirta & Boxi Wu, *AI Compute Sovereignty: Infrastructure Control Across Territories, Cloud Providers, and Accelerators* (SSRN 2025), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=5312977.
[17] Telangana Introduces AI-Powered Facial Recognition System for Student Attendance, *Times of India* (Aug. 6, 2025), https://timesofindia.indiatimes.com/
[18] Buolamwini & Gebru, supra note 6.

Finance and credit inclusion. Fintech experiments in algorithmic credit scoring promise greater financial inclusion by using alternative data. Yet studies show that without careful calibration these models can replicate digital divides. Models that privilege smartphone metadata, for example, can disfavour subaltern households, migrant workers who change phones, and women who have limited online footprints. The RBI's FREEAI report underlines the need for audit logs, explainability, and sectoral safeguards precisely because the scale of financial exclusion can be amplified by automated denials.[19]

Administration of justice. The judiciary's flirtation with generative language models, most visibly the Punjab and Haryana High Court's use of ChatGPT, raises distinct equality concerns. If judges rely on machine summaries or suggested reasoning without verification, the risk is twofold: courts may adopt arguments that reflect biased training data, and litigants with fewer resources may be disadvantaged if counsel dependent on AI produce unreliable briefs. In a context where legal representation and access to appeal are already unequal, the introduction of opaque aids can shift the balance further against marginalised parties.[20]

IV. From technical diagnosis to constitutional urgency

The foregoing points show why algorithmic bias in India cannot be left to post-hoc technical fixes. The architecture of harm is constitutional because it reshapes access to socially entrenched entitlements at scale, often without notice or remedy. Addressing this requires three lines of response that the rest of the paper develops: doctrinal expansion to capture proxy and systemic discrimination under Article 14; institutional reforms to enable audit, redress and pre-deployment impact assessment; and infrastructural policy to reduce compute dependency and enable transparent, public-interest modelling.

[19] Reserve Bank of India, *FREE-AI*, supra note 14.
[20] Punjab & Haryana HC Uses ChatGPT in Bail Order, *Bar & Bench* (Mar. 27, 2023), https://www.barandbench.com/.

Part II — Rethinking Article 14 in the AI Era

Article 14 of the Indian Constitution guarantees that -

"*the State shall not deny to any person equality before the law or the equal protection of the laws within the territory of India.*"[21]

At first glance, this appears deceptively simple. Yet over seven decades, the Supreme Court has layered Article 14 with doctrinal tests that continue to shape the boundaries of state action and constitutional equality. To understand how algorithmic bias unsettles these doctrines, it is necessary to revisit their evolution.

I. The classical doctrine: reasonable classification and non-arbitrariness

The early approach to Article 14 was dominated by the **reasonable classification test**. In *State of West Bengal v. Anwar Ali Sarkar*, the Court struck down a law that enabled special courts with flexible procedures, warning that *"arbitrary discrimination cannot be hidden behind the facade of classification."*[22] The doctrine required two conditions: (i) an intelligible differentia distinguishing those grouped from others, and (ii) a rational nexus between the differentia and the object of the law.[23] This test, while effective against overt legislative distinctions, was soon criticised for permitting covert discrimination so long as a plausible nexus could be articulated.

The Court moved further in *E.P. Royappa v. State of Tamil Nadu*, famously rejecting *"equality as a formalistic pigeonhole."* Justice Bhagwati observed:

> *"Equality is a dynamic concept with many aspects and dimensions and it cannot be imprisoned within traditional and doctrinaire limits. From a positivistic point of view, equality is antithetic to arbitrariness. In fact, equality and arbitrariness are sworn enemies; one belongs to the rule of law in a republic while the other, to the whim and caprice of an absolute monarch."*[24]

This shift transformed Article 14 into a general check against arbitrariness in state action, broadening its reach beyond explicit classifications.

[21] India Const. art. 14.
[22] *State of W.B. v. Anwar Ali Sarkar*, A.I.R. 1952 S.C. 75, 82.
[23] *State of Bombay v. F.N. Balsara*, A.I.R. 1951 S.C. 318
[24] *E.P. Royappa v. State of Tamil Nadu*, (1974) 4 S.C.C. 3.

II. Substantive equality and the recognition of structural discrimination

The most significant development came with the Court's embrace of **substantive equality**. In *Navtej Singh Johar v. Union of India*, decriminalising homosexuality, the Court stressed that Article 14 protects not just against formal inequality but against systemic disadvantage:

> *"Article 14 is the pledge of equal protection of laws and it must mean the protection of equal laws for all persons and not laws that discriminate."*[25]

Similarly, in *Shayara Bano v. Union of India*, where instant triple talaq was invalidated, the Court held that practices violating the dignity and equality of women were per se unconstitutional, regardless of legislative sanction.[26] These cases signal that Article 14 must be understood not as a procedural guarantee alone but as a substantive commitment to dismantling entrenched hierarchies.

III. Why existing doctrines falter in the algorithmic society

Despite this jurisprudential richness, existing Article 14 doctrines encounter three difficulties when applied to algorithmic bias.

First, the **classification test** assumes visible legislative distinctions. Algorithmic harms rarely present themselves as explicit categories; instead, they manifest through proxies such as geolocation, device type, or transaction data. An algorithm that consistently assigns lower credit scores to rural women does not "*classify*" them overtly, yet its outcomes reproduce gendered and spatial exclusion.

Second, the **arbitrariness test** presupposes that reasons for state action are accessible to judicial review. Algorithmic systems, however, often operate as black boxes. Even when reasons are available, they are probabilistic correlations rather than legal justifications. Courts trained to interrogate legislative intent may find themselves ill-equipped to scrutinise model architectures or training datasets.

Third, substantive equality as articulated so far has been responsive **to human institutions of discrimination** (such as laws criminalising homosexuality or patriarchal religious practices). Algorithmic systems complicate this picture because they reproduce inequality invisibly,

[25] *Navtej Singh Johar v. Union of India*, (2018) 10 S.C.C. 1.
[26] *Shayara Bano v. Union of India*, (2017) 9 S.C.C. 1

without explicit animus or statutory endorsement. The challenge, then, is to recognise structural bias generated by technological systems as within the remit of constitutional equality.

IV. Toward a doctrine of algorithmic equality

To make Article 14 meaningful in the algorithmic era, Indian constitutional law must adapt along three axes.

1. Recognising proxy discrimination as unconstitutional. Just as the Court has recognised indirect discrimination under Articles 15 and 16,[27] it must acknowledge that neutral-seeming proxies in algorithmic models can serve as stand-ins for caste, gender, or class, thereby violating Article 14. Comparative jurisprudence offers support: the European Court of Justice has held that practices with a disproportionate impact can amount to discrimination even absent intent.[28]

2. Recasting arbitrariness to include opacity. If arbitrariness is the enemy of equality, then opacity in decision-making must be treated as constitutionally suspect. The state cannot deploy or endorse algorithmic systems that affect rights without ensuring transparency and explainability. Courts in Canada and the Netherlands have already invalidated opaque welfare algorithms for violating due process and equality.[29]

3. Embedding substantive equality in AI governance. Substantive equality requires that technology be evaluated not only for individual fairness but also for its structural impact on disadvantaged groups. Just as *Navtej Johar* required the law to respond to the lived experiences of marginalised communities, algorithmic deployments must be assessed for their disproportionate impact on those at the intersections of caste, gender, and poverty. This doctrinal move aligns with India's constitutional morality, which enjoins the state to act as a *"counter-majoritarian force"* protecting vulnerable minorities.[30]

[27] *Indra Sawhney v. Union of India*, 1992 Supp. (3) S.C.C. 217
[28] Case C-170/84, Bilka-Kaufhaus GmbH v. Weber von Hartz, 1986 E.C.R. 1607 (E.C.J.).
[29] *ECLI:NL:RBDHA:2020:1878* (Hague Dist. Ct. Feb. 5, 2020) (Netherlands SyRI case); *Canada (Citizenship & Immigration) v. Vavilov*, [2019] 4 S.C.R. 653 (Can.).
[30] *K.S. Puttaswamy v. Union of India* (Privacy Case), (2017) 10 S.C.C. 1.

PART III — COMPARATIVE AND TRANSNATIONAL PERSPECTIVES ON ALGORITHMIC BIAS AND EQUALITY

The constitutional challenges posed by algorithmic governance are not unique to India. Across jurisdictions, legislatures and courts are grappling with how to embed equality norms into technical infrastructures. Yet the comparative picture reveals a spectrum: the European Union has adopted a detailed regulatory regime in the **AI Act**, Latin America is experimenting with rights-based frameworks, while Global South states often face capacity constraints that limit effective oversight. This section situates India within this evolving global landscape.

I. The European Union: AI Act and the principle of fundamental rights

The **European Union's AI Act (2024)** is the world's first comprehensive legislation specifically addressing AI. It adopts a risk-based framework and explicitly links algorithmic governance to the protection of equality and fundamental rights. Article 5 prohibits *"AI systems that deploy subliminal techniques… or that exploit vulnerabilities of specific groups of persons*" where such use may cause harm.[31] Article 10 requires that "*training, validation and testing data sets shall be relevant, representative, free of errors and complete,*"[32] directly targeting the data-bias problem. Article 14 further mandates human oversight to *"prevent or minimise risks to health, safety or fundamental rights*."[33]

The EU's insistence on **fundamental rights language** is significant. By embedding constitutional values into a regulatory instrument, the AI Act recognises that bias is not a neutral technical flaw but a rights violation. While Indian constitutional law already protects equality through Article 14, the EU's approach demonstrates how legislation can operationalise those values ex ante, through design requirements and audit obligations.

II. Brazil: AI Bill and the turn to rights-based governance

Brazil has positioned itself as a leader in Latin America on AI governance. Its Draft Artificial Intelligence Bill (2021, under revision in 2023–25) opens with a declaration that AI development must respect *"fundamental rights and guarantees, including privacy, protection*

[31] Regulation (EU) 2024/1689 of the European Parliament and of the Council of 13 June 2024 on Artificial Intelligence, art. 5, 2024 O.J. (L 1689) 1.
[32] Id. art. 10.
[33] Id. art. 14.

of personal data, equality, non-discrimination, and due process."[34] Article 3 of the draft identifies principles such as "*transparency, security, responsibility, and auditability*."[35]

Brazil's emphasis on **non-discrimination and due process** directly aligns AI governance with constitutional equality. The Brazilian debate has also highlighted the dangers of algorithmic welfare administration, drawing lessons from the Netherlands' **SyRI case**, where a welfare fraud-detection algorithm was struck down for violating the European Convention on Human Rights.[36] For India, Brazil's rights-based statutory drafting shows how developing states can pre-empt algorithmic harms by legislating constitutional safeguards upfront.

III. South Africa and Kenya: Equality jurisprudence in a digital key

In South Africa, the **Constitution's Equality Clause (Section 9)** provides that *"everyone is equal before the law and has the right to equal protection and benefit of the law,*"[37] and prohibits "*unfair discrimination"* directly or indirectly. Courts have interpreted this to cover indirect and structural disadvantages, a doctrine that could apply squarely to algorithmic bias. While South Africa has not yet passed dedicated AI legislation, the **Protection of Personal Information Act (POPIA)** requires responsible parties to process data lawfully and fairly, giving citizens rights to access and correction.[38] Scholars argue that these provisions, combined with Section 9, can ground challenges against algorithmic discrimination.[39]

Kenya's **Data Protection Act 2019** contains a right not to be subject to a decision *"based solely on automated processing, including profiling,"* where such decisions significantly affect a person.[40] Although enforcement has been uneven, the statutory recognition of automated bias as a rights issue is notable for a Global South jurisdiction. For India, these models illustrate how constitutional equality can be supplemented by statutory protections against algorithmic opacity.

[34] Projeto de Lei No. 21/2020, Dispõe Sobre o Uso da Inteligência Artificial no Brasil [Bill No. 21/2020 on Artificial Intelligence], art. 2 (Braz.).
[35] Id. art. 3.
[36] ECLI:NL:RBDHA:2020:1878 (Hague Dist. Ct. Feb. 5, 2020) (Netherlands SyRI case).
[37] S. Afr. Const., 1996, § 9.
[38] Protection of Personal Information Act 4 of 2013 (S. Afr.), §§ 11–23.
[39] See generally Michael Kende, *South Africa and AI Governance: Constitutional Equality and Data Protection*, 15 Afr. J. Legal Stud. 223 (2023).
[40] Data Protection Act No. 24 of 2019, § 35 (Kenya).

IV. Global South constraints: compute sovereignty and capacity gaps

Despite these innovations, most of the Global South remains structurally disadvantaged in algorithmic governance. A recent study of **AI compute sovereignty** found that out of 225 cloud regions globally, only 33 countries hosted AI accelerator-enabled data centres; in Africa, only South Africa did so, and in South America, only Brazil.[41] India is one of the few Global South countries with significant public cloud AI compute, but dependence on foreign providers persists. This infrastructural imbalance hampers states' ability to develop, audit, and regulate AI systems on their own terms.

Market adoption also lags. In the **legal AI sector**, global revenues are projected to exceed USD 8 billion by 2034, with the "*legal research and case law analysis*" segment alone crossing USD 1 billion.[42] Yet uptake in the Global South remains limited, particularly in courts and small firms. Without investment in public infrastructure and research, algorithmic tools risk being imported wholesale, along with their embedded biases.

V. Lessons for India

The comparative survey suggests three lessons. First, embedding **fundamental rights language** into regulatory instruments, as in the EU, ensures that constitutional values are operationalised from the start. Second, Brazil's rights-based statutory drafting shows that democracies of the Global South can legislate proactively, even in the absence of massive infrastructural capacity. Third, the South African and Kenyan experiences highlight the value of constitutional equality provisions in checking automated discrimination, but also the limits imposed by infrastructural dependence.

For India, the challenge is to bridge doctrinal richness with regulatory foresight. Article 14 provides a constitutional compass, but without legislative support, on transparency, auditability, and fairness, courts may be left to adjudicate harms only after they have crystallised. The comparative picture underscores that algorithmic bias is not only a constitutional issue but a global justice issue, where infrastructural inequality amplifies substantive inequality.

[41] Zoe Hawkins, Vili Lehdonvirta & Boxi Wu, *AI Compute Sovereignty: Infrastructure Control Across Territories, Cloud Providers, and Accelerators* (SSRN 2025), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=5312977.
[42] Global Market Insights, Legal AI Market Size Report, 2024–2034 (2024), https://www.gminsights.com/industry-analysis/legal-ai-market .

PART IV — TOWARD AN EQUALITY-CENTERED CONSTITUTIONAL FRAMEWORK FOR AI IN INDIA

Indian constitutional law has never been static; it has consistently evolved to meet new forms of power. From dismantling feudal structures after independence to recognising privacy and sexual orientation in the twenty-first century, the judiciary has insisted that Article 14 embodies a "dynamic concept with many aspects and dimensions."[43] The algorithmic society represents the latest arena in which equality must be defended. What makes this challenge distinctive is not only the scale and opacity of AI but the way it shifts power from visible state actors to invisible technical infrastructures. Addressing this requires doctrinal imagination, institutional vigilance, and fidelity to constitutional morality.

I. Recasting Equality in the Algorithmic Age

The classical doctrines of reasonable classification and arbitrariness are insufficient when discrimination is buried in data correlations rather than legislative text. The judiciary must instead interpret Article 14 as prohibiting **structural exclusion** regardless of form. This requires acknowledging that proxy variables, such as smartphone usage or postal code can serve as digital stand-ins for caste or class. Just as the Court in *Indra Sawhney v. Union of India* warned that inequality often manifests indirectly,[44] Indian jurisprudence must recognise algorithmic bias as a constitutional wrong even absent express intention. Equally, the notion of arbitrariness must be reimagined. In *Maneka Gandhi v. Union of India*, the Court read "*procedure established by law*" to mean fair, just, and reasonable procedure.[45] In the digital age, opacity itself should be seen as unfair procedure. A decision that cannot be explained, audited, or challenged is no less arbitrary than one made capriciously by a public officer. By this reasoning, black-box AI systems deployed in welfare, policing, or credit scoring are constitutionally suspect unless accompanied by meaningful transparency.

II. Institutional Responsibility and Constitutional Morality

Constitutional morality, as Justice Chandrachud explained in *Navtej Singh Johar v. Union of India*, obliges the state to act as a "*counter-majoritarian force*" protecting the dignity and equality of vulnerable groups.[46] This responsibility cannot stop at the legislature or judiciary;

[43] *E.P. Royappa v. State of Tamil Nadu*, (1974) 4 S.C.C. 3.
[44] *Indra Sawhney v. Union of India*, 1992 Supp. (3) S.C.C. 217, 243–44
[45] *Maneka Gandhi v. Union of India*, (1978) 1 S.C.C. 248
[46] *Navtej Singh Johar v. Union of India*, (2018) 10 S.C.C. 1

it extends to the executive when it embraces technological tools. Yet India currently lacks institutional mechanisms to ensure that AI deployments uphold constitutional values. Pilot projects such as facial recognition in Telangana or predictive policing experiments in Delhi proceed without statutory safeguards, public consultation, or independent evaluation.[47] The legislature must fill this vacuum. Drawing inspiration from the EU AI Act's ex ante risk classification,[48] India could establish a statutory regime for **Algorithmic Impact Assessments** before any high-stakes system is rolled out. Such a framework would not be alien to Indian governance. Environmental Impact Assessments, despite their flaws, have long been mandated for projects affecting ecology; the same logic applies when technologies affect rights. Similarly, independent audits, perhaps housed within the Comptroller and Auditor General or a specialised ombudsman, could ensure ongoing accountability. The executive, too, must shoulder responsibility. The Reserve Bank of India's *Framework for Responsible and Ethical Enablement of Artificial Intelligence (FREE-AI)* (2025) is a promising start, identifying risks of bias and opacity in financial systems.[49] It would be a mistake, however, to believe that sectoral direction can replace a commitment throughout government to equity and transparency. The legal mandate to publish model cards, audits and fairness evaluations should be legally required to ministries that procure AI systems. It is not simply a question of good governance but rather a question of doing what is in conformity with the Constitution.

III. The Judiciary as Guardian of Algorithmic Equality

Finally, the judiciary needs to renew its interpretive toolkit. The courts have already demonstrated a willingness to critique the technological state as noted in K.S. Puttaswamy v. Union of India (Privacy Case), where the court concluded that the right to informational self-determination is part of dignity[50]. This reasoning would easily apply itself to the problem of algorithmic decision-. If a citizen cannot learn the "*why*" behind the models denial of his welfare or bail, we have undermined both his dignity and, importantly, his autonomy Comparative experience reinforces this trajectory. In 2020, the Hague District Court struck down the Netherlands' SyRI welfare surveillance system because its opacity and

[47] Telangana Introduces AI-Powered Facial Recognition System for Student Attendance, *Times of India* (Aug. 6, 2025), https://timesofindia.indiatimes.com/.
[48] Regulation (EU) 2024/1689 of the European Parliament and of the Council of 13 June 2024 on Artificial Intelligence, arts. 5, 10, 14, 2024 O.J. (L 1689) 1.
[49] Reserve Bank of India, *Framework for Responsible and Ethical Enablement of Artificial Intelligence (FREE-AI)* (Aug. 2025), https://www.rbi.org.in/.
[50] *K.S. Puttaswamy v. Union of India* (Privacy Case), (2017) 10 S.C.C. 1

disproportionate targeting violated the right to privacy and equality.[51] Canadian courts, too, have insisted that administrative decisions influenced by opaque algorithms must still meet constitutional standards of justification and transparency.[52] Indian courts can draw on these examples while grounding their reasoning in Article 14's substantive equality.

Importantly, remedies must be forward-looking. Striking down discriminatory practices after harm occurs is inadequate when algorithmic harms are systemic and cumulative. The judiciary could require state authorities to demonstrate proactive bias audits, akin to the *"positive obligations"* doctrine under Article 21. Such a move would resonate with Justice Bhagwati's insistence in *Royappa* that equality cannot be imprisoned in doctrinaire limits but must adapt to new realities.[53]

IV. A Living Constitution for a Digital Republic

The Indian Constitution was written at the time when census forms and fingerprint records were the most sophisticated technologies of administration. The framers of the Constitution were careful in the choice of principles that were broad enough to withstand the test of time. The equality before the law as guaranteed in Article 14 is not merely an attribute of the twentieth century - it is a breathing order to be confronted by the twenty-first century technologies. Assuming constitutional morality was to place limits on parliament to safeguard minorities, then it now demands limitation of algorithms to safeguard the citizens against unseen exclusions. To limit such algorithms, India should form a different mindset to algorithmic bias as a technical issue. It is, after all, a constitutional injury. It will need the doctrinal boldness of the courts, statutory clarity of the Legislatures, and ethical responsibility of the Executive. To be called the largest democracy in the world, India must as well be called the first algorithmically just republic in the world.

[51] ECLI:NL:RBDHA:2020:1878 (Hague Dist. Ct. Feb. 5, 2020) (SyRI case).
[52] *Canada (Citizenship & Immigration) v. Vavilov*, [2019] 4 S.C.R. 653 (Can.).
[53] *E.P. Royappa v. State of Tamil Nadu*, (1974) 4 S.C.C. 3

CONCLUSION

The advent of artificial intelligence in governance has been hailed in India as the victory of modernisation. According to policymakers, it is a way of reducing inefficiencies, sealing leakages as well as democratising access to services. But what our discussion reveals is that efficiency in the absence of accountability is a risky deal. An algorithm which refuses welfare based on a faulty set of data, or that one that continues to reproduce bias through its implicit scoring models, does not simply malfunction, but it silently redefines citizenship and belonging. Once discrimination has been automated, it becomes difficult to challenge as well as more difficult to detect. Here is the constitutional threat. Formal equality has never been the only focus of Article 14. It was to ensure that the state would not produce second-class citizens. Neural networks and generative models were beyond the imagination of the framers, but they were too familiar with how power surrounds itself with apparently neutral structures. In the current algorithmic society, data-driven systems that recreate social divisions in the guise of objectivity are that structure. When unchecked, they can substitute observable bias with unobservable marginalization.

And at this point the judiciary plays a key role. When the court perceives algorithms as mere instruments that do not need constitutional review, then it will not be fulfilling its role as a protector of equality. When the court treats algorithms as new loci of power, then the doctrines of substantive equality, arbitrariness and constitutional morality can be applied to check power. This is not the first time the court has redefined what has been defined in law (Maneka Gandhi), dignity (Puttaswamy), or morality (Navtej Johar). After every occasion, the court picks a principle out of the text and puts a new life into it in a new age. This is required of the algorithmic turn. The legislature should also play its role. India cannot afford to merely push the button of implementing high stakes AI systems without auditing, lack of transparency mandate and remediation. This would be to put a bet on the constitution rights of citizens in the name of progress. The comparative experience tells us that regulation can work: the AI Act of the EU brings rights to life through data quality audits and human mediation, and that Global South democracies can create laws proactively even in situations of scarcity. India is a country with strong constitutional jurisprudence and a vision to be technologically ahead of the curve.

Nevertheless, the more important question is not about institutions but rather about morality: what sort of republic will India become in the era of algorithms? A republic where technocratic systems are allowed to stratify the citizens without their awareness or a republic where technocratic systems must be required to be as answerable as legislatures and executives? This question will eventually decide whether AI is an aid to the advancement of democracy or a threat to it internally, since the decisive debate on the subject of artificial intelligence is not about this technology itself, but about the type of democracy India itself wishes to be. If it is left unchecked, algorithms will convert invisible prejudice into governance, deciding who receives welfare, credit, or even liberty without transparency or accountability. Article 14 cannot remain a passive observer of this transition. It needs to be the prism through which we evaluate whether technology expands freedoms or quietly diminishes them.

As Justice Bhagwati reminded us in *Royappa*-

> *"Equality is a dynamic concept with many aspects and dimensions and it cannot be imprisoned within traditional and doctrinaire limits"*

To honour that vision today is to recognise algorithmic bias not as a technical flaw but as a constitutional injury. If equality is dynamic, then it must evolve to confront the new forms of power that threaten it. To do otherwise is to accept that in the digital age, the Constitution can be bypassed by code.